Beyond their Reflection: An Examination of Self-concept, Body image and Experiences of Adolescent Girls with Anorexia Nervosa

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A thesis submitted to the School of Psychology, University of Western Sydney, in fulfilment of the requirements for the degree of Doctor of Philosophy

May, 2006

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Dedicated to the three most significant people in my life: my mother, father and beautiful sister: in recognition of their love, faith and support.
ACKNOWLEDGEMENTS

I would like to firstly thank my supervisors Professor Herb Marsh, Associate Professor Christine Halse and Associate Professor Andrew Martin. It has certainly been a pleasure working with each and every one of you, and you have all taught me a tremendous amount. I feel both honored and privileged to have been able to work with all of you. Special thanks must go to Professor Herb Marsh for his encouragement and steadfast support throughout my candidature. You have been able to teach me a great deal, and I am forever grateful. Further, I would like to thank Associate Professor Andrew Martin. Thank you for your feedback and advice during the final stages and for coming on board to help me finish.

Additionally I am grateful to the support staff at the SELF research centre, for making it as easy as possible for me to get my research done.

I would like to express my gratitude to the two participating hospitals and all the treatment teams and clinicians for assisting me in my endeavor to recruit participants and collect data. Further, I would like to thank you all for your inspiration. What you do for the girls and their families in helping them face their day-to-day challenges is both encouraging and inspiring.

To my fellow SELFers: Alison, Gen and Jasmine: thank you for being there and helping me escape when I needed it. Thank you for listening to me vent when I was frustrated and upset and for being shoulders to cry on when I thought that this journey would never end. Thank you Marjorie: for being that constant and ever-stable shoulder to cry on and for teaching me everything that you have over the last couple of years. Jackie and Gawaian: thank you both so very much for being you, and being great company in the office…not sure how I would have done it without all of the little things that you guys do. And last but not least, thank you Linda, for being the friend that you are, for being supportive and loving no matter where you were in the world.

I would also like to thank Stacey- my distance support, my distance office partner, and my coffee partner. Thank you so very much for all your support throughout the years. Thank you for being understanding and supportive and thank you for making me laugh when I needed it the most.

Special thanks to my mum, my dad and my sister: there are no words that can express how grateful I am to have you all in my life, to have your unwavering love and support, and to have had you by my side every step of the way. Without your belief and faith in me, I would not have had the courage to begin this journey, and most certainly, without your patience, encouragement and support, I would not have been able to overcome all of the challenges that I have had to face throughout the process. Trang: thank you for making sure that I came home and for making sure that my journey through this was not just about work. I am truly grateful for your never-ending support, your ability to give me perspective and your ability to crack me up and make me forget about work—even if it was just for a second.
Statement of Authentication

The work presented in this thesis is, to the best of my knowledge and belief, original, except as acknowledged in the text. I hereby declare that I have not submitted this material, either in whole or in part, for a degree at this or any other institution.

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ABSTRACT

Anorexia nervosa is recognised as a complex and chronic disorder that is often associated with poor prognosis and severe psychological and physiological consequences. As a result of the increasing incidence of anorexia nervosa, there has been considerable attention given to it and other eating disorders. Previous research has identified an array of factors associated with anorexia nervosa of which self-esteem, self-concept and body image are amongst the most commonly cited factors involved in the development and maintenance of the disorder. Despite a plethora of research, a clear model of the factors and the complex interplay between these factors in anorexia nervosa remains elusive. Further, despite the recent recognition of the importance of understanding and investigating the experiences of individuals with chronic illnesses, only a small handful of investigations have explored the experiences of patients.

Capitalising on recent advances that have been made in other realms of psychology, the current study attempts to address current limitations regarding self-esteem, self-concept, body image and experiences of adolescent girls with anorexia nervosa. More specifically, a series of three studies were designed to address a) self-esteem and self-concept; b) body image and the association between body image and self-concept; and c) the experiences and support needs of young people with eating disorders.
First, using advanced Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) techniques, Study 1 evaluated a well established multidimensional model of self-concept in adolescent girls with anorexia nervosa \((n = 76)\), and a non-clinical, normative sample of adolescent girls \((n = 829)\). The results clearly demonstrated the benefit of considering the multidimensional model of self-concept in eating disorders and further emphasised that although self-esteem is lower for clinical girls, there are specific domains of self-concept that differ between clinical and non-clinical girls.

The second of the current series of studies applied the principles of the self-discrepancy theory to body image in adolescent girls. The silhouette matching task (otherwise known as the figure rating scale) was employed to determine how actual ratings of body image, ideal ratings of body image and the discrepancies between them, were related to specific domains of self-concept. The results provided some support for the self-discrepancy theory and, in line with previous research, it was shown that there were significant differences between all three silhouette matching task ratings for clinical and non-clinical girls.

Finally, to address the significant paucity within the literature regarding the experiences of young people with eating disorders, Study 3 employed qualitative techniques to explore the experiences and constructions of anorexia nervosa in a sample \((n = 16)\) of inpatients with anorexia nervosa. Subsequently to this analysis, a vignette style questionnaire was developed and administered, to explore the experiences and support needs of young people with eating disorders \((n = 84)\). The findings of Study 3 indicated that although there is a variety of ways that young people construct their eating disorders and their treatment experiences, there are
some consistencies in their understanding of the factors involved in recovery and the impact the disorder has on their everyday lives and significant relationships.

These findings have important clinical and research implications for current understandings of anorexia nervosa in adolescent girls, and extend current knowledge regarding negative self-esteem, self-concept and body image as characteristics of anorexia nervosa. Furthermore, the current findings have demonstrated that whilst quantitative methods can be effectively utilised to elucidate various relations between predictor and outcome variables, qualitative methods can offer important insight into the patient with the eating disorder. On a more general level, the current results obtained from the current series of studies may be able to inform current conceptualisations of anorexia nervosa and the future development of aetiology and treatment programs.
CHAPTER 1
INTRODUCTION

Anorexia nervosa is recognised as a complex psychiatric disorder that has become an increasing problem in today’s society. Anorexia nervosa is one of three classified eating disorders (APA, 2000) in the Diagnostic and Statistical Manual of Mental Disorders (DSM; APA, 2000). Traditionally, the term “anorexia nervosa” was coined to describe a disorder that existed in developed westernised cultures of the world such as Australia, the United States and Western Europe. Recent investigations however, have demonstrated that anorexia nervosa does not occur exclusively in westernised cultures, but affects many different cultures around the world. Furthermore, although many believe that anorexia nervosa is a disorder that only affects women, recent statistics suggest that there has been an alarming increase in the incidence of anorexia nervosa in men and in young boys. Hence, despite efforts to curb the incidence of eating disorders, the incidence and prevalence of disorders such as anorexia nervosa, continues to increase in Australia and around the world.

To illustrate the seriousness of the problem in society, anorexia nervosa has been cited as the third most common chronic illness that affects adolescent girls, after asthma and obesity (Jimerson, Pavelski, Orliss, & D’Arguma, 2002), and is associated with high mortality rates, low recovery rates and prolonged lengths of illness. Due
mainly to the complexity of the factors involved in the development and maintenance of the disorder, researchers have emphasised that anorexia nervosa is one of the most complex and difficult disorders to treat. Hence, given the increasing incidence and prevalence rates of the disorder, the American Psychological Association has recommended more research and development to increase understanding of aetiology and to improve early recognition/detection methods (APA, 1993).

Since the first writings about eating disorders, the factors that underlie the motivation for individuals to engage in such damaging and harmful eating behaviours have baffled researchers, doctors and health professionals alike. To date, researchers have identified a myriad of factors that may contribute to the onset and maintenance of anorexia nervosa and other related eating disorders. Hence much like other mental illnesses, researchers and clinicians have recognised the multidimensionality of anorexia nervosa, and have adopted the bio-psychosocial model of causation in an attempt to develop more accurate aetiology models. The bio-psychosocial model specifies that the cause and development of eating disorders involves a complex interplay of numerous factors including: biology (such as genes and brain activity), society and environment (such as family, peers and media) and individual psychology (such as self-concept, body image and personality).

Amongst an array of risk factors, two of the most common individual psychological factors cited as risk and causal factors are low self-esteem and high levels of body image dissatisfaction. As a result there has been a large volume of research investigating these factors. Despite this, a clear understanding about the relationships between these factors and eating disorders still remains elusive. In terms of self-esteem research, authors have argued low self-esteem is a core component of anorexia nervosa, and most have demonstrated that individuals with eating disorders
have lower levels of self-esteem than individuals who do not have eating disorders. However, some authors have indicated that self-esteem can not be used to differentiate anorexia nervosa and other eating disordered patients, whilst others have argued that self-esteem can not be used to distinguish between clinical patients. Hence, researchers have raised questions about the usefulness of self-esteem as a core criterion for anorexia nervosa.

Similarly, although there has been an abundance of literature addressing body image and body image distortion across populations, results have been inconsistent. For example, although a diagnostic criterion for anorexia nervosa is body image disturbance/distortion, some researchers have indicated that patients with anorexia nervosa in fact do not overestimate their body size, whilst others have found that patients and non-eating disordered individuals overestimate their body shapes to the same extent. However, other authors have indicated that there are significant differences in size estimation for clinical and non-clinical samples. Some researchers have stipulated that this inconsistency in results regarding body image distortion is a result of various measurement issues, including a lack of consistency in the instruments used to assess the variable. Subsequent reviews of the literature have indicated that although objective measures of body image estimation have yielded inconsistent results, more affective and attitudinal scales have obtained consistent results indicating that higher body image dissatisfaction is associated with higher levels of eating disorder symptomatology. One of the more favoured instruments used in the area is the silhouette matching task. Some investigators have argued that the research using this method, despite producing more consistent results, is limited in that only a small handful of researchers have adopted a theoretical approach to the examination of both self-esteem and body image.
In an attempt to address these limitations, the current series of studies adopted strong and well established theories for self-concept and body image that had not been used within this specific area of mental health. More specifically, a more descriptive multidimensional model of self-concept was employed to determine and examine the self-concept profiles of adolescent girls with and without anorexia nervosa. Furthermore, the self-discrepancy theory for body image was examined in relation to the silhouette matching task, to examine the specific relationships between body image, self-concept and eating disorders. In evaluating the self-discrepancy theory for body image, actual, ideal and discrepancies between the actual and ideal ratings for body image can be examined for both the anorexia nervosa sample and the normative samples of adolescents and hence further evaluations of body image dissatisfaction in adolescent girls can be made.

Over the last several decades, researchers have emphasised the importance and usefulness of understanding patient experiences. Authors have highlighted that patients are rarely given a voice, and by providing them with an avenue in which to express and communicate their experiences and needs, clinicians and researchers will be able to form clearer descriptions and models of the illnesses and disorders that they are treating and researching. Despite the recognition of the importance of understanding the lived experience however, only a handful of researchers explored the daily lived experiences of patients with eating disorders. In addition, the current body of literature is limited in that much of the research in the field has focused on the adult population of sufferers, despite prevalence and incidence data indicating that the highest incidence is within the adolescent population (Jimerson, Pavelski, Orliss, & D’Arguma, 2002). Consequentially, understandings of anorexia may be limited as adult experiences, despite the fact that the manifestation and developmental patterns
for anorexia nervosa in adolescents may be different. Furthermore, their experiences and support needs throughout the illness trajectory are likely to be different in comparison to adult sufferers. Thus, in an attempt to address this gap in the literature, the third study in this series of studies investigated the experiences and support needs of adolescent girls with eating disorders. The experiences and support needs were examined in three stages, in which interviews with adolescent inpatients were analysed, significant themes were developed into vignettes for an assessment instrument, and finally the generalisability of the themes was assessed when the vignette questionnaire was administered.

Despite the plethora of research within the field of eating disorders, body image and self-concept, researchers and clinicians around the world are yet to develop an aetiological model that comprehensively maps the factors and the interactions between the factors involved in the onset and maintenance of anorexia nervosa. Given the ever-increasing rates of anorexia nervosa in the population it is imperative that researchers and clinicians gain a better and clearer understanding of the factors that are associated with the development and maintenance of anorexia nervosa, particularly within the adolescent population. This study attempts to address specific gaps within the eating disorders literature and thus provide more detailed information regarding the common factors associated with anorexia nervosa.
CHAPTER 2
LITERATURE REVIEW

Introduction

Anorexia nervosa can be a serious and debilitating disorder (Walsh & Devlin, 1998) that affects a significant number of the population. Anorexia nervosa is viewed as a complex and multifactorial illness associated with a wide range of risk factors and is recognised as one of the most chronic illnesses that affects the female adolescent population. To highlight the chronicity of the condition, anorexia nervosa is associated with very high mortality rates, low recovery rates, and frequent relapses. Furthermore, treatment is often complex, time consuming, and expensive for patients and their families. Given the complexity of the disorder and the treatment programs that are associated with it, a plethora of research has has been conducted to increase researcher and clinician understanding of the condition and the efficacy of treatment methods and the efficacy of prevention programs. However, despite the wealth of literature that is available, a clear understanding of the factors associated with onset, maintenance, and recovery still remain elusive. Given this lack of clarity in aetiology
and psychopathology, this study attempts to investigate anorexia nervosa in adolescent girls.

The purpose of the current chapter therefore, is to review the literature and research into anorexia nervosa. More specifically, this chapter aims to describe and discuss the aetiology, epidemiology, and risk factors associated with anorexia nervosa, and furthermore, explore the research regarding patient perspectives on their experiences with anorexia nervosa. In doing this, it is hoped that the significant gaps that exist in this body of literature will be identified and discussed in terms of the research aims and hypotheses of the current investigation. More specifically, the current literature review will focus on three aspects of anorexia nervosa: self-concept, body image, and the lived experiences of adolescent patients with anorexia nervosa.

**Diagnostic Criteria for Anorexia Nervosa**

Eating disorders have been classified as complex and chronic psychiatric disorders (Casper, 1998; Vitousek, Watson, & Wilson, 1998) and include three different subtypes of disorders including Anorexia Nervosa, Bulimia Nervosa, and Eating Disorders Not Otherwise Specified (EDNOS). According to the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV: American Psychiatric Association, 1994), the criteria for anorexia nervosa include an inability and/or refusal to maintain normal body weight based on a morbid fear of fatness, and a body weight of less than 85% of what is considered normal for that height and age. Patients with anorexia nervosa have also been reported as having significant body image distortion and disturbance in the way that they experience their body, placing more emphasis on physical appearance and body image when evaluating the self. Patients are reported to often be in denial of their condition and to have a lack of insight into the seriousness of their condition. An additional diagnostic criterion for
pubertal females is amenorrhea, or the absence of at least three consecutive menstrual cycles.

**Subtypes of Anorexia Nervosa**

The DSM-IV identifies two different subtypes of anorexia nervosa. The first is the restricting subtype, and the second is the binge/purge subtype. For patients diagnosed with the restricting subtype of anorexia nervosa, weight loss is primarily achieved through a reduction of food intake, through dieting, and selective eating and/or fasting. These individuals usually also engage in excessive and compulsive exercising as another means of losing weight and maintaining their low weight. Patients diagnosed with the binge eating/purging subtype of anorexia, primarily lose weight through excessive and inappropriate use of laxatives and/or diuretics or engage in self-induced vomiting after eating. Some of the individuals that are diagnosed with this subtype of anorexia nervosa do not binge eat, but regularly purge; even after small meals. Typically, patients with this type of anorexia engage in these purging behaviours at least weekly.

**Limitations of the Diagnostic Criteria**

The DSM was designed to be a guide to assist clinicians and practitioners to distinguish and categorise patients and psychiatric conditions. However, some authors have argued that the manual’s diagnostic guidelines have become somewhat “worshipped and taken as Gospel truth. Even though the small print somewhere says that this is a guideline and does not take away individual clinical decision making, it has become de facto law” (Andersen, 2002; p. 177). Questions have thus been raised as to the usefulness and practicality of the manual in classifying disorders such as
anorexia nervosa, despite the attempt to clearly specify criteria for diagnosis (Herzog & Delinsky, 2001).

Although the DSM-IV provides clear guidelines for the diagnosis of anorexia nervosa and other eating disorders, questions have been raised regarding whether these classification systems can be applied to all cases that clinicians and practitioners are faced with. That is, does strict adhesion to the criteria mean that clinicians and practitioners will miss and exclude individuals in the early stages of the disorder or those who have subclinical characteristics? Or will sufferers with a discrepancy in the magnitude of symptoms evade diagnosis even though the symptoms are clearly present?

First, authors have questioned the usefulness of classifying distinct subtypes of eating disorders, arguing that there are such large similarities between the disorders, and further, that there is very little stability in diagnosis (Herzog & Delinksy, 2001; Milos, Spindler, Schnyder, and Fairburn, 2005). That is, recent research has indicated that individuals often move between diagnoses at various times within the illness trajectory. For example, Milos et al. (2005) demonstrated that although the broad eating disorder diagnoses remained stable over 30 months, two thirds of their participant sample moved from one specific diagnosis of an eating disorder to another over the follow up period. Further, Bulik, Sullivan, Fear, and Pickering (1997) found that 54% of patients with anorexia nervosa had developed bulimia or bulimic behaviours at some stage during the 15.5 year follow up period, hence suggesting that perhaps the different types of eating disorders are more like a continuum of disorders rather than discrete disorders. In contrast, Beumont and Touyz (2003) argued that considering eating disorders within a spectrum of disorders confuses treatment issues. They argued that you would not expect someone with anorexia nervosa to respond to
cognitive therapy the same way as someone with bulimia, hence supporting the way that the manual has separated the diagnoses for the different subtypes of eating disorders.

Authors have also claimed that the weight based criteria that are used in the DSM are ambiguous, despite being revised over the last several years. For example, Herzog and Delinsky (2001) argue that although the weight criterion is one of the main features of anorexia nervosa, there is confusion within the field as to what the normal standards are for weight and height, and further as to whether these standards are equally applicable for individuals of different cultural backgrounds. Fisher et al. (1995) suggested that there was such a wide range of weights for ‘normal’ populations there is little consensus as to which standards to apply to diagnostic classifications. Further, there are many standards that do not account for various stages of pubertal development (Adolescent Medicine Committee [AMC], 1998). Furthermore, the characteristics of the disorder in adults and adolescent patients may be entirely different for children (AMC, 1998; Bryant-Waugh & Lask, 1995).

To further add to confusion regarding the importance of the weight criterion, Bryant-Waugh and Lask (1995) suggest that many patients may develop the disorder when they are overweight, in which case, despite rapid weight loss these individuals may not fulfil the 85% weight range criterion. In this case then, despite having lost 15% of their original body weight they would not be classified as eating disordered, regardless of the methods of weight loss employed or may be classified as eating disordered on the based on their original weight.

Additionally, the disorder has been researched within other ethnic cultures, the diagnostic criteria is based almost entirely on Caucasian, European, and North American samples (Herzog & Delinsky, 2001). Hence, while the DSM criteria make
it clear that weight phobia is a characteristic of anorexia nervosa, researchers have reported that in non-western cultures the morbid fear of fat is often not present (Lee, Ho, & Hsu, 1993). In support of this, Wildes, Emery, and Simons (2001) suggested that a limitation of the Diagnostic Manual is the fact that its guidelines fail to recognise the social, religious and cultural activities that may influence such restrictions and eating behaviours, outside the realm of westernised society. Hence, the characteristics of the eating disordered that are specified in the DSM may be limited to westernised societies.

There have also been ongoing debates about the inclusion of amenorrhea as a diagnostic criterion. Garfinkel et al. (1996) argued that amenorrhea often occurs in adult patients and often occurs well into the eating disorder, once significant amounts of weight have been lost. They also suggested that amenorrhea cannot differentiate between women with full criteria anorexia nervosa and those who exhibit only some of the characteristics and attitudes.

Body image researchers have also raised questions regarding the diagnostic criteria for anorexia nervosa. Even though it is a common perception that patients have body image distortion whereby they overestimate their current body size in comparison to normative samples, there is little consensus within the literature. Some researchers (e.g. Slade & Russell, 1973) have shown that patients with anorexia nervosa overestimate their body size whilst others (e.g. Henninghausen et al., 1999) have shown that there are no differences in estimations when comparing clinical and non-clinical populations. The latter research suggests that body distortion does not differentiate between eating disordered and non-eating disordered populations (this research will be discussed in more detail later in the chapter).
Therefore, although the aim of the DSM is to provide a guide for clinicians, practitioners, and researchers to diagnose and categorise individuals and their psychiatric illnesses, questions remain that raise concerns about the clarity of the diagnostic criteria. This however, is not to say that the diagnostic manual has not been and cannot continue to be a vital guide for clinicians for the diagnosis of many psychological and psychiatric disorders, including anorexia nervosa (Andersen, 2002). It does however suggest that clinicians should use their own professional judgement in addition to the DSM to assess and diagnose individuals.

The World Health Organisation (WHO) recognised various limitations in the DSM-IV criteria for anorexia nervosa, and subsequently developed an alternative set of diagnostic guidelines for anorexia nervosa for the International Classification of Disease (ICD) 10th Edition (WHO, 1992), which is utilised throughout Europe. This classification guide was introduced mainly for the purposes of having an international consensus for diagnoses of illnesses and diseases.

The diagnostic criteria set by the WHO appears to be more rigorous than the DSM-IV criteria, and places a greater emphasis on Body Mass Index (BMI: calculated by dividing a patients’ weight in kilograms by their height in metres), the WHO also suggests that this method is the most appropriate way of determining whether or not patients are underweight. Unfortunately however, some of the same issues that applied to the DSM weight criteria are also relevant here. Also included in the WHO criteria is an over-valuation of body image, in which the patient displays a low weight threshold for themselves; has a body mass index of less than 17.5, weight loss or weight maintenance is achieved through self-imposed food restriction; and presence of endocrine disorders that involve amenorrhea for women and a loss of sexual interest and potency for men. According to the guidelines, an individual is
underweight if their BMI is below 20 for adults and below 17.5 for adolescents. However, as with the DSM-IV criteria, these cut-off points for BMI may be variable depending on ethnic and cultural norms.

In addressing the limitations of the DSM-IV for diagnosing childhood and adolescent anorexia, the ICD specifies that “should anorexia nervosa develop before the onset of puberty, the developmental milestones that occur during puberty will be delayed or even arrested” (WHO, 1992). The guidelines also indicate that anorexia nervosa may be associated with depressive or obsessional symptoms, in which case, clinicians and practitioners may need to refer to the diagnostic criteria of co-morbid conditions.

It is clear then, that there are questions that still remain regarding the characteristics that patients exhibit, particularly within the younger populations. As such Beumont and Touyz (2003) have argued that “diagnostic criteria such as those of DSM-IV and ICD-10 are inadequate to determine the patients’ clinical condition” (p. 23). Hence, the current study attempted to address this by examining anorexia nervosa in samples who had received a medical diagnosis of anorexia nervosa, rather than strictly adhering to DSM and ICD guidelines (this process will be described in more detail in chapter 4).

**Clinical Presentation: The Clinical Features and Characteristics**

Individuals with anorexia nervosa are often presented to clinicians and health care professionals because they have lost a substantial amount of weight or have exhibited an inability to obtain weight/height goals that are normal for the individuals’ age group. For women and post-pubertal girls, medical attention is often sought if they have had infrequent or no menstrual activity in the recent past, rather than weight loss. In most cases, patients who are within the child to adolescent age range are
brought to the attention of and taken to local health care professionals for assessments, by concerned parents or guardians. Individuals who independently seek treatment and assistance tend to do so in response to the psychological and physiological outcomes of food restriction and weight loss, as it is rare that individuals present with concerns of being underweight or concerns of weight loss (APA, 2000). However, clinicians and health care professionals are often required to be cautious with their personal reports of physiological symptoms and history. The latter is primarily because patients with anorexia nervosa are often in denial of their eating disorder and the severity of the consequences of their condition (APA, 2000; Crowther & Sherwood, 1997) and thus inaccurately portray and report their own health status.

Physical and Physiological Indicators

According to Fairburn and Harrison (2003) some of the physical and physiological symptoms that a patient may present with may include an increased sensitivity to the cold, dry skin, a condition in which there is a growth of fine downy hair (on the back, face and forearms)—known as lanugo, and alopecia (which refers to the loss of hair). Some patients may also present with hypercarotenemia (orange discolouration of the palms and skin) and heart problems such as bradycardia (irregularly low heart rate for patients who are extremely underweight) and severe hypotension. Prolonged anorexia nervosa may also lead to osteoporosis, due to a lack of calcium intake and absorption; dental problems; and reproductive problems and in some cases infertility (Pomeroy, 1996). Additionally, patients may present with significantly reduced resting energy expenditure; and often complain of lethargy, tiredness, and a lack of ability to concentrate for long periods of time (Pomeroy, 1996;
Steinhausen, 1997). All of these characteristics are perceived to be a result of caloric restriction.

Behavioural and Psychological Indicators

Behavioural and emotional disturbances are common in patients with anorexia nervosa. Some anorexic patients may also engage in excessive exercise regimes as a method of weight loss and have severe distortions about weight, food, and body image (Steinhausen, 1997; APA, 2000). Patients will often go to extreme lengths to learn and count calories and also feel the need to control the cooking within the family environment. Many patients, when in the grips of the eating disorder become socially withdrawn, and exhibit signs of depression which are secondary to the eating disorder. Patients often become irritable and moody, experience insomnia and a lack of libido (APA, 2000). Other psychological indicators may include a sense of ineffectiveness and difficulties expressing and interpreting emotions. The APA (2000) reports that a significant number of anorexia nervosa patients have features and characteristics that overlap with personality disorders and Obsessive Compulsive Disorder.

Epidemiology and Demography

Incidence and Prevalence

Incidence and prevalence are terms used to indicate the frequency and presence of illnesses and disorders within a particular population. Whereas prevalence is defined as the total number of cases in a population (and usually expressed as a percentage of the population), incidence refers to the number of new cases in a population over a specified period of time (Hoek & van Hoeken, 2003).
As a result of the severity and chronicity of anorexia nervosa, prevalence rates tend to be higher than incidence rates. For anorexia nervosa, reported prevalence estimates have ranged from .01% to .90% (see Hoek & van Hoeken, 2003 for a review). Other estimates of lifetime prevalence for anorexia nervosa in women fall between .2% and .69% (Robin, Gilroy, & Baker, 1998; Deshmukh & Franco, 2003; Fairburn & Harrison, 2003; Deering, 2001; Lindberg & Hjern, 2003; Rojo et al., 2003). The APA reports that the lifetime prevalence of anorexia nervosa is .5%. However, the incidence rates for sub-clinical and EDNOS are much higher.

Many studies have indicated that the incidence of anorexia nervosa has increased since the early 1950s. However, it is unclear whether this increase is a true reflection of the actual incidence of the disorder or whether it is due to an increase in community awareness and knowledge about the disorder and the symptoms that are involved (APA, 2000; Hoek & van Hoeken, 2003; Treasure, 1997). Regardless, incidence rates for anorexia nervosa are widely variable, ranging from .10 cases per 100,000 in the 1930s (in Sweden) to 12 per 100,000 in the United States in the 80’s (see Hoek & van Hoeken, 2003 for a review).

Although incidence rates have increased considerably across all age groups since 1950 (Jimerson, et al., 2002), research suggests that adolescent girls are 5 times more likely to develop the disorder in comparison to adults (Pawluck & Gorey, 1998). This is reflected in the incidence rates of anorexia nervosa in the adolescent population, as research has shown that the most substantial increase in the incidence rates for anorexia nervosa has been in 15-24 year old females, who comprise more than 40% of all diagnosed cases (Hoek & van Hoeken, 2003).

Lucas, Crowson, O’Fallon, and Melton (1999) have also found that the incidence of anorexia nervosa for girls aged between 15 and 19 years was 73.9 per
100,000 between 1935 and 1989 and that the incidence of anorexia gradually increased for this population since the early 1930’s until it reached its peak rate of 135.7 cases per 100,000 between 1980-1989. In comparison to this increasing rate of incidence in the adolescent population, Lucas et al. found that the presence of anorexia nervosa in adult women (aged between 30-49 years) occurred in 5.9-9.5 women per 100,000. These results are also consistent with the results of an earlier community study conducted by Lucas and Holub (1995), who investigated the incidence rates and prevalence rates of anorexia nervosa from 1935 through to 1984. Results of this study indicated that over half of the participants had received a diagnosis of anorexia nervosa before the age of 20 years, with only a very small portion of them receiving a diagnosis before the age of 15 years. Hence, the most common age of onset for the disorder, according to much of the epidemiological research is during the adolescent developmental period (Gilbert, Shaw, & Notar, 2000; Lindberg & Hjern, 2003; McVey, Pepler, Davis, Flett & Abdolell, 2002).

Reports have indicated that females are 10 times more likely to be diagnosed with eating disorders in comparison to males (APA, 2000; Deering, 2001), and that males only make up 5-10% of the anorexia nervosa population (Jimerson et al., 2002). Hence, whereas incidence rates for anorexia nervosa are alarmingly high for the female population, incidence rates for males with anorexia nervosa fall below 0.5 per 100,000 per year (Hoek & van Hoeken, 2003), but have been shown to be on the increase.

In Australia, a recent study of prevalence and long-term outcomes of eating disorders in a sample of twins conducted by Wade, Bergin, Tiggemann, Bulik, and Fairburn (2006) indicated that there was a 1.9% lifetime incidence of anorexia nervosa, and an additional 2.4% for those women who presented with partial anorexia.
nervosa (i.e. those patients who had presented with anorexia nervosa, but had some sort of menstrual activity).

Although these research figures suggest that anorexia nervosa is relatively infrequent in comparison to some disorders, anorexia has been cited as the third most common chronic illness that affects adolescent girls (Lucas, Beard, O'Fallon, & Kurland, 1991), and hence the problem is significant, and requires attention and research, particularly given the increase in the incidence of the disorder in various populations. Furthermore, as Lucas, Crowson, O'Fallon, and Melton (1999) emphasise, although there are slight fluctuations in incidence rates for anorexia nervosa and other eating disorders, epidemiological data still suggest that the incidence and prevalence of anorexia nervosa continues to increase, particularly in adolescents and young adult females, despite attempts to develop effective treatment and prevention programs.

It is important to note however, that results of epidemiological research should be interpreted with some degree of caution, mainly due to the fact that many of the studies have used different criteria in which to classify their samples (Wade et al., 2006), and many studies in fact do not include male samples (mainly because the numbers of diagnosed male individuals are small).

Taken together, the ever increasing incidence rates of anorexia nervosa within the female adolescent population highlight the need for further research into the disorder within the population that is not only the most at risk, but the most affected.

Cultural and Social Class Profiles of Anorexic Populations

Anorexia nervosa is a condition with a relatively long history. However, it was not until 1694 that this self-imposed condition of starvation was recognised as a medical condition (Morton, 1694). Since these early reports of anorexia nervosa, the
profile of the disorder has changed with the ever-changing attitudes of society and culture. Many theorists have argued that the societal norms and values that we are immersed in every day have played a major contributory role in the incidence of eating disorders in our population (Wildes et al., 2001; Lindberg & Hjern, 2003). It is argued that the increasing incidence of eating disorders in the female population (particularly within the adolescent population) and the characteristic cognitions associated with anorexia nervosa, mirror the cultural value that is placed on physical appearance and thinness (Keel & Klump, 2003; Treasure, 1997).

Generally, psychiatric disorders cluster within lower socioeconomic classes (van Hoeken, Seidell, & Hoek, 2003), however, research has indicated that eating disorders predominantly exist in the middle to upper classes of western cultures where food is abundant and thinness is valued (APA, 2000; Garfinkel & Garner, 1982; Walsh & Devlin, 1998). In support of this notion, Attie and Brooks-Gunn (1989) showed that there was an inverse relationship between weight and social class, suggesting that those of higher socio-economic status were more likely to have lower body weights and more likely to restrict their eating. Furthermore, Lindberg and Hjern (2003) argued that demographic factors such as ethnicity and social economic status were amongst the most prominent risk factors for anorexia nervosa, with an overrepresentation of anorexia nervosa in white-collar families.

However, Bryant-Waugh and Lask (1995) suggested that in countries such as Africa, Asia, China, and the Caribbean, cases of eating disorders were unheard of until just recently. Walsh and Devlin (1998) stipulated that the lower incidence of eating disorders in non-white populations can be attributed to cross-cultural differences in ideal body image, greater weight tolerance, and less body dissatisfaction amongst ethnic groups in comparison to non-ethnic, Caucasian
populations (see also Crago, Shisslak, & Estes, 1996). Many investigations of body image satisfaction have demonstrated that there is a significantly higher degree of body image dissatisfaction amongst individuals that have a different cultural background. In support of this, a meta-analysis conducted by Wildes et al. (2001), demonstrated that overall, Caucasian women living in a Westernised culture experienced greater eating disturbance and body dissatisfaction than non-white women. Furthermore, in body image literature, it has been shown that African-Americans have significantly lower levels of dissatisfaction because their ideal shape is larger and more attainable than the Caucasian ideal (Rucker & Cash, 1992). However, although ethnicity has been cited as a protective factor, its protective nature has become somewhat limited as research has shown that the incidence of eating disorders and eating disorder symptomatology is on the increase for non-Caucasian women (see also Robin et al., 1998) and further, that the adoption of westernised ideals becomes more and more widespread (Polivy & Herman, 2002).

In a review conducted by Keel and Klump (2003) it was argued that although there is a suggestion that eating disorders, particularly anorexia nervosa, are culturally bound disorders, there is evidence to suggest that the disorder exists in every non-western culture in the world, including the United Arab Emirates, African, and South East Asian countries. Weiss (1995) also reported that disturbed eating patterns are ubiquitous among a broad range of socio-economic and ethnic groups, and that the presence of eating disorders amongst these minority groups would continue to increase. Results indicated that Asian women, like their Caucasian counterparts, seemed particularly prone to eating disorder symptomatology. This result demonstrated that contrary to common beliefs, eating disorders seem to appear equally in both Caucasian and ethnic populations around the world. Other authors
(e.g. Gard & Freeman, 1996; McClelland & Crisp, 2001) have acknowledged that very little is known about the incidence of the disorder in non-western and non-western populations and that there is no conclusive evidence that eating disorders do not exist in these cultures. Further, it is argued that current research results need to be interpreted with a level of caution, as there is some bias associated with data collection, sample sizes, and the pattern of referrals within the various socio-economic classes.

In summary, although researchers have suggested that ethnicity and socio-economic status can be protective factors, more recent research has cast some doubt over these conclusions, demonstrating that anorexia nervosa exists in countries and populations that were once said to be ‘protected’. Hence, it seems that the profile of patients with anorexia nervosa is continuously changing with the development of countries and the increased influence of westernised cultures on ethnic cultures.

**Course and Outcome in Anorexia Nervosa**

Anorexia nervosa is a very serious disorder that is plagued by both physical and psychological complications. Various studies have shown that prognosis for individuals diagnosed with anorexia nervosa is poor, with mortality rates said to exceed any other psychiatric disorder (Gowers, Weetman, Shore, Hossain, & Elvins 2000; Herzog, Fiehn, & Petzold, 1997). To highlight the seriousness and chronicity of the disorders, estimates of mortality have been reported as ranging from 0 to 22%, with the most common cause of death being due to complications associated with starvation or suicide (Lowe et al., 2001). Authors have also claimed that over a third of patients will experience and suffer from recurring affective disorders and a high proportion of chronic patients will attempt suicide (Steiner & Lock, 1998).
In 2000, Gowers et al. estimated that only half of the younger patients diagnosed with anorexia nervosa in their study would actually make a full recovery from the disorder, whilst those that survived would still present with varying degrees of eating disordered symptoms and behaviours. Lowe et al. (2001) reported similar results, finding that only fifty one percent of patients were fully recovered after twenty-one years and twenty one percent of the patients though still possessing some eating disordered symptoms, had partially recovered. However, ten percent of the patients studied, had not recovered or even improved, still meeting the full diagnostic criteria for anorexia nervosa. Astoundingly, it was reported that 16.7 percent of participants studied had died from causes associated with anorexia after twenty-one years.

To further illustrate the severity of the disorder, Polivy and Herman (2002) reported that after five years, and long after the initial treatment for an eating disorder, some patients still exhibited some eating disordered symptoms, suggesting that even after five years, many patients had still not reached a point at which they could be classified as fully recovered. Additionally, Eckert et al. (1995) reported that after 10 years, 51% percent of patients had good outcomes, and 31% had intermediate outcomes. Eleven percent of the sample were shown to have poor outcomes. Eckert et al. also reported that an alarming 7% of the patients that were followed during the 10 year period had died. In a similar longitudinal study, Herzog et al. (1997) indicated that after 12 years, 12% of patients with anorexia nervosa died, 14% of participating patients were classified as having a poor outcome, 27% had intermediate outcomes. Only 47% of the patients were classified as having good outcomes.

Unfortunately, prognosis figures at 20 years after diagnosis are not any better. Authors (e.g. Ratnasuriya, Eisler, Szmukler, & Russell, 1991) have reported that after
20 years, only 32% of patients are rated as having good outcomes. Twenty nine percent of patients were shown to have intermediate outcomes, whilst 22% of the patients that were followed were shown to have poor outcomes. A staggering 15% of the patients died within the 20 year follow up period.

It is clear from these reports that anorexia nervosa can cause severe and fatal medical complications (Pomeroy, 1996). It is a complex disorder that is associated with very high mortality rates, and very low and inconsistent recovery rates. This is perhaps a reflection of the lack of clarity that exists within the field with regard to various treatment models and how effective they may be.

**Aetiology/ Risk Factors of Anorexia Nervosa**

In attempts to gain a better understanding of anorexia nervosa, researchers have typically adopted the bio-psychosocial model to explain the numerous factors associated with anorexia nervosa. Adopting this particular model allows researchers to organise the many factors into categories of biology, which may include factors such as genetics; neuroendocrine dysfunction; and neurotransmitter dysfunctions (White, 2000); psychology including personal affect, personality, cognitive, and social factors, and media influences. A brief summary of the literature and research investigating such factors follows.

**Biological Factors**

Although research into biological factors have not been as common as psychological research in recent years, the role of biological and physiological factors in the onset and development of anorexia nervosa has attracted some attention (Polivy & Herman, 2002). Nevertheless, researchers have been somewhat cautious in emphasising biological factors as causal factors as it is hard to distinguish the direction of causality. Further, the biological-environmental interaction effect remains
unclear; hence, although appealing, researchers have not been able to establish whether biological factors can/cannot be independently considered as causal factors for anorexia nervosa and other eating disorders (Winchester & Collier, 2001).

**Genetics: Twin, Family, and Molecular Genetics Studies**

It has been suggested that genetics may be able to explain a level of vulnerability and predisposition for eating disorders (Winchester & Collier, 2003; Wren & Lask, 1993). Amongst some of the more common methods used to investigate the biological factors associated with the onset and transmission of anorexia nervosa, researchers have conducted family studies and twin studies (Winchester & Collier, 2003). Amongst some of the limitations associated with such studies is that unless the study uses twins that were separated at birth and hence did not share the same environmental factors, the study may be simultaneously investigating environmental and genetic factors.

In 1990, Strober et al. indicated that anorexia nervosa clustered within families, and that first degree relatives of patients with anorexia nervosa were eight times more likely to develop anorexia nervosa compared to individuals from the general population. In a more recent case control family study, Strober et al. (2000) demonstrated that the female relatives of anorexia nervosa patients were 11.4 times more at risk of developing anorexia nervosa than the female relatives of controls.

Further, in support of the relevance of genetics in anorexia nervosa, studies have shown that the concordance rates for monozygotic twins are approximately 56%, whilst for dizygotic twins it is only 5% (Holland, Sicotte, & Treasure, 1988), which lends support to the notion that genetics in fact have a significant role in the aetiology of anorexia nervosa. However, the rates of concordance are said to vary widely. For example, in a recent review, Jacobi, Hayward, de Zwann, Kraemer, and Agras (2004)
indicated that the contribution of genetic factors for anorexia nervosa was between 58% and 88%. Jacobi and colleagues however noted that the number of studies within the area was small, and because the results have been somewhat inconsistent, there is no conclusive evidence for the contribution of genetics to the onset and development of anorexia nervosa. Therefore, although genetic studies have shed some light on genetic susceptibility and inheritance, there is a large degree of variability that remains unexplained and thus environmental and psychological factors cannot be excluded.

**Neurobiology**

In neurobiological studies, investigators have attempted to determine whether various neurotransmitter systems play a major role in the development of various symptoms for anorexia nervosa. Specifically, investigations have indicated that serotonin (neurotransmitter) functioning and levels are associated with various symptoms for anorexia nervosa. Serotonin for example, has been found to have a role in the control of appetite (Blundell, 1991), anxiety and depression (de Zwann, 2001) and abnormal serotonin activity is characteristic of patients with anorexia nervosa (Jacobi et al., 2004). More specifically, studies have found that anorexic patients have significantly less serotonin metabolite in their cerebrospinal fluid in comparison to normal controls, which tends to increase to normal levels when their weight has been restored (De Zwann, 2003). Although abnormal levels may persist after short-term weight gain (Frank et al., 2001), studies have shown that increased levels of serotonin are common in long-term weight restored patients (Kaye et al., 1991). A limitation of this research however, has been that investigators have not been able to establish whether abnormal serotonin activity is a precursor or result of anorexia nervosa and
associated disturbed eating behaviours (De Zwann, 2003; Jacobi et al., 2004; Polivy & Herman, 2002).

_Socio-cultural Factors: Media, Peers, and Parents_

Socio-cultural factors have long been recognised as some of the most potent factors that affect the development and maintenance of eating disorders. Most reviews of risk factors in eating disorders identify that socio-cultural factors include media, cultural, peer, and parental influences (see for example, Ghaderi, 2001; Stice, 2002; White, 2000; Yates, 1989). These reviews have maintained that socio-cultural factors have increased the pressure to be thin, and can be associated with the ever increasing level of body dissatisfaction and disturbed eating behaviours and attitudes in the population (e.g. Ghaderi, 2001; Stice, 2002).

Research has indicated that the ideal and preferred boy shape is now thinner and more tubular than in previous decades (Wiseman, Gray, Mosimann, & Ahrens, 1992; Yates, 1989) and these images have been portrayed in both print and television media (Sypeck, Gray, & Ahrens, 2004). This decrease in the ideal ironically, has occurred despite the fact that the average woman is substantially larger than the average woman was several decades ago (Spitzer, Henderson, & Zivian, 1999; Tiggemann & Slater, 2004). As a result, for the majority of the population, the ideal body shape is unrealistic and biologically impossible to attain (Ackard & Peterson, 2001; Steiner & Ryst, 1995; Wren & Lask, 1993).

Although many authors have highlighted that there are many mediums in which the thin-ideal can be portrayed to the population (through peers and through family interactions), media can be one of the most powerful and damaging vehicles in which the ideals are relayed to the public, hence increasing the likelihood that the ideals are internalised (Polivy & Herman, 2004; Thompson, Coovert, & Stormer,
A substantial body of literature has suggested that the frequency with which the thin ideal is portrayed in the media and the repetition of these images and messages, have acted to increase social acceptance of the thinner ideal (hence increasing the pressure to be thinner), and also has had a major role in the increase in the level of body image dissatisfaction experienced by girls and women alike (Stice, 2002; Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2004). Furthermore, the emphasis that has been placed on thinness has encouraged and increased acceptance of dieting to lose weight and attain the preferred ideal (Treasure, 1997; Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2004).

There are many reports within eating disorders research, feminist literature, and body image research that have argued that the increased pressure to be thinner and the growing preoccupation with physical appearance and slimness, promotes disturbances in eating behaviour, attitudes, and body image (Polivy & Herman, 2002; Stice, 2001). For example, it has been suggested that individuals believe that success can be attributed to thinness and attractiveness (Kjaerbye-Thygesen, Munk, Ottesen, & Kruger-Kjaer, 2004; Tiggemann, 2002), whilst being overweight is often associated with having a lack of control and an inability to take care of oneself (Yates, 1989). Even children have been shown to internalise the value of thinness; Johnson and Connors (1987) demonstrated that children associate being overweight with social isolation, particularly for girls (see also Flechter, Eltze, & Lehmkuhl, 1995).

In a review of the socio-cultural pressure to be thin and the internalisation of the thin ideal, Stice (2002) demonstrated that perceived pressure to be thin was directly related to increased levels of body dissatisfaction, dieting activity, and negative affect. Stice further emphasised that the internalisation of the ideal significantly predicts increases in some eating disorder characteristics and the
maintenance of eating disordered symptoms (particularly bulimia nervosa). Although this review has highlighted the importance of perceived pressures to be thin and the internalisation of the thin ideal, the research reviewed focused on bulimia or general eating disorder pathology and has not highlighted the specific associations with anorexia and specific anorexic symptoms, it is thought the same internalisation processes may be evident within populations with anorexia nervosa.

Other empirical studies have also emphasised the role of television and magazines in increasing levels of drive for thinness, body dissatisfaction, and the internalisation of the thin ideal (e.g. Hargreaves & Tiggemann, 2004; Pinhas, Toner, Ali, Garfinkel, & Stuckless, 1999; Yamamiya et al., 2004). For example, Durkin and Paxton (2002) investigated the effect of exposure to the thin ideal in the media, in adolescent girls. Participants were adolescent high school girls recruited from single and co-educational schools in Australia. Results of their study indicated that after controlling for initial body satisfaction levels, girls who were exposed to thin fashion models had significantly higher dissatisfaction and depression as compared to girls who were exposed to accessory adverts. This effect was also found to be more pronounced in older girls, suggesting an increased level of vulnerability to media and exposure to the thin ideal in adolescent girls.

Pinhas and colleagues (1999) investigated the effect of exposure to media images on women’s body image and mood states and found that as predicted by the socio-cultural model, women tended to be angrier and in negative mood states after being exposed to the thin ideal. Furthermore, the results indicated that women were more likely to judge themselves more negatively in terms of their body image than they had prior to being exposed to the thin ideal. These results suggest that even brief exposure to images of the thin-ideal could negatively impact both mood and body
dissatisfaction. Pinhas et al. (1999) also found that those who exhibited eating disorder characteristics (interpersonal distrust and increased levels of ineffectiveness and body dissatisfaction) were more vulnerable to the effects of media exposure (see also Hausenblas, Janelle, Gardner, & Focht, 2004).

However, most studies have investigated the short-term effect of exposure to the media, hence causal links for long-term effects cannot be established. In an attempt to address this issue, Hargreaves and Tiggemann (2003) conducted a longitudinal study to investigate the effects of repeated exposure to thin ideals through the media. Their results indicated that those girls who had been most affected by the images at age 15 years, showed the highest body image dissatisfaction and drive for thinness when they were followed up two years later. Although this study did indicate that repeated exposure can negatively affect body satisfaction levels in girls, other important factors were not ruled out as having an effect on follow up outcomes.

Despite some consistency in the results for the effect of thin-ideal exposure through media on body image dissatisfaction, authors (e.g. Polivy & Herman, 2004; Hargreaves & Tiggemann, 2003; Yamamiya et al., 2004) have argued that there may be other factors that need to be considered, which may mediate or moderate the association between media exposure and dissatisfaction. Do all individuals respond to media exposure in the same way? Why is it that some people become more dissatisfied with their body following exposure to media images, whereas others are not negatively affected?

Hargreaves and Tiggemann (2004) investigated the effect of exposure to idealised media images in adolescent boys and girls. Results of their study suggested that exposure to thin ideal models increased body image dissatisfaction in adolescent girls, although the same effect was not found for adolescent boys. Furthermore,
results provided evidence to suggest that both adolescent girls and boys who invested highly in appearance were more likely to engage in social comparison processes when exposed to appearance-related media. Again, the effect was stronger for girls than it was for boys within the adolescent developmental period. It seems then, that an important mediating factor is the importance that individuals place on physical appearance in the first place—if individual’s schemas are not centred on appearance, exposure to idealised images may not have such a negative effect, and hence although it seems easy to blame the media for increased body dissatisfaction, other mediating factors also need to be examined to better understand the relation. Furthermore, evaluations of the body can vary, depending on the various contexts and interactions that the individual is involved in (Tiggemann, 2001).

Haworth-Hoeppner (2000) (see also: Thompson, Heinberg, Altabe, & Tabtleff-Dunn, 1999) contend that the influence of society and culture in the production of body image dissatisfaction and thus in the development of eating disorders, is mediated by peers and the family, who may transmit cultural messages about the importance of thinness and beauty. Moreover, researchers have suggested that peer influences and peer pressure are often associated with eating disorder psychopathology (increased levels of body dissatisfaction, drive for thinness and eating disordered behaviours such as food restriction, purging, and laxatives), as adolescents may learn and adhere to expectations and beliefs in an attempt to increase their sense of belongingness with their peers (e.g. Dohnt & Tiggemann, 2005; Levine et al., 1994; O’Dea, 1999; Paxton, Schutz, Wertheim, & Muir, 1999; Polivy & Herman, 2002; Stice, Maxfield, & Wells, 2003). For example, O’Dea (1999) found that adolescents’ bodyweight was an important aspect of their perception of social
acceptance. Individuals who saw themselves as overweight indicated that they were less socially acceptable.

Further illustrating the influence of peers on body dissatisfaction and the internalisation of the thin ideal, Wertheim, Paxton, Schutz, and Muir (1999) showed that one of the most potent forms of peer pressure experienced by adolescent girls with regard to their bodies occurs when one of their thin peers expresses her dissatisfaction with her weight and body shape. Wertheim et al. (1999) suggested that this interaction indirectly forces peers to evaluate themselves in the light of their peers. In cases in which this interaction is an upward social comparison, negative body image, self-esteem, and affect could result. Other authors have also found evidence to suggest that peer pressures are insidious vehicles in which the thin ideal can be communicated and reinforced (e.g. Schur, Sanders, & Steiner, 2000; Stice et al., 2003; Striegel-Moore, Silberstein, & Rodin, 1986).

Polivy and Herman highlight that research presents contradictory findings about the relative importance of the media, peer, or familial influences on eating disorder psychopathology. For instance there is evidence that peer influences are more important (e.g. Stice, 1998), but there is also evidence that suggests that family influences and expectations have a larger influence on the internalisation of the thinner ideal (e.g. Wertheim et al., 1997). Moreover, authors have cautioned researchers and policy makers to be aware that not all peer groups are equally concerned with the body and physical attractiveness (Dohnt & Tiggemann, 2005; Paxton, 1999).

In investigations of the roles of family and parents on body dissatisfaction, disturbed eating attitudes and behaviours, and the communication and reinforcement of the thin ideal, it has been argued that children may model their parents’ behaviours,
emphasis on appearance, and direct comments regarding food consumption and weight (see for example Lowes & Tiggemann, 2003; Smolak, Levine, & Schermer, 1999).

It is clear from this brief review that there has been extensive research into the socio-cultural effects of the media, peers, and parents on the thin ideal, and the internalisation of that thin ideal. The mass media, parent, and peer interactions can be seen as potent vehicles for the reinforcement and communication of the thin ideal, which has been shown to be associated with increased levels of body dissatisfaction, dieting (food restriction and disturbed eating behaviours), and negative affect. Given that body dissatisfaction and dieting have both been strongly associated with eating disorders, it is important for policy makers to ensure that they consider these socio-cultural factors in their models for treatment and prevention. However, although socio-cultural factors have been linked to eating disorders, most of the studies in the existing body of literature have not been able to establish causality and hence preventative models need to also concentrate on other factors that have been associated with the development of anorexia nervosa.

**Individual and Psychological Factors**

Many studies have investigated the individual psychological factors that are associated with the onset and maintenance of eating disorders. Of these psychological factors, researchers have identified personality, age, self-concept, and body image as risk factors for anorexia nervosa. However, the models of aetiology for anorexia nervosa and other eating disorders are complex, and the development and maintenance of anorexia nervosa is likely to be an interaction between a number of these psychological, socio-cultural, and biological factors. It is thus important that clear understandings of how these individual factors are related to others and anorexia
nervosa is imperative. A brief review of some of the literature regarding these psychological factors follows.

**Personality**

It has been suggested that particular personality characteristics are more common in eating disorders and are more likely to influence the development of such eating disorders. For example, Strober (1980; 1985) claimed that although there is no specific personality type associated with anorexia nervosa, certain personality traits are more common in patients with anorexia nervosa. As such, researchers have identified that various relations exist between symptomatology and self-report measures of perfectionism, obsessive-compulsive behaviours, control, and autonomy (see Cassin & von Ranson, 2005 for a review).

Perfectionism is a personality trait that has been consistently highlighted in academic reviews and research as a risk factor for anorexia nervosa (e.g. Polivy & Herman, 2002; Stice, 2001; Stice, 2002; Wonderlich, Lilienfield, Riso, Engel, & Mitchell, 2005; Yates, 1989). In clinical literature, Bruch (1973) highlighted that perfectionism may explain and promote patients’ endless drive for thinness through strict restriction regimes. In highlighting perfectionism as an important risk factor, other authors have demonstrated that perfectionism significantly predicts the increase and maintenance of eating disorder psychopathology (Leon, Fulkerson, Perry, Keel, & Klump, 1999. See also, Stice, 2002). Stice (2002) acknowledges however, that despite being significant, the effect size for this interaction was small for the prediction of increasing pathology and medium for the maintenance of pathology. This result suggests that perfectionism, although a common characteristic of patients, may in fact have more of a role in maintaining disturbed eating behaviours than be a factor that is involved in the development of pathology. Stice’s findings, however, have limited
generalisability as the studies that were reviewed focused mainly on bulimic patients and general eating disorder pathology rather than on specific pathologies related to anorexia nervosa.

With specific reference to anorexia nervosa, some studies have indicated that patients with anorexia nervosa consistently score higher than controls for perfectionism (e.g. Bastiani, Rao, Weltzin, & Kaye, 1995). Polivy and Herman (2002) further emphasised that high levels of perfectionism in anorexia nervosa remain despite the restoration of weight, hence suggesting that perfectionism may be considered as a predisposing characteristic, or a characteristic that may be related to the resistance to treatment or the frequency of relapses experienced (Franco-Paredes, Macilla-Diaz, Vazques-Arevalo, Lopez-Aguilar, & Alverez-Rayon, 2005). Not all research results have been consistent, with some authors finding that there is no difference between clinical and non-clinical populations for perfectionism (see Franco-Paredes et al., 2005 for review). However, this inconsistency in results could be a result of the variety of instruments that have been used to assess perfectionism.

Other characteristics consistently cited as risk factors for anorexia nervosa include obsessive thoughts and behaviours, rigidity, and social insecurity. For these characteristics research has been unable to establish the causal ordering between these factors and anorexia nervosa. For example, although obsessive-compulsive characteristics are common in patients with anorexia nervosa, particularly with regard to their food intake and their exercise routines (Polivy & Herman, 2002), authors have often cited that anorexia nervosa and obsessive-compulsive disorders are co-morbid conditions (see Godart, Flament, Perdereau, & Jeammet, 2002 for a review); hence, is it the obsessive characteristics that determine anorexia nervosa, or is it the anorexia nervosa that explains the obsessiveness? Although these factors are not examined in
detail within the current thesis, some attention is paid to perfectionism as a part of eating disorder symptomatology.

**Age, Adolescence, and Puberty**

Given that the most common age of onset for anorexia nervosa is during the adolescent developmental period, authors have argued that puberty, age, and early menarche are risk factors for anorexia nervosa as they are associated with greater body image disturbance and dissatisfaction, and increased awareness and participation in dieting behaviours (see Stice, 2002 for a review; Heinberg, 1996). For example, in a study that examined the effects of puberty on body dissatisfaction, Hermes and Keel (2003) demonstrated that girls who were more physically mature had significantly higher body dissatisfaction and drive for thinness compared to girls who were less physically developed.

Adolescence has been described as a period of emotional turbulence (Mensinger, 2001; Sullivan, Cleary, & Sullivan, 2004) and turmoil (Tiggemann, 2001), and as a period of massive physical and psychological transformations (Weisz & Hawley, 2002; Graber, Brooks-Gunn, Paikoff & Warren, 1994) in which individuals’ sense of self and personality develops and becomes defined. This period of transition involves often rapid and unexpected changes and challenges in social interactions and groups, in social roles and in responsibilities; it is a period in which the self is defined through the social interactions that are experienced (Graber & Brooks-Gunn, 1996; Sullivan, Cleary, & Sullivan, 2004). With newly developed cognitive abilities to think abstractly and to self-reflect, adolescence is a developmental period that involves the accommodation of physical changes (as society seems to favour the body shape of pre-pubertal girls), the loosening of familial
ties leading to the movement towards psychological autonomy, and the development of cohesive and stable personality and self-esteem structures (Arnett, 2004).

Recent literature has highlighted that some aspects of the self are more important and valued more than others, and that these perceptions can change throughout the lifespan. For adolescents, researchers suggest that physical identities and physical appearance play a major role in how adolescents perceive themselves and their roles within social relationships (Arnett, 2004; Sullivan et al., 2004; Phelps, Sapia, Nathanson, & Nelson, 2000). Amongst an array of issues that adolescents have to deal with during this period of development, research has indicated that adolescence is an important developmental period for the emergence of body dissatisfaction, dieting, and eating problems (Lieberman, Gauvin, Bukowski & White, 2001), suggesting that the onset of puberty is a possible trigger for the onset of eating disorders and body dissatisfaction (Attie & Brooks-Gunn, 1989; Kelly, Ricciardelli, & Clarke, 1999; Stice, 2002). Furthermore, researchers have argued that in response to the changes that occur to the body (particularly for girls), individuals may begin to rate their body more negatively, and begin to become more aware of the socio-cultural pressures to be thin and learn about what dieting is and how to do it (Stice, 2002). Furthermore, with increased contact with peers, adolescents become more vulnerable to teasing and bullying, which can also enhance body dissatisfaction and low self-esteem (Heinberg, 1996).

Although many authors have examined body image, self-esteem, self-concept, and eating disorder behaviours in various age groups, very little research has investigated whether the effects of age vary in anorexia nervosa, and particularly whether symptomatology changes as a function of age. This is particularly relevant as much of the empirical research into anorexia nervosa has been conducted with adult
populations and hence, more is understood about adult aetiology than about adolescent and child aetiology. Hence, given the importance of research within the adolescent developmental period, the current study attempts to address the lack of anorexia nervosa research with adolescents.

**Body Image and Body Dissatisfaction**

Eating disorders research has emphasised the negative impact that body image dissatisfaction could have on both physical health and psychological well-being (e.g. Lowes & Tiggemann, 2003). Body dissatisfaction has been found to be closely associated with negative self-esteem (Ghaderi, 2001; Sheffield, Tse, & Sofronoff, 2005; Ricciardelli & McCabe, 2001; Smolak & Levine, 2001), disturbed eating attitudes, eating behaviours, and maladaptive methods to control weight and eating (Griffiths et al., 2000; Hermes & Keel, 2003; Sheffield et al., 2005; Stice, 2002; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Body image is amongst an array of identified factors that have an important role in the development and maintenance of anorexia nervosa and other eating disorders (e.g. APA, 2004; Ghaderi, 2001; Polivy & Herman, 2002; Stein & Corte, 2003; Stice, 2002; Yates, 1989) and is emphasised as one of the most robust and consistent precursors and risk factors for eating disorders (Ghaderi, 2001).

Numerous studies have found that a large proportion of women and adolescents want to be thinner than they actually are and that there is a level of normative discontent amongst females, regardless of age (Kostanksi, Fisher, & Gullone, 2004). In an assessment of body image dissatisfaction across the lifespan, Stevens and Tiggemann (1998) demonstrated that generally, ideal ratings of body image for women were significantly thinner than their ratings of what they actually looked like (see also Tiggemann, 1992).
In adolescent research, it has been consistently demonstrated that girls have high levels of body image dissatisfaction; judging their current body shapes as significantly larger than what they would ideally like to look like (e.g. Adams, Katz, Beauchamp, Choen, & Zavis, 1993; Baranowski, Jorga, Djordjevic, Marinkovic, & Hetherington, 2003; Tiggemann & Wilson-Barrett, 1998). Hausenblas, Downs, Fleming, and Connaughton (2001) for example, investigated body image in middle school students and found that half of the girls in the sample had indicated that their ideal body shape was significantly thinner than their current shapes. These results were further supported by a recent study in which adolescent girls were shown to be motivated to have a thin body image and motivated to lose weight, regardless of whether they were within the normal weight ranges or underweight (Beaudoin, Ste-Marie, Bottamini, & Parent, 2005).

Recent research has also indicated that body image disturbance is evident in children as young as eight years of age (Schur, Sanders, & Steiner, 2000). Using a body figure rating scale, in which the participants were asked to indicate their current and ideal body shapes, it was found that over 50% of girls wanted to lose weight, whilst 41.9% wanted to be thinner than what they currently were. Furthermore, researchers have shown that even children as young as five years would like to be thinner than they are currently (Tiggemann & Lowes, 2002; Williamson & Delin, 2001) and are aware of the types of methods that can be used to lose weight or maintain a low body weight (Dohnt & Tiggemann, 2005; Tiggemann & Lowes, 2002). A limitation of these studies however has been the small sample sizes that have been employed to investigate the phenomenon; hence as Smolak (2004) highlights, some of these results can be somewhat misleading.

*Body Image and Development*
The focus of many studies has recently moved to investigating the changes in body dissatisfaction throughout the lifespan, and researchers have highlighted the need to investigate the developmental fluctuations that may occur with respect to body image and body dissatisfaction. However, most of the research investigating developmental change has investigated the changes that occur during adulthood (e.g. Tiggemann, 2004; Tiggemann & Lynch, 2001; Webster & Tiggemann, 2003). For example, recent research has shown that this discrepancy between the actual and ideal ratings for body image remains relatively stable across the adulthood (Tiggemann, 2004; Tiggemann & Lynch, 2001; Webster & Tiggemann, 2003), irrespective of other demographic characteristics such as occupation, marital status, and level of education (Stevens & Tiggemann, 1998). Hence, research has neglected to investigate the possible fluctuations that might occur during adolescence. For example, like self-esteem and self-concept, does body dissatisfaction fluctuate between the ages of 12 and 18? Lowe and Tiggemann (2003) demonstrated that in children there is a developmental progression of body dissatisfaction, recognition, and internalisation of the thin ideal. More specifically, they found that although girls between the ages of 6 and 8 years expressed a desire to be thinner, there was no significant difference between the actual and ideal body images for 5 year old girls. This result not only highlights that there is a need to developmentally assess body image dissatisfaction, but also emphasises that although research findings have generally pointed to dissatisfaction across all ages, it is important to determine whether there are any specific ages in which there are fluctuations in body image and body dissatisfaction. The current research addresses the effects of age to some extent by examining the linear impact of age on eating disorder symptomatology in adolescent girls.
Given the prevalence of body dissatisfaction, researchers have attempted to investigate and develop models to assess why it is that some individuals go on to develop anorexia nervosa and other eating disorders, but others (the majority of the population) do not. Central to this has been the investigation of how body image, eating disorders, and eating disorder symptomatology are related. In non-clinical samples, researchers have found that dissatisfaction with body shape and desire to be thinner can result in frequent and maladaptive dieting, mainly through food restriction and weight loss/management methods, such as the use of laxatives, self-induced vomiting and exercise (e.g. Attie & Brooks-Gunn, 1989; Barker & Galambos, 2003; McVey, Pepler, Davis, Flett, & Abdolell, 2002; Wilksch & Wade, 2004). The relation between body dissatisfaction and the development of disturbed eating behaviours and eating disorders has been demonstrated in several longitudinal studies. For example, Attie and Brooks-Gunn (1989) demonstrated that for adolescents prior (Time 1) body dissatisfaction was a significant predictor of subsequent eating disturbance. Their results hence showed that body dissatisfaction preceded the development of maladaptive and disturbed eating behaviours (see also Cattarin & Thompson, 1994; Killen, Taylor, Haydel, Wilson, Hammer, Kraemer, Blair-Greiner, & Strachowski, 1996). Furthermore, in a sample of college women, Striegel-Moore, Silberstein, Frensch, and Rodin (1989) found that disordered eating was associated with body dissatisfaction and lower feelings of attractiveness.

The DSM and ICD recognise that individuals with anorexia nervosa can be differentiated from non-clinical individuals on the basis of not only their weight, but also the concern with and overvaluation of thinness and body image (APA, 2000; see also Rieger, Touyz, Swain, & Beumont, 2001). For example, many studies have established that individuals with eating disorders (particularly anorexia nervosa and
bulimia nervosa) are dissatisfied with their body shape, and often think that they are fat (e.g. Beumont, Russell, & Touyz, 1995; Cash & Deagle, 1997). As such, researchers have attempted to investigate the differences that exist between clinical and non-clinical samples in terms of body image, and have further attempted to use body image to differentiate between subtypes of eating disorders.

Within the empirical research, body image is a global construct (Thompson et al., 1999) that has been conceptualised as individuals’ perceptions and evaluations of their body shape and their physical appearance. However, Thompson et al. (1999) have argued that the concept of body image is not useful unless researchers and clinicians clarify which aspect of the body image that they are addressing. Hence, some authors have argued that body image is multidimensional and involves both perceptual aspects and affective and attitudinal components (see Cash & Deagle, 1997; Ghaderi, 2001; Sepulveda, Botella, & Leon, 2002). As such there are two different bodies of research in body image and eating disorders literature: one which focuses on the perceptual distortions that exist in eating disordered populations, one which concentrates more on the cognitive representations and affective components of body image and body image dissatisfaction in various populations, including eating disordered populations. However, despite the plethora of research, there is still little consensus as to where distortions actually exist for eating disordered individuals, and hence more research is required to explore the various aspects and dimensions of body image.

Although some authors have highlighted that anorexia nervosa patients have distorted perceptions of what they look like and overestimate their body size (Smeets, Smit, Panhuysen, & Ingleby, 1998), results examining the perceptual distortions of eating disordered patients have revealed inconsistent results (Flechtner, Eltze, &
Lehmkuhl, 1995; Sepulveda et al., 2002). Whereas some authors have indicated that patients with anorexia nervosa overestimate their body size (e.g. Slade & Russell, 1973), others have determined that both clinical and non-clinical populations overestimate their body size and hence demonstrating that body image distortion is indeed a defining characteristic of anorexia nervosa (e.g. Ben-Tovim & Crisp, 1984; Henninghausen, Enkelman, Wewetzer, & Remschmidt, 1999). Further, in their meta-analysis, Cash and Deagle (1997) found that there was no reliable difference between eating disordered samples (see also Fernandez-Aranada, Dahme, & Meermann, 1999) and normative samples with regard to size estimation. In a more recent study of body image distortion, Probst, Vandereycken, Coppelolle, and Pieters (1998) showed that the majority of restricting anorexic patients did not have a distorted perception of their bodies; the patients knew what they looked like, but did not want to change the way that they looked, despite being underweight and emaciated. Ten percent of the anorexic participants even underestimated the size and shape of their bodies, thinking that they were thinner than what they were. These results thus raise questions regarding whether body image distortion actually exists in eating disordered patients as compared to normative samples, or whether there is a normative level of inaccuracy in size estimation. Furthermore, it raises questions regarding whether body distortion should remain within the diagnostic criteria for anorexia nervosa and other eating disorders.

Some reviewers have argued that the reason for such inconsistencies in the results regarding perceptual distortion for eating disordered populations is not only a lack of consensus regarding the best assessment measure, but also a consequence of a lack of clarity on the definitions of body image (e.g. Cash & Deagle, 1997; Flechtner,
Eltze, & Lehmkuhl, 1995). Furthermore, research using clinical samples has been limited in that most have had very small sample sizes (see Flechtner et al., 1995).

A method of body image assessment that has grown in popularity (mainly due to the ease of administration) is the attitudinal and affective component of body image. This type of method not only allows researchers to investigate individuals’ preferences for body shape, but also allows researchers to explore respondents’ thoughts of their current body shape (Cash & Deagle, 1997). In exploring the attitudinal aspect of body image, authors have employed a variety of assessment measures including body figure rating scales, also known as the silhouette matching task (in which participants can rate their actual and ideal body shapes), and scales in which respondents indicate their level of satisfaction with certain aspects of their appearance. According to a recent review these methods have yielded more consistent results (Sepulveda, 2002). Samples with anorexia nervosa have been shown to rate themselves consistently more negatively than non-clinical samples, and furthermore researchers have been able to more clearly discriminate between clinical groups (bulimia nervosa versus anorexia nervosa) in terms of body image.

In a meta-analysis of 66 studies, Cash and Deagle (1997) contend that anorexia nervosa sufferers are more dissatisfied with their body shapes compared to normative samples, and furthermore, that bulimic samples were shown to have consistently higher body dissatisfaction compared to anorexia nervosa. The meta-analysis results also indicated that self-ideal discrepancies that can be measured using attitudinal measures generated larger effect sizes in comparison to traditional perceptual methods such as video distortion methods. Cash and Deagle (1997) highlighted the similarities in the larger effect sizes for body dissatisfaction methods and self-ideal discrepancies, explaining that body dissatisfaction can be explained by
the discrepancy between actual and ideal ratings of the body. Cash and Deagle (1997) explained that based on Higgins’ (1987) theory of self-discrepancy theory, a discrepancy between actual and ideal ratings can result in a feeling of dissatisfaction in both clinical and non-clinical populations. Furthermore, the magnitude of the discrepancy can explain the magnitude of the dissatisfaction that is felt by an individual (the self-discrepancy theory applied to body image is a central focus of this thesis, and is discussed further within the self-concept section of this literature review).

Looking at ratings of actual and ideal body shapes independently, researchers (e.g. Williamson, Cubic, & Gleaves, 1993) have also indicated that anorexia nervosa populations rate themselves as larger than control groups (though populations of bulimic patients were shown to rate themselves as even larger than these groups) independently of BMI differences. It is difficult to determine however whether these results are a reflection and indication of attitudinal body image disturbance or indicative of perceptual distortion.

In summary, although research has clearly indicated that body image is a risk factor and common characteristic of anorexia nervosa and other eating disordered populations. Although body image dissatisfaction also exists within non-clinical samples, the magnitude of dissatisfaction can predict eating disorder pathology. In the assessment of clinical samples, more traditional methods in which authors have attempted to establish body distortion have yielded inconsistent and inconclusive results, raising questions about whether there is actually any perceptual distortion. Attitudinal methods on the other hand have been much more successful in determining whether there is a difference between eating disordered populations and non-clinical populations in terms of body image.
Empirical researchers need to acknowledge that there are several components to body image and that these components may differentially affect the development of self-esteem and eating disorders. Furthermore, it needs to be recognised that there are various instruments that are available to measure body image and body image disturbance, each of which has its advantages and disadvantages. Hence, as a result of the confusion that exists in the research, it is imperative that appropriate screening and assessment instruments are selected and utilised to establish the associations between body image and eating disorders. Given the importance of body image in eating disorders, both as a factor associated with onset and one that is associated with maintenance, it is vital that a clearer understanding of the relation between body image, self-esteem, self-concept, and eating disorders be established. In the following section previous research pertaining to self-esteem, self-concept, and eating disorders is discussed. Specifically, the theoretical underpinnings of various self-concept models will be discussed, followed by a review and discussion of how the self-concept is associated with eating disorders and body image.

**The Relation of Self-concept, Self-esteem, and Eating Disorders**

*Background*

Since early writings about the manifestation and aetiology of eating disorders, theorists have argued that a deficit in self-concept is a diagnostic feature of the illness (Bruch, 1973). Furthermore, recent depictions of patients with eating disorders have included a negative sense of self as a core component of eating disorders (APA, 2000). Hence, researchers and clinicians alike have emphasised feelings of ineffectiveness, low self-concepts, and self-esteem as common characteristics of anorexic populations. The role of the self in the development and maintenance of anorexia has however been contentious as findings have not been consistent, and as a
result, researchers have explored the risk factors for the onset and maintenance of eating disorders, highlighting the importance of self-esteem and self-concept in understanding eating disorders (e.g. Ghaderi, 2001; Polivy & Herman, 2002; Stein & Corte, 2003; Stice, 2001; White, 2000). A current limitation in the research however is that little research in the field has differentiated between self-esteem and self-concept, and how these constructs may differentially relate to anorexia nervosa.

Although many psychological disciplines have highlighted the significance of both self-esteem and self-concept, there is a variety of theoretical approaches that underpin both of these constructs and the instruments used to evaluate them. Since self-esteem and self-concept in relation to anorexia nervosa are central themes for investigation in this thesis a detailed description and review of the self-esteem and self-concept theory and literature follows. Links between eating disorder research, mental health perspectives, and self-concept theory will be drawn, and existing limitations within the body of literature will be highlighted in light of the theoretical foundations of the self-concept, and hence self-concept as a psychological risk factor will be discussed.

The Significance of the Self-concept Construct

The construct of self-concept has a long and much-debated history in social science and humanities (Hattie, 1992; Byrne, 1996). As research continues to expand in psychology, education, and mental health, the significance and importance of a positive self-concept throughout the lifespan is undeniable (Byrne, 1996). The self-concept can be defined as cognitive evaluations that people may have about themselves, their thoughts, their beliefs and their attitudes about the social world, and interactions in which they are involved (Hattie, 1992). It is a construct that is thought
to underpin not only our current behaviours but also our future aspirations (Hattie, 1992; Ha, 2002).

The importance of positive self-concept stems from the principle that high self-concept is related to positive outcomes and development, and that it is not only a very valued and desired outcome but also an important mediating factor that can influence various behavioural, psychological, and health outcomes (Harter, 1990; Coopersmith, 1967; Byrne & Shavelson, 1996; Marsh & Craven, 1997; Shavelson, Hubner, & Stanton, 1976; Guillon, Crocq, & Bailey, 2003; Fox, 2000). For example, a low self-concept is often associated with behavioural problems, delinquency, depression (Branden, 1994), anxiety (Baumeister, 1993), and suicide ideology (Cuhadaroglu & Cetin, 2001) throughout the lifespan. Furthermore, low self-concepts have been associated with the development and maintenance of eating disorders such as anorexia nervosa, bulimia nervosa, and other unspecified eating disorders (Polivy & Herman, 1999). High self-concept on the other hand, has been cited as a protective factor against the effects of bullying, teasing, and chronic mental illnesses. As Branden (1994) attests:

I cannot think of a single psychological problem from anxiety to depression, under-achievement at school or work, to fear of intimacy, happiness or success, to alcohol or drug abuse, to spouse battering or child molestation, to co-dependency and sexual disorders, to passivity and chronic aimlessness, to suicide and crimes of violence- that is not traceable, at least in part, to the problem of deficient self-esteem (p. xv)

Hence, despite confusion within research concerning the structure of the construct of self-concept, there is international recognition of the importance of
positive self-concept. Consequently, practitioners and policy makers around the world have attempted to develop thorough and effective programs to enhance self-concept and to further develop therapy models that address self-concept (Newns, Bell, & Thomas, 2003; Rogers, 1951).

The importance of self-concept has led to a plethora of research pertaining to its development, structure, and the components that make up the self-concept. There are two primary approaches that have been widely recognised in psychological literature; the first is the unidimensional approach (which focuses on global measures of the self such as self-esteem), and the second is the multidimensional approach (which emphasises various components of the self; see Marsh & Craven, in press; Marsh, Craven, & Martin, in press for an overview).

Despite the frequent use of the multidimensional approach to self-concept research in psychology, very few researchers have adopted this approach within the mental health sector (and especially in eating disorders research), opting instead to utilise the traditional unidimensional perspective. It is hence important to understand the advantages and disadvantages of each of these perspectives in terms of increasing understanding of various phenomena within psychology, mental health, and more specifically eating disorders.

**Self-esteem in Eating Disorders**

Researchers and practitioners throughout history have identified low self-esteem as risk factors for many mental illnesses including depression, anxiety and eating disorders, whereas high self-esteem is seen as protective. For example, Guillen et al. (2003) highlighted that low self-esteem levels were characteristic of clinical inpatients diagnosed with Depressive, Personality, Anxiety, and Psychotic disorders. Furthermore, Guillen et al. (2003) demonstrated that deficits in self-esteem varied
depending on the diagnosis. Although these findings are very important for the advancement of our understanding of mental illness, research has not been consistent in terms of whether self-esteem can distinguish between different clinical samples, and whether it is a characteristic that differentiates clinical from non-clinical populations.

In eating disorders literature, researchers have demonstrated that positive self-esteem can be a protective factor for eating disorders and maladaptive eating behaviours/attitudes (see Crago, Shisslak, & Ruble, 2001). To highlight this, a community study conducted in the United Kingdom showed that school girls aged between 11 and 12 years with low self-esteem were eight times more likely to develop problems associated with eating by mid adolescence (Button, 1990; Button, Loan, Davies, & Sonuga-Barke, 1997; Button, Sonuga-Barke, Davies, & Thompson, 1996). Bardone, Perez, Abramson, and Joiner (2003) proposed that individuals with low self-esteem are more likely to be susceptible to pressures to be thin, and are more likely to engage in dieting behaviour.

There is a plethora of cross-sectional studies that have examined whether patients with anorexia nervosa have lower self-esteem compared to non-eating disordered populations. For example, Button and Warren (2002) and Bardone et al. (2003) found that high levels of self-esteem can act as a buffer for disturbed eating attitudes and behaviours. Silverstone (1990) also demonstrated that patients with an eating disorder had comparatively lower levels of self-esteem (as assessed by the Rosenberg self-esteem scale) than a sample of non-clinical adults. Although this finding supports much of the research in the field, Silverstone did not separate anorexic patients from bulimic patients to assess whether there was a difference in self-esteem based on the type of eating disorder. In addressing this limitation and also
using the Rosenberg self-esteem scale and the Coopersmith self-esteem Inventory, Griffiths, Beumont, Giannakopooulos, Russell, Schotte, Thornton, Touyz, and Varano (1999) also investigated the possible differences in self-esteem for three different groups of eating disordered patients (EDNOS, anorexia nervosa, and bulimia nervosa patients). Griffiths et al. found that there was no evidence to suggest that there is a difference between the three groups of patients, although they all exhibited low levels of self-esteem (see also Williams, Power, Millar, Freeman, Yellowlees, Dowds, Walker, Campsie, MacPherson, & Jackson, 1993).

Jacobi, Paul, de Zwann, Nutzinger, and Dahme (2004) also utilised the Rosenberg self-esteem scale to determine whether patients with eating disorders had lower global self-evaluation scores than normal healthy controls and depressed psychiatric patients. Results indicated that self-esteem, as measured by the Rosenberg scale, could not differentiate between depressed and eating disordered patients. This result suggests that perhaps low global self-esteem cannot be considered as a characteristic that is specific to the eating disordered population, but general clinical populations, thus contradicting other findings.

Self-esteem has also been shown to be an important factor in treatment and outcomes for anorexia nervosa and other eating disorders. For example, a high self-esteem has been associated with better outcomes for patients with eating disorders as shown in the study by Halvorsen and Heyerdahl (2006). They investigated self-esteem and personality in a sample of adolescent onset anorexia nervosa women and attempted to determine whether women of varying outcomes would differ in their level of self-esteem and their personality characteristics. Using the Rosenberg self-esteem scale, the authors demonstrated that self-esteem was significantly higher for patients with better outcome, as compared to patients with poor outcomes (see also
Fairburn, Peveler, Jones, Hope, & Doll, 1993). With the exception of the women who had been shown to have a good outcome, these women displayed normal self-esteem profiles. Women with anorexia nervosa (both present and former patients) were shown to have significantly lower self-esteem compared to a large normative sample of women. Button and Warren (2002) demonstrated even after 7.5 years after the initial presentation of anorexia nervosa, self-esteem levels remained as low as they had been upon first presentation (see also Bell, 2003). Other researchers however, have not found any association between self-esteem and outcomes for eating disordered patients.

The inconsistency in the results of the self-esteem literature presented here is concerning, particularly given that self evaluations are considered core components of anorexia nervosa and other eating disorders. However, much of the research within the eating disorders field does not differentiate between self-concept and self-esteem and has tended to utilise terms such as self-esteem, self-concept, global self-worth, and sense of self interchangeably (Marsh, 1993b; Stein & Corte, 2003). This is perhaps a reason for the inconsistency in results, as there are significant differences between the two constructs. Furthermore, Stein and Corte (2003) argue, much of the research in the field is limited in that the use of the constructs of self-esteem and self-concept has not been grounded in more recent advances in self-concept theory and research (see Marsh & Craven, in press) whereby multidimensional conceptualisations of the self-concept construct are advocated (see later discussion). Given that eating disorder research has not been based on a theoretical foundation or model of the self, it is difficult to determine and understand the true nature of the relations between self-esteem, self-concept, and eating disorders. It is thus imperative that research into self-concept and anorexia nervosa is based on a more solid
theoretical foundation so as to gain a clearer understanding of how best to treat the disorder and to develop models to effectively prevent the disorder. A clear understanding of recent theoretical models of self-esteem and self-concept is required to effectively determine and extrapolate findings in empirical research. Furthermore, an understanding of recent advances in self-concept theory and research allows clinicians, researchers, and program developers to appropriately tailor diagnostic and treatment methods, select screening and assessment tools, and moreover obtain accurate and more in-depth knowledge regarding the relation between self-esteem, self-concept, and eating disorders. In the following sections an overview of theoretical models of the self-concept construct is presented.

**The Unidimensional Model of the Self-concept Construct**

Despite early discussions regarding the possible multidimensional nature of self-concept (see James, 1890/1960), historically, researchers have tended to adopt a unidimensional approach referring to self-concept as a single unitary construct and employing terms such as self-concept, self-esteem, general self-concept, global self-concept, or self-worth, interchangeably. Researchers who have employed this model of self-concept typically represent self-concept as a single score, calculating a mean score or a total score for analysis (Rosenberg, 1979). Proponents of the unidimensional approach also argue that a general measure of the self is adequate to assess how individuals feel about themselves, and how these feelings and evaluations could be related to other constructs such as mental health, achievement, motivation, well-being, and depression (Harter & Marold, 1991). For example, despite recognising the multidimensionality of the self-concept, Rosenberg (1979) suggested that individuals would be unaware of the complexities of the specific domains within
the self, and hence developed a measure that assessed global self-esteem by assessing
general competency, efficacy, acceptance, and worth.

Much of the research that adopts the unidimensional perspective is based on
eyearly self-concept research with children. In 1967, research conducted by
Coopersmith using an instrument that was unable to distinguish between the multiple
dimensions, indicated that children were unable to differentiate between their
evaluations in varying environmental experiences. Based on this research,
Coopersmith (1967) and subsequently Marx and Winnie (1978), argued that self-
concept appeared to be more unitary and singular in structure than a construct with
many variable facets and dimensions. Other researchers have since agreed with this
interpretation and have identified self-concept as the representation of “the totality of
the individual’s thoughts and feelings having reference to himself as object”
(Rosenberg, 1979, p. 7) or the “average tone of self-feeling” (Bracken, 1994, p. 9).

Over the last several decades however, self-concept theorists have challenged
the validity and relative usefulness of this traditional unidimensional model for
evaluating the self-concept. Although they have not discounted the existence of a
general self-concept or self-esteem construct, researchers have argued that a single
global score, as given by the unidimensional approach, does little but mask the
possible differences that may exist in an individual’s self-evaluations in a given
situation by counterbalancing the differences between evaluations within the differing
domains of self-concept (Harter, 1990). Marsh (1988) further argued that the common
use of an overall and unitary score used to assess self-concept may in fact be the
reason that research within the field has been plagued with inconsistent findings with
relation to self-concept and its associations with other constructs. Marsh and Craven
(1997) further argue that:
If the role of self-concept is to better understand the complexity of self in different contexts, to predict a variety of behaviours, to provide outcome measures for diverse interventions, and to relate self-concept to other constructs, then the specific domains of the self-concept are more useful than a general domain (p. 191).

Despite the questions raised about the validity of the unidimensional approach, many researchers have continued with the use of this model, and persisted with using instruments that are only capable of measuring self-concept as a global construct, such as the Coopersmith self-esteem inventory (Coopersmith, 1967, 1984) and the Rosenberg self-esteem scale (Rosenberg, 1965). It is plausible that one of the reasons for the heavy reliance on such measures is the ease with which these instruments can be administered. For example, the Rosenberg self-esteem scale is a ten-item scale that is both easy to administer and readily available to researchers; hence the instrument is both simple and convenient. Although instruments such as the Rosenberg self-esteem scale identify the multiple domains of self-concept, an aggregate score is used. Hence, this scoring approach ignores the complexity of the self and its relations to other outcome measures (Hattie, 1992). Further, Byrne (1996) explains that the reason that much of the research in psychology has continued with the use of the unidimensional model of self-concept is that until recently there has not been a well-researched and validated instrument to measure and assess self-concept in its multidimensional nature (Byrne, 1984; Wylie, 1974, 1989). Hence, historically, in the absence of the availability of a psychometrically sound instrument there has been very little support for the multidimensional approach to self-concept in research as until recently psychometrically sound instruments were unavailable to test the multi-dimensional structure of self-concept.
The Multidimensional Model of Self-Concept

Early self-concept theorists such as James (1890/1960) conceptualised the self as a hierarchically structured construct, consisting of the material self (or the body), the social self, the spiritual self (derived from an individual’s understanding of the inner being), and the pure ego. This approach to self-concept however, was largely ignored for half a century (Hattie, 1992). However, prior to the 1980s, as discussed above, research was not successful in providing strong support for the existence of multiple dimensions within the construct of self-concept (Brinthaupt & Lipka, 1992). As a consequence of the poor quality of instruments for the assessment of self-concept and the inconsistencies in research findings when using the unidimensional model, researchers have made efforts to advance models and instruments to understand and evaluate self-concept. Rather than abandoning the construct of global self-esteem, researchers have developed models (which were structurally based on early intelligence models) in which the general measure of global self-esteem is included at the apex of the model and other domains of self-concept are nested below the global measure. Theoretical models have been hypothesised and rigorously tested by the use of Confirmatory Factor Analysis (CFA) in order to elucidate the hierarchical and multidimensional structure of self-concept. These theoretical models have also served as the basis for the development of psychometrically strong instruments to assess multiple dimensions of the self-concept construct. The two main multidimensional models of self-concept are the Shavelson, Hubner, and Stanton model of self-concept (1976) and the Marsh/Shavelson model (1985). Research associated with these models has provided extensive support for the multidimensional nature of the self-concept construct.

The Shavelson, Hubner and Stanton Model of Self-concept (1976)
Shavelson and colleagues (1976) were amongst the first researchers to review research results to develop a theoretically driven model of the multidimensional and hierarchical structure of the self-concept construct, to address the perceived limitations in self-concept research. Shavelson et al. argued that until the field of self-concept research addressed the existing problems concerning definition, assessment, and interpretation of the self-concept construct (within-construct issues), research would continue to be ambiguous and inconsistent, hence limiting the generalisability of results and, inevitably, our understanding of the construct itself.

Shavelson et al. developed a model in which self-concept was construed as organised and structured, evaluative and descriptive, multifaceted and hierarchically arranged. According to this model, components relating to an individual’s behaviour are arranged at the base of the structure, and inferences about the self in specific situations and areas, and assumptions about the self in general, arranged at the apex of the structure. Shavelson et al. hypothesised that the components of the structure become increasingly specific as you move down the structure. More specifically, Shavelson et al. proposed a model in which the general self-concept was positioned at the apex of the self-concept structure.

Shavelson et al. proposed that general self-concept is subdivided into two major components, one being academic self-concept and the other, non-academic self-concept, and that these components were further divided and differentiated. For example, the academic component was further divided into mathematics and reading self-concepts, and the non-academic component was further divided into social, emotional, and physical self-concepts. These lower order components were further differentiated into facets such as relationships with others (for social self-concept), and physical ability and physical appearance (for physical self-concept). Shavelson et
al. argued that self-concept becomes more differentiated with age, and further emphasised that an individual’s evaluation and perception of themselves is based on their own experiences and interpretations of their interactions with others and the environment.

Despite the appeal of the model, at the time of its development there was little empirical evidence to support the model. This was due to the fact that there had not yet been a suitable instrument that could measure and differentiate between the various facets of self-concept and Shavelson et al. had not found an instrument available to adequately assess the model. It was not until the 1980s that Marsh developed a series of instruments called the Self-Description Questionnaires (SDQ; see Marsh, 1988) to assess the dimensions of the self-concept as proposed by Shavelson et al.. The development of these instruments aided the rapid development and advancement in the understanding of the construct. A number of factor analytic studies using these instruments in a variety of populations provided support for the multiple dimensions of the self-concept as proposed by Shavelson et al., and the instruments themselves have become recognised as some of the strongest and psychometrically strong self-concept instruments available (Byrne, 1996). There are a number of SDQ instruments available: the SDQI assesses the self-concepts of preadolescents, the SDQII was developed to assess adolescent self-concepts, and the SDQIII was primarily developed to assess the multiple dimensions of adult self-concepts.

Although the introduction of the SDQ instruments provided some support for the model proposed by Shavelson et al., research results indicated that there were some problems associated with the academic domains (mathematics and reading self-concept). Results from studies using the SDQ instruments showed that there were
near zero correlations between reading and mathematics, thus raising questions about the higher order academic self-concept factor proposed in the Shavelson et al. model.

**The Marsh/Shavelson Model of Self-concept (1985)**

In an attempt to address this shortcoming in the Shavelson et al. (1976) model, in 1985, Marsh and Shavelson argued that the initial model proposed 10 years earlier was perhaps too simple, and that the structure was more complex and differentiated than initially presented. Based on research results, Marsh and Shavelson proposed a model in which the mathematics/academic and verbal/academic self-concepts were separated, due to the almost non-existent correlations between the two factors. Marsh and Shavelson hypothesised that the six non-academic facets of self-concept assessed by the SDQ instruments (physical ability, physical appearance, peer relations, parent relations, emotional stability, and honesty and trustworthiness) would be highly correlated to each other, and the correlations amongst these factors would be more highly correlated than correlations between academic (math, verbal, and general school self-concept) and non-academic dimensions. Further, Marsh and Shavelson proposed that math and verbal self-concepts would be nearly uncorrelated, but both would have strong associations with general school self-concept.

Support for the Marsh and Shavelson model (particularly using the various SDQ instruments) has been strong in both preadolescent and adolescent samples, and hence, the multidimensional model of the self-concept has been accepted in many psychological disciplines, particularly education, sport, and developmental psychology. For example, in developmental psychology, Marsh, Ellis, and Craven (2002) have shown that despite early suggestions, children as young as five years of age can distinguish between the multiple components of self-concept. Further, in one of the first investigations of multidimensional self-concept in mental health, Marsh,
Parada, and Ayotte (2004) argued that employing unidimensional approaches “does not contribute to understanding how multiple dimensions of the self-concept are differentially related to specific components of mental health” (p. 6). To address this, Marsh et al., (2004) conducted a study investigating the relations between the multiple facets of the self-concept as measured by the SDQII and the Youth Health Survey. Their results indicated that, as predicted, various dimensions of the self-concept were differentially related (above and beyond the effects of general self-concept) to various facets of mental health. These results therefore support the multidimensionality of the self-concept construct and also suggest that adopting the Marsh and Shavelson model would enable researchers and clinicians to better understand the effect of self-concept on other important constructs and outcomes.

As a consequence of the advances that have been made with regard to understanding of the multidimensional nature of self-concept researchers have been able to address previous limitations of research by developing more powerful and rigorous research methods and instruments to assess the associations between self-concept and other constructs. Furthermore, amongst the benefits of adopting such an approach is that it does not exclude and neglect the importance of the overall evaluations of the self (self-esteem or global self-concept).

However, despite the obvious advantages of the multidimensional model of self-concept, applied researchers persist with the use of the unidimensional approach to develop enhancement and treatment models. As O’Mara, Marsh, and Craven (2003) report, reliance on the unidimensional approach perhaps explains the disappointing results of self-esteem enhancement methods as, when intervention programs focus on specific domains of self-concept most logically related to the intervention and utilise psychometrically sound multidimensional measurement
instruments to evaluate the effectiveness of interventions, effect sizes are generally larger.

The advantages of adopting a multidimensional model of self-concept, particularly in a field such as mental health are obvious, especially as mental illnesses and the treatment methods associated with them are multifactorial in nature. However, despite having accepted the multidimensionality of mental health, researchers within the field are yet to recognize the benefits of adopting the more descriptive multidimensional approach to assessing self-concept (Marsh et al., 2004). As Marsh et al. (2004) argue:

> on the basis of the advances that have been made in other fields of psychology through the adoption of the multidimensional approach to self-concept … it is counterproductive to ignore this important approach to the self-concept in mental health research (p. 29).

The results from previous research in other fields of psychology suggest that application of the multidimensional model of self-concept may enable researchers to examine whether specific domains of self-concept differentiate sufferers of various psychiatric illnesses such as anorexia nervosa and non-clinical samples. Furthermore, scrutiny of specific domains of self-concept may allow clinicians and researchers to distinguish differences in specific domains of self-concept for different clinical samples. As Marsh et al. (2004) emphasise, global and general measures of self-concept do little to benefit our understanding of the differential relations between the self and symptomatology that may exist.

Despite the abundance of research in the eating disorders field, only a limited number of studies have accounted for the multidimensionality of the self-concept construct. Swift, Bushnell, Hanson, and Logemann (1986) recognised that evaluations
of the self involved measuring different components of self-concept such as the self in relation to social behaviours, and the self in relation to emotional tone, body image, and attitudes using two different self-concept measures (the Offer Self-Image Questionnaire which assesses various components of self-concept, and the Structural Analysis of Social Behavior instrument, which assesses social behaviours and self-concept). The results of this study indicated that adolescent girls with anorexia had mixed self-concept profiles and that deficits within self-concept were not global. More specifically, Swift and colleagues found that girls with anorexia had good adjustment in areas such as education, but poor adjustment in social, body, and emotional related areas. These results suggest that girls with anorexia nervosa have different perceptions of themselves in relation to different areas of their lives. More recently, Bardone et al. (2003) adopted a model of self-esteem in which self-esteem was a bidimensional construct comprising self-liking (self-worth) and self-competence (efficacy; see Tafarodi & Swann, 1995). In supporting the bidimensional nature of self-esteem in eating disorders, Bardone et al. (2003) found that self-competence could predict change in bulimic symptoms in patients with eating disorders, whereas self-worth could not. These results indicated that self-liking and self competence were distinct constructs measured by the Rosenberg Self-esteem scale. Although this study provides researchers and clinicians with some good headway for further development and understanding of treatment and diagnosis models for bulimia nervosa in young adults, the model has not been used to evaluate adolescent girls with anorexia nervosa and is limited in that the bidimensional model of self-esteem is comprised of two constructs that are both global measures and thus are not domain specific, and therefore do not fully account for the multidimensional model of the self-concept construct.
In addition, McFarlane, McCabe, Jarry, Olmstead, and Polivy (2001) examined the differential relations between shape and weight concerns and various dimensions of self-esteem (weight-related appearance, weight-related social, and weight-related performance domains). Their results indicated that both restrained eaters and eating disordered individuals had higher levels of weight-related self-concepts in comparison to unrestrained eaters. Additionally, the results provided evidence to suggest that the eating disordered sample (unlike the restrained and unrestrained eaters) extended their weight-related self-evaluations to more domains of what they termed self-esteem. Taken together, the results from this limited pool of research demonstrate the potent potential of accounting for the multidimensional nature of the self-concept construct to elucidate understandings of the relation of self-concept to eating disorders, and thereby advance our understanding of eating disorder illnesses and further inform intervention with tangible research-based solutions.

In summary, although researchers and clinicians have identified negative self-concept and low self-esteem as core components of anorexia nervosa and key factors for the development and maintenance of anorexia nervosa, much of the research in the field has employed a unidimensional approach to self-concept. As a result, very little is known about the specific domains of self-concept in relation to eating disorder symptomatology and furthermore, it remains unclear whether there is a difference between individuals with anorexia nervosa and non-clinical individuals in terms of multidimensional domains of self-concept. Finally, capitalising on recent advances in self-concept theory and research whereby self-concept has been demonstrated to be a multidimensional construct has important implications for advancing our understanding of eating disorders, prevention, and treatment. Hence the present research will attempt to adopt this model to assess self-concept in adolescent girls.
Self-Discrepancy Theory

Overview

Consistent with the notion that the self is multi-faceted, many self-concept debates have centred on the existence of multiple selves (Katzko, 2003; Higgins, Bond, Klein, & Strauman, 1986). For example, James (1890/1960) differentiated spiritual and social selves, whereas Rogers (1951) distinguished between ideal selves and actual selves. Following this, other researchers have also proposed models which have included various different subselves (Fox, 2000), potential selves (Schlenker, 1980), possible selves (Markus & Nurius, 1986), and actual, ought and ideal selves (Higgins, 1987).

A favoured model addressing the notion of multiple selves within the field of social psychology is self-discrepancy theory (see Higgins, 1987). Self-discrepancy theory forges a link between the discrepancies between the different selves and emotional and psychological functioning. Based on the initial proposals by James (1890/1969) and Rogers (1961), self-discrepancy theory hypothesizes that there are three different dimensions of the self: the actual self, what one believes that s/he is and what the individual feels are the characteristics that they possess; the ideal self, what you would ideally like to be or the characteristics that you would ideally like to have; and the ought self, what you think that you should be and what characteristics you think that you ought to possess. The ideal and ought selves are known as self-guides, and it is proposed that individuals are driven to possess the characteristics of these ought and ideal selves (Higgins, Bond, Klein, & Strauman, 1986; Higgins, 1987; Strauman, Vookles, Berenstein, Chaiken, & Higgins, 1991; Halliwell & Dittmar, 2006). Moreover, there are two different standpoints that influence the
dimensions of the self and they are an individual’s own views and standards, and significant others’ perceptions and views.

Self-discrepancy theory postulates that self-esteem is a function of the discrepancy between the actual and ideal/ought, and that individuals are motivated to obtain a match between their ‘selves’. Hence, a high self-esteem or evaluation of the self is dependent on low or small discrepancies between what an individual thinks that they are and the standards that they set for themselves (Wylie, 1974; Marsh, Hau, Sung & Yu, 2005), and moreover, discrepancy levels can affect emotional functioning (Rogers, 1961; Allport, 1955; Scott & O’Hara, 1993), dissatisfaction, psychological adjustment, and functioning (Campbell, Assanand, & DiPaula, 2003), and overall comfort with oneself (Higgins et al., 1986). Therefore, much like other cognitive inconsistency theories (e.g. Cognitive dissonance theory), self-discrepancy theory assumes that different types of discrepancies are accompanied by different emotional states and problems (Higgins, 1987).

Empirical research by Higgins et al. (1985) demonstrated that actual ideal discrepancies were associated with feelings of depression and depressive emotions, whilst actual ought discrepancies were shown to be related to feelings of anxiety and agitation. Higgins et al. (1985) asked university students to complete a self-discrepancy questionnaire whereby participants were asked to list up to ten characteristics for each of the different selves (actual, ideal, and ought) and were asked to indicate the relevance and importance of others’ standpoints on their selves (i.e. significant others’ perceptions and the value that they placed on these). Discrepancy scores were calculated on the basis of matches and mismatches between the self states that each of the participants had written. The results of the study indicated that as self-discrepancy theory predicted, various discrepancies were
associated with different emotional discomfort states, for example, the discrepancy between one’s own actual and ideal self was shown to be associated with feelings of dissatisfaction, disappointment, and feelings of ineffectiveness. A discrepancy between one’s own actual and others’ ideal however, was shown to be uniquely associated with feelings of loneliness and feelings of not being able to live up to expectations, and a lack of pride and discrepancies between actual and ought were shown to be correlated to anxiousness and guilt. Higgins (1987) further argued that emotional discomfort as a result of discrepancies was due to two factors: the magnitude of the discrepancy and the cognitive accessibility of the discrepancy.

In a further test of self-discrepancy theory, Scott and O’Hara (1993) examined actual, ideal, and ought selves of clinically depressed and anxious patients, and hypothesised that these participants would present with different patterns of discrepancies as compared to non-clinical samples. Their results however, only showed some support for self-discrepancy theory in that although depressed and anxious patients had higher overall self-discrepancies compared to normal participants, post hoc analyses indicated that anxious and depressed groups did not differ from each other in terms of actual-ideal and actual-ought self-discrepancies. Further, the results indicated that the anxious group did not differ from the normal sample with regard to actual-ought self-discrepancies. Although these results differ to a certain extent from previous research in the area (see Strauman, 1989; 1992), these results suggest that perhaps the self-discrepancy theory may not necessarily be as relevant for anxiety related disorders as it is for depressive disorders and non-clinical populations.

Despite some consistency in results showing that discrepancies have differential relations to emotional states, Marsh (1993; 1999) argued that the critical
test for self-discrepancy theory is whether discrepancies can predict self-esteem and other outcomes better than actual or ideal ratings alone. However, very little research has investigated this aspect of the theory, and reviewers of self-concept research and instruments (for example Hattie, 1992; Marsh, 1993) have found little to no support for this approach, particularly in relation to the prediction of self-esteem. For example, although Harter (1986) demonstrated that discrepancy scores were related to a number of outcome variables, her research did not include an investigation as to whether the discrepancy score had higher predictive and explanatory power than actual and ideal models alone. Hattie (1992) argued that the lack of support for the approach was mainly due to the use of calculated discrepancies, and reasoned that the conceptual difficulty is that ratings and constructions of the actual self already contain information about standards and expectations; hence, calculating the discrepancy between the actual and ideal ratings makes little psychological and conceptual sense. Hattie (1992) also claimed that another problem with calculated discrepancy scores is that the scores tend towards the mean, that is, on a scale, if a person has a low actual rating, the likelihood of their having a higher discrepancy is larger than if their actual rating was high. Further, a discrepancy of the same magnitude for someone with higher actual ratings compared to someone with lower ratings could not psychologically mean the same thing, regardless of the equal magnitude.

In an attempt to address these limitations in the research, some researchers began utilising a perceived discrepancy score in which respondents were asked to indicate what they thought the discrepancy between their selves were (e.g. actual-ideal discrepancy). However, although this method addressed previous shortcomings, other researchers argued that perceived discrepancies may mask the independent effects of actual and ideal ratings alone (see Marsh, 1999). In a reanalysis of existing
discrepancy data, Marsh (1993) demonstrated that actual ratings had higher levels of association with self-esteem than did perceived discrepancy scores, hence raising further questions regarding the usefulness of the perceived discrepancy rating and the discrepancy model as a whole. Therefore, despite the importance of understanding the effects of various selves and the discrepancies between these selves has for emotional and psychological functioning and well-being, research to date has raised more questions than answers, particularly with respect to the independent effect of actual, ideal, and discrepancies on self-esteem and other outcome variables. Further, much of the research has concentrated on college students and adults, and little is known about adolescent selves and the impact of these selves on outcome variables.

*Self-discrepancy Theory and Body Image*

Despite the limitations of previous research pertaining to self-discrepancy theory, further advances have been made, particularly within the field of body image research. Within the body image field, self-discrepancy theory provides a useful framework for understanding the effect of actual, ideal, and discrepancies on self-esteem, multidimensional self-concept facets, and other physical appearance related outcomes. However, despite some relatively recent advances, research capitalising on self-discrepancy theory to explore body image is still scarce, and researchers have recognised the need for more research within the field (Halliwell & Dittmar, 2006).

As highlighted earlier, self-discrepancy theory proposes that discrepancies are causal factors for dissatisfaction, various emotional and psychological states (see Higgins, 1986; Higgins et al., 1987). Hence, in terms of body image, discrepancies can exist between an individual’s perception of what they currently/actually look like, and what they would ideally like to be, and it is suggested that these physical appearance discrepancies can be related to body image dissatisfaction and eating
disorders (Strauman et al., 1991). For example, Strauman et al. (1991) demonstrated that the actual ideal discrepancy was related to body image dissatisfaction, whereas the actual ought discrepancy was not significantly relate to body image or eating disorder symptomatology. Again, however, Strauman and his colleagues did not attempt to investigate the independent effects of actual, ideal, or ought, on body image or any other outcome variable. Given that they did not explore this, it is difficult to determine if in fact, actual, ideal, or ought selves have higher predictive power than the discrepancy itself, and if this is the case, there seems to be little psychological use for the discrepancy score.

Traditionally, when evaluating the self-discrepancy theory and body image, researchers have used paper pencil tests in which participants are asked to respond to various verbal labels. However, continued research in the area has led to the development of alternative methods to assess actual and ideal body image ratings (Thompson, 2004). For example, many researchers have adopted the silhouette matching task (otherwise known as a figure rating scale) in which participants are asked to respond to questions about their actual and ideal body image on a continuum of silhouettes of body shapes (see for example: Marsh, 1999; Marsh & Roche, 1996; Tiggemann, 1992). Most commonly researchers have used a continuum in which there are between 6 and 9 body shapes ranging from very thin to very fat (Wertheim, Paxton, & Tilgner, 2004). However, more recently, authors have extended these continuums to include 12 silhouettes/figures (Marsh, 1999; Marsh et al., 2005; Ha, 2005). Among some of the benefits of adopting silhouette matching tasks, studies investigating the psychometric properties of such silhouette matching instruments have demonstrated that the psychometric properties are acceptable (Altabe & Thompson, 1991). In particular, studies have shown that test-retest reliability
estimates are good for a variety of different subpopulations (Banasiak, Wertheim, Paxton, & Voudouris, 2001; Wertheim, Paxton, & Tilgner, 2004), there are good levels of construct validity (Marsh & Roche, 1996) associated with the instrument, and furthermore, the internal consistency estimates associated with the silhouette matching task are excellent (Marsh, 1999). Researchers have highlighted other benefits of using this particular method for the assessment of body image: that the silhouette matching task avoids the ambiguity associated with verbal Likert scales, and that ratings of actual and ideal ratings are more likely to vary and not correspond to the endpoints of the continuum (Marsh & Roche, 1996; Marsh, 1999; Marsh et al., 2005). An additional advantage of the pictorial scale that is employed in the silhouette matching task is that it is a measure that is suitable for younger participants; it is visual and concrete and hence does not require sophisticated or superior language and verbal skills (Tiggemann & Wilson-Barrett, 1998).

Investigations utilising this method of silhouette matching/figure ratings have yielded more consistent research results and have more consistently been able to highlight the importance of actual and ideal body image ratings, and the discrepancy between these in terms of self-concept (specifically for physical self-concept and global self-esteem). For example, using the Stunkard, Sorenson, and Schulsinger (1983) version of the silhouette matching task Marsh and Roche (1996) found that actual ratings of body shape were highly correlated with Body Mass Index (BMI) and other objective body composition indices, whereas ideal ratings of body image were found to be nearly uncorrelated to objective body fat measures. In terms of the associations between actual and ideal ratings and self-concept, results indicated that the larger the actual, the lower the self-concept. This result supports much of the previous research suggesting that the fatter an individual thinks they are, the lower
their evaluations of themselves (e.g. Tiggemann, 1992). Additionally, Marsh and Roche (1996) indicated that although the associations between ideal and self-concept were not significant, as predicted, the pattern of relations suggested that there was a positive relation between the variables (the larger and less demanding the ideal, the higher the self-concept). Further, in support of self-discrepancy theory, results showed that the actual-ideal discrepancy was more significantly related to self-concept and self-esteem than were independent ratings of actual and ideal body image.

Marsh and Roche (1996) argued that typically, researchers assume that negative discrepancies are associated with low self-esteem (assessment that one is too heavy/large, hence indicating that the individual would like to be larger than they are). However, this is not necessarily the case, as discrepancies can also be positive (i.e. the actual is smaller than the ideal). Marsh and Roche reasoned that the existence of positive discrepancies might be the reason why there has been limited consistency in the association between discrepancies and self-esteem. As it is usually assumed that discrepancies are negative, the effect of the positive discrepancies may be cancelled out by the negative discrepancies in statistical calculations. Marsh and Roche thus postulated that it is likely that a discrepancy in either direction (regardless of whether you think that you are too fat or too thin) should be associated with lower levels of self-esteem. To investigate this, more complicated and sophisticated discrepancy models were investigated. Using multiple regression techniques and a series of models that included various combinations of actual and ideal ratings, they found that discrepancies could explain more variance in self-concept variables as compared to actual and ideal ratings. However, absolute and squared discrepancies performed better in the models than standard discrepancy scores (see Marsh & Roche, 1996; Marsh, 1999; Marsh et al., 2005). This result indicates that regardless of direction,
discrepancies between actual and ideal ratings of body image are negatively associated with self-concept. Despite offering sound support for self-discrepancy theory using the silhouette matching task, there were some limitations to the research. Firstly, Marsh (1999) argued that the 9 silhouette continuum skewed responses as majority of the figures are overweight, and that there were not enough graduations between the figures. Marsh also argued that despite the strength of the multiple regression approach used to examine the self-discrepancy model in the 1996 study, the approach does not enable researchers to account for measurement error. Further, Marsh (1999) argued that temporal and causal ordering of the model cannot be adequately assessed using such techniques.

In extending his research Marsh (1999) included future and potential ratings of body shape as well as actual and ideal ratings. It was hypothesised that these variables would also contribute to the various facets of the multidimensional self-concept beyond actual and ideal ratings. Further, to address his criticism of the Stunkard et al. (1983) continuum of figures, Marsh adapted the figures to include 12 silhouettes within the continuum. To address the issues surrounding measurement error and causal ordering, Marsh evaluated two waves of adolescent data using structural equation modeling techniques. The results of Marsh’s (1999) study indicated that although there was evidence to suggest that future, potential, actual, and ideal ratings were separate and independent constructs, support for the inclusion of the additional constructs in the self-discrepancy model was limited. More specifically, results indicated that models that just had actual and ideal ratings and discrepancies had higher explanatory power than models that included the two additional constructs (potential and future body shape ratings). Furthermore, in accordance with self-discrepancy theory, the findings demonstrated that actual and ideal ratings at Time 1
could predict Time 2 self-concept beyond the effect of prior self-concept (Time 1 self-concept).

In support of the temporal ordering of body image and self-esteem implied in the self-discrepancy theory and Marsh’s (1999) results, Tiggemann (2005) investigated actual, ideal, discrepancies, and self-esteem over two time waves in female high school students. In her analysis, Tiggemann indicated that unlike what is predicted in various etiological models, actual and ideal ratings at Time 1 could significantly predict self-esteem at Time 2. Although the results of this study do provide support for self-discrepancy theory, Tiggermann did not assess whether the discrepancy between actual and ideal could predict self-esteem above and beyond the independent effects of actual and ideal ratings.

More recently, Marsh et al. (2005) investigated self-discrepancy theory using the silhouette matching task in a population of obese and non-obese adolescents in Australia and Hong Kong. Primarily, Marsh et al. were interested in the effect of actual and ideal ratings of body image on various domains of physical self-concept. Using traditional correlational and multiple regression analyses, Marsh et al. demonstrated that, consistently with the predictions of self-discrepancy theory, actual ratings of body image had negative effects of self-concept, ideal ratings had positive effects, and actual-ideal discrepancies (raw and absolute) could predict self-concept better than actual or ideal alone. Interestingly, Marsh et al. showed that the nature of the self-discrepancy model was different for the sample from Hong Kong as compared to the sample from Australia. More specifically, results indicated that raw discrepancy scores were more important for the Australian sample (i.e. a model containing actual and ideal ratings). However, for the sample from Hong Kong, the absolute discrepancy was stronger. This suggests that although being too thin for
Australian adolescents is not important, being too fat is, and negatively affects various domains of the self-concept. For adolescents in Hong Kong however, the results imply that being too heavy or too thin has detrimental effects on self-concept. These results thus highlight the generalisability of the self-discrepancy model across cultures, and also demonstrate the usefulness of the silhouette matching task as an instrument that can adequately assess body image in adolescents.

In summary, despite the emergence of the silhouette matching task as a technique that holds some advantages over traditional verbal instruments for the evaluation of body image, particularly for younger participants, only recently has its popularity increased, particularly for investigating self-discrepancy theory. Researchers who have adopted similar methods within body image research as highlighted earlier (see previous section reviewing body image literature) have consistently shown that girls and women have thinner ideals than males, and have thinner ideal ratings than actual ratings of body image (see Tiggemann, 1992) and that women of all ages have been shown to want to be thinner than they currently are, irrespective of demographic details. Although this research has raised important questions about body image in adolescent girls and children, many of these authors used simple discrepancy scores between actual and ideal body image to determine body dissatisfaction, and very few of the researchers have employed self-discrepancy theory to explain their results. Finally, few researchers have utilised the silhouette matching task methodology and self-discrepancy model in clinical samples of adolescents.

**Self-discrepancy Theory: Application to Eating Disorders and Treatment**

The principles of self-discrepancy theory have rarely been applied to eating disorders and the treatment of eating disorders. However, based on the early work by
Strauman et al. (1991) with eating disorder symptomatology, Wonderlich, Mitchell, Peterson, and Crow (2001) applied self-discrepancy theory to bulimic behaviours and treatment. Wonderlich et al. explained that when applied to bulimia, self-discrepancy theory predicts that patients perceive themselves as falling below their ideal in terms of the characteristics that they would like to possess, hence reflecting a discrepancy between their actual and ideal selves. On the basis of self-discrepancy theory, this perceived discrepancy between the actual and ideal selves leads to negative affect, body dissatisfaction, and body size overestimation. In the case of eating disorders and body image discrepancies, individuals may be motivated to reconcile this discrepancy using maladaptive means such as food restriction, laxative use, and purging. Wonderlich et al. also extended the principles of the self-discrepancy theory to a cognitive model of treatment. In this cognitive model, clinicians are expected to explore the ideals of the patient and the cognitions that are associated with the ideal. The model also proposes that the therapist and patient together explore the actual self and the cognitions associated with the actual. Given that maladaptive eating disordered behaviour and negative overall self evaluation are driven by the discrepancy between the actual and the ideal, the focus of the therapy needs to be on the emotions attached to the discrepancy and the necessity to attain the ideal. As such, the therapist may be able to assist the patient to explore methods which would help them cope with the fear and the emotion attached to the inability to attain the ideal. Hence, if self-discrepancy theory is applicable to anorexia nervosa, particularly in terms of body image, similar cognitive therapy methods can be integrated into existing treatment models, particularly if clinicians can accurately assess and evaluate whether there is a discrepancy between actual and ideal selves. Hence, self-discrepancy theory can not only provide valuable information and insight into
treatment, but also provides a vehicle in which researchers and clinicians can link and explore the constructs of self-concept and body image.

**Body Image and Self-concept: How are they related?**

The association between body image and self-esteem has been emphasised in eating disorders (e.g. APA, 2000; Geller, Johnston, & Masden, 1997), developmental psychology (e.g. Arnett, 2004), and within self-concept literature. According to the multidimensional model of self-concept, evaluations of physical appearance are an integral part of self-concept, and hence strongly associated with global evaluations of the self (self-esteem). As Geller and colleagues (1997) emphasise, concerns about body shape and weight have a significant influence on feelings of self-worth (Geller et al., 1997; Ross & Wade, 2004; Rodin, Silberstein, & Strigel-Moore, 1985; Tiggemann & Stevens, 1999). Not surprisingly then, many researchers investigating body image have investigated the association between body image and self-esteem, and have consistently demonstrated that there is a significant and positive association between body image and self-esteem. For example, in a study investigating weight concerns in older women, Tiggemann and Stevens (1999) found that weight concerns were negatively associated with self-esteem. That is, for women who exhibited higher weight concerns, their level of self-esteem was shown to be lower. Furthermore, Tiggemann (2001) demonstrated that although intelligence and academic achievement were rated by adolescent girls as more important aspects of life compared to slimness, slimness had greater influence on self-esteem than intelligence and academic achievement. These results suggest that physical appearance and body image are very important aspects of the self, particularly during the adolescent period.

Much like the research within the body image and self-esteem field, the findings with regard to the association between self-esteem and body image have not
been consistent. As opposed to the findings of Tiggemann and Stevens (1999) and Tiggemann (2001) for adult populations, Tiggemann and Wilson-Barrett (1998) determined that body dissatisfaction, as calculated by the discrepancy between actual and ideal figure ratings, was not significantly related to self-esteem for girls. Perhaps then, the pattern of relations fluctuates as a function of age. To explore this, Lowes and Tiggemann (2003) suggested that the association between self-esteem and body image may not be stable throughout the lifespan, particularly during the developmental progression from child to adolescent. In support of this assertion, Tiggemann (2004) demonstrated that the importance of physical appearance self-concept diminishes with age. In contrast, Webster and Tiggemann (2003) found evidence to suggest that judgements of the importance of the body remained stable throughout adulthood, as body dissatisfaction did. Their results also indicated that with age, women’s cognitive abilities and strategies in relation to body image changed. In explaining their findings in relation to other research, Webster and Tiggemann argued that women were able to adopt cognitive strategies that allowed them to increase their level of acceptance of their body shapes in an attempt to maintain their self-esteem, despite having high levels of body image dissatisfaction. Hence, although their levels of dissatisfaction may have changed slightly, their cognitive strategies may mask the changes and the effects of those changes on self-concept.

Although these researchers have investigated the direct relationship between self-esteem and body image, other researchers have shown that body dissatisfaction mediates the relation between self-esteem and eating disorder symptomatology (see Ross & Wade, 2004; Wade & Lowes, 2002), and the internalisation of the thin ideal and eating disorder symptomatology. For example, Ross and Wade (2004) examined
self-esteem and weight and shape concerns. Based on previous findings, Ross and Wade proposed that weight and shape concerns would mediate the relation between self-esteem and dietary restraint and uncontrolled eating. The findings indicated that weight and shape concerns, as predicted, mediated the relation between self-esteem and dietary restraint and uncontrolled eating behaviours.

In an examination of the cross cultural relevance of the mediational and causal relation between self-esteem, body dissatisfaction, and eating disorder symptomatology, Sheffield, Tse, and Sofronoff (2005) found that although body dissatisfaction mediated the relation between self-esteem (as measured by the Rosenberg self-esteem scale) and eating disturbance in late adolescent and adult Caucasians, the same mediating relation did not apply to women from Hong Kong. In the Hong Kong sample of women, there was a direct relation between self-esteem and eating disturbance and body dissatisfaction was shown to have an insignificant direct effect and an insignificant effect on the relation between self-esteem and eating disturbance.

Although more sophisticated models have been developed and tested to examine the relation between self-esteem, body image and eating disorders, very few authors have examined whether the association can be better explained by direct paths from self-esteem to eating disorders, or whether body image mediates the relation between the two variables. This however is not uncommon within the mental health sector, as traditionally, research within the mental health sector has focused on direct relations. Recent advances in statistical methods however should see an increase in the complexity of analyses and diagnostic and treatment models for mental illnesses. These studies have provided a solid foundation on which to develop more complex models in eating disorders. However, although researchers have examined eating
disorder symptomatology, they have focused on samples of non-eating disordered university students and adult samples. Hence, it remains unclear as to whether the same models apply to adolescent eating disordered populations. If they do not, then this would have important implications for clinical practice and research.

Summary of Risk Factors

Anorexia nervosa, like many mental illnesses, is recognised as a multifactorial disorder, in which the development and maintenance of the disorder and its symptoms involves a complex interplay of biological, socio-cultural, and individual psychological factors. Amongst the biological risk factors, researchers have identified that there is a level of genetic heritability associated with anorexia nervosa and eating disorder symptomatology. Furthermore, it has been shown that patients with anorexia nervosa have abnormal levels of serotonin, a neurotransmitter that has a role in controlling appetite and mood. In terms of socio-cultural factors, three major factors have been investigated throughout history: the influence of the thin ideal that is portrayed in the media, the influence of parents and peers in the internalisation process. Finally, most of the eating disorders research has focused on individual psychological factors including personality, self-esteem, and body image.

Despite the wealth of research that has been conducted in the area, the complex relations between identified risk factors remain elusive, and as a result researchers continue to investigate and develop new models in attempts to gain a better understanding of anorexia nervosa and the individuals that are affected by it. Of the factors that have been identified, much research has centred on self-esteem and body image, and only a limited number of studies have capitalised on recent developments in self-concept theory and research to account for the multidimensional nature of the self-concept construct. However, as highlighted above, there are
significant gaps and limitations within the body of literature, and questions still remain as to how these factors can explain anorexia nervosa, and how clinical and non-clinical samples differ. Furthermore, as much of this research has highlighted, the eating disorders field has been heavily reliant on the unidimensional approach to the self, examining self-esteem and eating disorders symptomatology and body image. Hence, very little research has investigated how these factors may be related to the multiple dimensions of self-concept. This research thus adopts the multidimensional approach to self-concept and self-discrepancy theory to examine anorexia nervosa and in adolescent girls.

**Patients’ Experiences with Anorexia Nervosa**

Although there has been much written about the factors associated with the development and treatment of eating disorders, very few researchers have had an interest in the experiences of those that have been diagnosed with chronic illnesses such as anorexia nervosa. In health, psychology and medical research, patients often appear as passive participants, and are rarely given a voice. This is particularly the case in eating disorders research (Chan & Ma, 2002a). Examining the experiences of the patients gives them a voice and a vehicle in which they can be informers; informing researchers and clinicians either of the internal psychological and emotional processes that motivate them to recover or the motivation that drives them to develop and maintain the disorder (e.g. Chan & Ma, 2002b). Furthermore it enables patients, clinicians, and researchers alike to construct and explore the support requirements of patients that helped throughout their illness or that they feel could help them.

Recently, researchers have recognised the importance of exploring the experiences of patients (e.g. Chan & Ma, 2002a; Colton & Pistrang, 2004; Halse,
Boughtwood, Clarke, Honey, Kohn, & Madden, 2005; Haworth-Hoeppner, 2000; Hsu, Crisp, & Callender, 1992; World Health Organisation, 1990), suggesting that learning about the experiences of patients throughout the illness trajectory could elucidate important factors associated with treatment engagement or disengagement, development, and recovery. Furthermore, researchers and clinicians alike may be able to learn more about the emotions and the way that patients interpret and understand the disorder that they have been diagnosed with.

In a recent and general investigation into the experiences of patients living with chronic illnesses, Ironside, Scheckel, Wessels, Bailey, Powers, and Seeley (2003) highlighted the need to explore the everyday lived experiences of patients. It was argued that within health research, studies that have investigated chronic illnesses and patients; experiences with their illnesses have generally explored their quality of life or the coping abilities of patients. Although it is recognised that these factors are important in understanding chronic illnesses, these studies have overlooked important aspects of the experience, such as the changes associated with diagnosis, the day to day experience with living with their illness. Therefore the experience of the illness includes the personal reflections of life before the chronic illness, and evaluations of how life has been subsequently affected by the illness (Ohman, Soderberg, & Lundman, 2003). Hence, according to Ohamn et al (2003) the evaluation and exploration of the lived experience should include an investigation of how the illness has changed or altered the day to day living (including participation in extracurricular activities), how the illness has affected the significant social relationships experienced (relationships with parents, siblings and friends). Further, the investigation should include how the illness has affected their perceptions and views of themselves, those around them and their current and future lives. Finally, an exploration of the daily
lived experiences of patients with chronic illnesses should include an investigation of patients’ perspectives and feelings toward the treatment (if they are receiving any) that they are receiving. Hence, the totality of the experience of the patient can be captured and explored.

In eating disorders research, only a handful of studies have investigated the everyday lived experiences of patients. Most of the studies that have acknowledged the importance of understanding patient perspectives however, have focused on treatment and outcomes (e.g. Colton & PISTRANG, 2004; D’ABUNDO & CHALLY, 2004; EIVORS, BUTTON, WARNER, & TURNER, 2003; HALSE et al., 2005; MILOS, SPINDLER, BUDDERBERG, & RUGGERO, 2004) and have focused on the adult experience of eating disorders (e.g. CHAN & MA, 2002a; 2002b), despite the fact that eating disorders are more common in adolescent populations. Further, a smaller proportion of studies have explored the patients’ views on the causes of and recovery from anorexia nervosa (e.g. HSU et al., 1992; TOZZI, SULLIVAN, FEAR, McKENZIE, & BULIK, 2003; RORTY, YAGER, ROSSOTTO, 1993). For example, Chan and Ma (2002a) explored the experiences of two women with anorexia nervosa. The two patients described their experiences through several months of email communication with the authors, and highlighted some of their thoughts and feelings as they experienced their treatment, and the familial relationships in which they were immersed. Amongst some of the themes of the emails, the patients expressed their eating experiences in terms of their family functioning—one person’s constant comparison with the eating patterns of her younger sister, and the others’ feelings toward eating with her parents and the support she required for the recovery process. Although this study does not examine the totality of experience and is relatively brief, it does highlight the importance of
understanding the perspectives of the patient in attempting to understand factors that are associated with maintenance behaviours.

*Causes and Meaning of Anorexia Nervosa: The Patient Perspective*

There is a significant gap in the literature exploring the meanings associated with anorexia nervosa, and patient perspectives of the onset and development of the disorder. However, understanding the meaning that is attached to food restriction and food refusal may offer some insight into why some patients are often difficult to treat, and further, why they persist with the disorder despite the knowledge of the health consequences. Chan and Ma (2002b) examined the meaning of food refusal in a 40 year old case study who had suffered from anorexia nervosa for 6 years. The aim of the study was to illustrate and gain some understanding of the rationale for food refusal in this case. Using qualitative techniques, Chan and Ma’s (2002b) analysis of data obtained in therapy sessions with the patient and her family revealed two main themes that were used to explain the maintenance of anorexia nervosa; the first was food restriction as a method in which the patient could discipline her body, and the second was food refusal as an avenue to punish the family. These findings were discussed in light of the cultural influences and expectations of daughters in Chinese families. Hence, although the results of the study cannot be generalised, as it is only one case, it does provide researchers with some insight into the personal constructions of anorexia nervosa. Furthermore, it highlights the importance of examining the constructions of anorexia nervosa in an attempt to understand eating disordered behaviours that an individual possesses and exhibits. Furthermore, clinicians and researchers can gain further insight into the factors that may cause and maintain the disorder.
Tozzi et al. (2003) also found evidence to suggest that family issues were often identified as causal factors for eating disorders by patients, regardless of whether they had recovered or not. In their study, Tozzi and colleagues interviewed 69 women who had a history of eating disorders, and investigated patients’ perceptions of the causal factors and the factors associated with recovery. The most frequently cited causal factor was found to be family dysfunction; patients suggested that poor child-parent relationships, familial tension and lack of familial care were all factors that had a role in the onset of the disorder. Other major causal factors included weight loss and dieting that got out of hand, issues concerning life stress and pressures, and the development of anorexia nervosa in response to teasing and other inappropriate comments that had been made in social interactions. This study also provides important information regarding some of the meaning that is attached to eating disorders and the behaviours associated with it. For example, in 1999, Serpell, Treasure, Teasedale, and Sullivan conducted a study in which a small sample of adult patients with anorexia nervosa wrote about their anorexia nervosa as a friend and as an enemy. The respondents demonstrated that they constructed the disorder in a number of different ways, and could think of the disorder in both a positive and negative light. Analysis of the data indicated that anorexia nervosa could be seen as a mechanism that protected them and allowed them to have a sense of control over their lives. Ironically, although patients indicated that the anorexia gave them a sense of control, they also indicated that the anorexia nervosa took over their emotions and behaviours. As this study highlights, examining patient perspectives on the meanings of their anorexia nervosa and their anorexia nervosa behaviours, may act to inform researchers and clinicians of the maladaptive cognitions and assumptions that motivate them to maintain the disorder. Further, examining the negative aspects of the
disorder may also elucidate the factors that can be focused on in therapy in order to encourage the patient to overcome the disorder. These studies highlight the importance of examining the experiences and constructions formulated by patients with a chronic illness such as anorexia nervosa. However, a limitation in the current studies is that researchers have largely examined anorexia nervosa in adult patients, and adults who have recovered from anorexia nervosa. Although this is informative, the cognitions and assumptions associated with adolescent anorexia nervosa may be very different, and may have different implications for treatment and aetiology models for adolescents.

In a rare study that examined the constructions of anorexia nervosa with adolescent patients, Tan, Hope, and Stewart (2003) conducted a study to explore the ethical implications of forced treatment for adolescents with anorexia nervosa, particularly as most patients displayed the capacity to make the decision on their own. Tan et al. argued that treatment in some cases could be seen as unethical, depending on how the disorder was constructed and understood. Therefore, in an attempt to explore the ethics and legal issues associated with treatment for anorexia nervosa, Tan et al. interviewed 10 adolescent girls who had been diagnosed with anorexia nervosa. The interviews revealed that girls constructed and understood their anorexia nervosa in two ways. Some girls evaluated anorexia nervosa as a part of their personal identity. In these cases respondents perceived treatment and the health professionals who administered the treatment, negatively. They felt that treatment was a method that was taking their identity and personality from them. Other girls described their anorexia nervosa as a separate entity, one that inhabited their body and controlled their actions, but one that was not a part of them. These findings have important implications for therapy and treatment (both from a clinician standpoint and from a
legal perspective). That is, for clinicians, depending on how the patient constructs and understands her eating disorder, various treatment methods may be more effective. Furthermore, from a legal perspective, if an individual sees their eating disorder as a part of who they are and are aware of the health dangers that they are faced with, can they really be judged as not being competent to make their own decisions? Can we ethically treat someone if it requires the eradication of their sense of personality and identity? Although the present investigation addresses limitations of previous research, it also raises some very important questions regarding the generalisability of these constructions and also of the legal and ethical dilemmas that health professionals are consistently faced with.

Experiences with Treatment: Patients’ Perspectives

Over the last several decades there has been a focus amongst eating disorders researchers to investigate the effectiveness of treatment for both anorexia nervosa and bulimia nervosa. Although most of these studies have been outcome related (i.e. assessing the amount of improvement or lack thereof associated with various treatment techniques and models), a handful of researchers have explored patient satisfaction with treatment, and patients’ perspectives of helpful and unhelpful forms of treatment (e.g. Bell, 2003; le Grange & Gelman, 1998; Lemberg & May, 1991; Noordenbos, Jacobs, & Hertzberger, 1998). To illustrate some of the findings, Lemberg and May (1991) investigated patients’ perspectives on the helpfulness of various treatment models that they had been exposed to. Lemberg and May utilised survey methods to obtain data regarding patient satisfaction and judgements of helpfulness. Their results indicated that overall, respondents viewed most forms of treatment positively, rating individual therapy and exercise therapy as the most beneficial and satisfactory. These findings need to be interpreted with some caution
however, as the response rate was recorded at 50% and hence it may be the case that those that responded to the survey had more positive experiences with treatment. Furthermore, given the quantitative nature of the survey, it is unknown what characteristics of these treatment methods were the most effective and helpful and why.

In a later study, le Grange and Gelman (1998) interviewed adolescent eating disordered patients in an attempt to investigate the perceptions of various forms of treatment. Le Grange and Gelman examined the effectiveness of family counselling for adolescent patients and individual cognitive behavioural therapy for adult patients. Their findings, much like those of Lemberg and May showed that most patients in either intervention treatment found that treatment was helpful, and that the results for both treatments were very similar. More specifically they identified that the therapy helped them learn coping strategies to assist them in their everyday lives, and helped them become more aware of their feelings. Furthermore, the therapy helped them challenge their dysfunctional beliefs. A smaller portion of patients interviewed by le Grange and Gelman (1998) however, felt that the therapy that they had received did not adequately address the causes of the disorder; instead it was perceived that the therapist concentrated more on the eating aspect of the disorder rather than on the underlying psychological and emotional factors associated with the disorder. This was also highlighted by Bell (2003) in her review of patients’ perspectives. Bell explained that therapy tended to be viewed negatively when the focus of treatment was weight and eating, and did not extend to the patients’ wider psychological functioning (see also Eivors et al., 2003). Bell also highlighted that the studies that have evaluated the efficacy of treatment have found that although perceptions are variable amongst patients, individual and psychological treatment is amongst the most helpful,
particularly because it allows them to develop supportive and empathic relationships
with their therapist.

Control is a theme that is quite common within the aetiology, treatment, and recovery literature. Bell (2003) identified that in some of the studies reviewed, patients had responded more positively to treatment in which they had felt that they had some control and say (see also Colton & Pistrang, 2004). This notion was supported by Eivors et al.’s (2003) findings that the theme of control was central to the understanding to the factors associated with patient drop out. As Tan, Hope, Stewart, and Fitzpatrick (2003) found, some patients consider treatment as the relinquishing of their control over themselves. Hence, when patients have no control or say in their treatment, they tend to feel like they are not in control. Given some choice and some control, Tan et al. (2003) found that patients are more likely to accept treatment and view it in a more positive light.

More recently, Colton and Pistrang (2004) investigated adolescent patients’ experiences with inpatient treatment for anorexia nervosa, and indicated that although the individual experiences vary somewhat, there is a consistency in the themes that are highlighted in their recollection of their overall experiences within the inpatient treatment environment. In this study, 5 main themes were identified by patients when describing their experiences; what anorexia nervosa is, indecision about wanting to get better, social relationships with fellow patients, being able to be treated like an individual, and being able to have some input in the treatment goals. Their results highlighted important factors associated with patient perspectives, particularly regarding their ambivalence towards recovery and getting better. Although this study is important in assisting both researchers and clinicians understand the characteristics and attitudes associated with inpatient treatment, it is unclear whether these results
can be generalised to a wider eating disordered population, given that the sample size for the study was small. Furthermore, all patients were recruited from two inpatient facilities that the authors suggest are very similar in treatment style and nature. It is unclear whether these patients had received treatment from other facilities.

Despite their limitations, the above studies provide valuable insight into aspects of very common treatment methods that are used for eating disorders, and highlight the importance of having a level of understanding of patients’ feelings towards the treatment that they are receiving. As Noordenbos et al. (1998) emphasised, negative experiences with treatment at some stage during the illness trajectory may discourage further help seeking attempts and improvement in their condition.

In summary, although literature pertaining to patients’ perspectives of treatment is slightly more common than that investigating the constructions and causes of anorexia nervosa, the research is still scarce and further research is required to understand the factors associated with motivation to engage or not engage in treatment. Furthermore, investigating the perceptions and experiences of patients may elucidate factors involved in treatment drop out and dissatisfaction.

**Patient Perspectives on Recovery from Anorexia Nervosa**

Much like examining the meanings associated with anorexia nervosa, it is equally as important and informative to examine the meanings and construction of recovery. For example, what factors motivate recovery? What do patients feel that they gain by recovering, and additionally what do they fear they are losing by recovering? These are all questions that have not been investigated in outcome literature, but as patients’ responses to these may indeed structure and drive their motivation to recover or maintain their disorder, they may improve researcher and
clinician understanding of the complex psychological and emotional changes and challenges that patients struggle with. To date, there are very few studies that have explored the experiences and perspectives of patients regarding the processes associated with recovery.

Hsu, Crisp, and Callender (1992) presented six adult cases of women who had recovered from anorexia nervosa. All six patients had been diagnosed with anorexia nervosa during their adolescence, and retrospectively identified factors that they associated with their recovery. Some of the identified factors included treatment within a supportive environment, and personal will power and determination. In this case, the patient had highlighted that she had made a conscious decision to get better and recover from anorexia nervosa. Researchers who subscribe to the transtheoretical model of change, argue that the motivation and determination to change is the basis for successful recovery (see Jordon, Redding, Troop, Treasure, & Serpell, 2003). Other factors that were highlighted included improved relationships with family members, and having the support of partners (Hsu et al., 1992). One reported case also highlighted spirituality and religious faith as an important factor in her decision and motivation to recover. The importance of spirituality and faith was also highlighted in a more recent study by D’Abundo and Chally (2004). In their research, patients who were identified as being recovered, participated in interviews and focus groups to explore their perspectives regarding recovery from eating disorders. The results of the study indicated that one of the major factors that aided recovery for respondents was having supportive relationships with significant others (see also Tozzi et al., 2003). Furthermore, respondents highlighted that to recover, they needed to recognise that they were not defined by their eating disorder. As highlighted earlier, some patients develop an eating disorder as an attempt to develop an identity and
personality of their own, and hence the eating disorder is the core aspect of their identity. In these cases, the patient needs to be able to recognise that their worth is not a function of their eating disorder. Additionally, patients found it easier to recover when they recognised recovery as a continuous process rather than endpoint. This makes it easier for patients to conceptualise recovery, and makes it seem more attainable (see also Lamoureux & Bottorff, 2005).

Although research is limited, the exploration of patients’ perspectives with regard to recovery and the process of recovery may offer the potential to further elucidate factors that can benefit the patient and their decision to recover. Furthermore, it seems that perspectives of recovery are somewhat consistent for adult participants. However, it is unclear whether similar perspectives exist for adolescent patients with anorexia nervosa. This study therefore seeks to explore these factors in adolescent sufferers.

Summary

In sum, given the chronicity of anorexia nervosa as a condition and the lack of clarity in treatment and aetiology models, other methods need to be employed to enable clinicians and researchers to gain a better understanding of the illness, particularly within the adolescent population. The importance of examining the perspectives and experiences of sufferers of chronic illnesses has recently become recognised. However, it is clear that there is a paucity of research investigating the perspectives of patients with regard to their experiences of living with anorexia nervosa. More specifically, although some researchers have investigated various aspects of these experiences, much of the literature has focused on the adult population of sufferers and it is unclear whether the same processes are involved for adolescent sufferers. Given that adolescents are the most affected population, it is
imperative that a better understanding of the disorder is gained, and that their support needs and requirements are drawn from these perspectives and experiences.

**Implications for the Current Study**

This chapter has highlighted significant gaps in the research to date concerning aspects of aetiology and the experiences and support needs of adolescents diagnosed with anorexia nervosa. To date, research has focused mainly on adult sufferers rather than adolescents. Although this has given researchers and clinicians good models to work from, it may not apply directly to the adolescent patient who is facing not only the challenges of puberty and development, but also the challenges of the eating disorder. This review of literature also emphasised the chronicity and complexity of the disorder, by highlighting the high mortality rates and low recovery rates. Treatment and recovery are long and drawn out processes that are fraught with relapses and complications, both emotional and physical. Despite the plethora of research in the field however, researchers emphasise that a clear understanding of the causes and factors involved in recovery remains a mystery.

Although health organisations have attempted to develop detailed guidelines for the diagnosis of anorexia nervosa and other eating disorders, authors have indicated that not all the criteria are applicable to all presenting patients and hence, there are questions that remain regarding the core components of the disorder. For example, researchers have indicated that the fear of fat that typically applies to Caucasian patients does not apply to patients from Hong Kong. Furthermore, the DSM criteria appear to be more applicable to older patients and do not necessarily accommodate the changes that occur during the adolescent developmental period. Despite its limitations, the DSM is designed to be a guide for clinicians and researchers and therefore some professional judgement is appropriate and expected.
when assessing a patient who presents with symptoms of an eating disorder. Much of the literature in the field has used the DSM criteria to determine whether patients are eating disordered or not. However, this process may bias the sample in that, although some patients may not match the criteria set by the DSM they may still be receiving treatment for the disorder and may still have been diagnosed with the eating disorder. Hence, to address this limitation, the current study included a sample of adolescent girls who had received a medical diagnosis of anorexia nervosa (which is guided by the criteria specified in the DSM).

As the literature review has highlighted, research in psychology, medicine, and sociology has identified a myriad of factors that are associated with the onset and development of eating disorders and eating disorder symptomatology. These factors can generally be categorised as biological, socio-cultural, and individual/psychological factors, and have been extensively studied over the last several decades. Many authors in psychology have tended to focus on the socio-cultural and psychological risk factors, and although there has been a plethora of research within the area, a clear understanding of the interplay of factors remains elusive. As core components of anorexia nervosa, self-esteem, self-concept, and body image have been examined as individual and socio-cultural factors. The research to date however is limited in that much of this research has not capitalised on recent advances in self-concept theory and research that indicates that the multidimensionality of the self-concept construct needs to be accounted for in research design, selection of instrumentation, and intervention evaluation. Given the variety of instruments that have been used in the literature, there has been a lack of consistency in the research results, firstly regarding the differences between clinical and non-clinical samples and secondly within clinical samples. Furthermore, although
the mental health sector has recognised the multidimensionality and complexity of mental illnesses, it has not recognised the complexity and multidimensionality of the self-concept and the complexity of the relations between body image, self-evaluations (both global and domain specific), and eating disorder symptomatology in both clinical and non-clinical samples. Hence, to address current gaps in the literature, this study capitalised upon a multidimensional model of the self-concept construct and employed self-discrepancy theory to investigate the complex relations between self evaluations, body image, and anorexia nervosa in both clinical and non-clinical samples.

Finally, researchers have identified that exploring the perspectives of patients and their experiences with their eating disorder can provide important insight into the various cognitions, attitudes, and factors that are associated with the onset, maintenance, and recovery from their illness. Furthermore, exploring the experiences of patients can enlighten both researchers and clinicians about the changes and challenges that patients are faced with during their everyday lives throughout the illness trajectory and illuminate the support needs of patients. Although there has been a handful of research studies into the experiences and perspectives of patients, very few researchers have focused on adolescent patients. Further, most of the studies have been limited by sample size (mainly due to the methods used to obtain data) and hence the generalisability of the results is questionable. The present investigation sought to address some of the limitations of previous research by undertaking in-depth interviews with adolescent patients and completing of an open-ended vignette style questionnaire in which the generalisability of experiences could be ascertained.
Summary

Anorexia nervosa is a chronic and complex disorder that affects a substantial number of adults, adolescents, and children around the world, and despite the recent development of prevention strategies, the incidence and prevalence rates of the disorder continue to increase. Given the complexity of the disorder, researchers are yet to establish a clear model of the psychopathology and risk factors associated with anorexia nervosa and other eating disorders. Furthermore, little is known about the most effective treatment for the disorder, which may be reflective of the lack of clarity regarding risk factors and patient experiences.

The purpose of this chapter was to provide a detailed review of the existing body of literature concerning the risk factors for anorexia nervosa and the experiences of patients with anorexia nervosa. Additionally, this chapter attempted to highlight the existing gaps within the eating disorders literature regarding self-concept, self-esteem, and body image as risk factors and core components of anorexia nervosa in adolescence. The following chapter describes the research aims, questions, and hypotheses for the current investigation in light of the current body of literature.
CHAPTER 3
RESEARCH AIMS, HYPOTHESES, AND RESEARCH QUESTIONS

Introduction

As previously highlighted, anorexia nervosa is a chronic psychiatric disorder that is associated with a number of serious physical and psychological complications. It is one of three eating disorders that have been classified by the DSM, and has been found to affect a significant portion of the world’s population. Traditionally, anorexia nervosa was considered as an illness that affected middle to upper class Caucasian women. However, recent research has demonstrated that the incidence of the disorder is the highest in adolescent girls and that it affects a growing number of children, females and males of all ages, cultural and socio-economic backgrounds.

Previous empirical research has shown that there are a number of biological, socio-cultural and individual factors associated with the development and maintenance of anorexia nervosa. Amongst the factors that have been associated with the development and maintenance of anorexia nervosa, self-esteem, self-concept and body image are often identified and correlated with eating disorder symptomatology. However, despite the abundance of research into these factors, the psychopathology
and aetiology of the disorder remain elusive. In an attempt to address significant gaps in the literature regarding the research into these factors, a series of three studies was specifically developed to investigate the multidimensionality of the self-concept, the self-discrepancy theory of body image and the experiences and support needs of adolescent girls diagnosed with anorexia nervosa (using a newly developed vignette style questionnaire).

The purpose of the present chapter is to present separately for each of the studies within this thesis: (a) the overarching aims of the study, (b) the problem that the study is addressing, (c) the specific hypotheses to be tested, (d) the research questions to be addressed, and (e) the rationale for the hypotheses and research questions. Each of the predictions presented are based on previous theories and research findings. However, as research in the area may be limited, and previous literature and theories may not have provided clear evidence for predictions, research questions have been formulated.

**Study 1: Generalisability of the Multidimensional Model of Self-concept**

*Statement of the Problem*

To date a plethora of research has highlighted the importance of evaluations of the self as a core component of anorexia nervosa. More specifically, researchers and clinicians have argued that patients with eating disorders typically evaluate themselves more negatively in comparison to individuals that do not have eating disorders. There are however several limitations in the existing body of literature. Firstly, research results regarding the differences in self-evaluations between clinical samples and non-clinical samples have not been consistent. Secondly, many researchers have not differentiated between self-esteem and self-concept and have thus typically used the terms interchangeably. The distinction between self-esteem
and self-concept is very important, particularly given that self-esteem and self-concept are theoretically different constructs, and come from two different theoretical approaches. That is, self-esteem is considered a unidimensional and global construct whereas the self-concept is multidimensional in nature. As previously highlighted, although the mental health sector has recognised the multidimensionality of psychiatric illnesses it is yet to recognize the multidimensionality of some of the constructs that are used to differentiate clinical samples from non-clinical samples. Furthermore, some researchers (e.g. Stein & Corte, 2003) have argued that empirical work that has been conducted within the eating disorders field is limited in that it has not been grounded in any theoretical perspective. Additionally, much of the eating disorders literature is characterised by research that has been conducted with adult patients, despite the fact that the incidence of the disorder is highest in adolescent girls. Hence, given these limitations in the literature it is important that more research be conducted to investigate the roles of self-esteem and self-concept in adolescent girls with anorexia nervosa.

**Aim**

The objective of this first study was to address these limitations in the current body of eating disorders and mental health research, by adopting a well established multidimensional model of the self-concept to assess the self-evaluations of adolescent girls with anorexia nervosa and a normative sample of adolescent girls who have not been diagnosed. More specifically, the aim of this study was to assess the generalisability of the multidimensional approach to the self-concept, and to determine how each of the dimensions are related to eating disorders.
**Research Questions, Hypotheses and Rationales**

**Structure and Measurement of the Multidimensional Self-concept**

**Research Questions and Hypotheses**

Hypothesis 1.1.1: The SDQII-S will be a reliable measure of the multiple dimensions of the self-concept for adolescents with anorexia nervosa and the normative, non-clinical sample of adolescent girls. The reliability for the SDQII-S scales for the clinical girls with anorexia nervosa will be comparable to the reliability for the instrument for normative, non-clinical adolescents, and previously published reliability estimates.

Hypothesis 1.1.2: The self-concepts of the total sample (combined clinical and non-clinical sample) and the normative sample will be multidimensional and the responses to the SDQII-S will fit the a priori (11-factor) model consistent with the design of the multidimensional self-concept instrument.

Research Question 1.1.1: Will the self-concepts of adolescents with anorexia nervosa (clinical sample alone) be multidimensional and will the responses to the SDQII fit the a priori (11-factor) model consistent with the design of the multidimensional self-concept instrument?

Research Question 1.1.2: Will the a priori (11-factor) structure of the multidimensional model of the SDQII-S generalise across both the clinical and non-clinical samples of adolescent girls? That is, will the factor structure of the SDQII-S be invariant across the clinical and non-clinical samples of adolescent girls?

**Rationale for Research Questions and Hypotheses**

Rationale for Hypothesis 1.1.1: The multidimensional model of the self-concept has been extensively investigated in adolescents across a wide variety of
contexts using the SDQII-S questionnaire. The original SDQII instrument has been established as one of the most reliable and valid measures of the multiple dimensions of self-concept in adolescents (Byrne, 1996). Hence, as the SDQII-S was developed on the basis of the longer, original version of the instrument, it is expected that the excellent psychometric properties would also apply to this instrument.

Recent investigations into the psychometric properties of the SDQII-S have revealed that the reliability and validity levels are similar to that of the longer version of the questionnaire and well within the recommended levels (see Marsh, Ellis, Parada, Richards, & Heubeck, 2004; Marsh, Tracey, Craven, in review). As a result, it is expected that comparable reliability levels will be obtained in this study, both for the clinical and the non-clinical samples of adolescent girls.

Rationale for Research Questions 1.1.1 and 1.1.2 and Hypotheses 1.1.2: The SDQII-S is an instrument that was designed to assess the multidimensional model of the self-concept in adolescents. Much like the original version of the questionnaire, this shorter version assesses 11 dimensions of the self-concept. Research into the psychometric properties of this shorter version of the SDQII has demonstrated that the factorial structure for the model and questionnaire is generalisable across age, gender and culture (see Marsh et al., 2004), and hence the 11-factor multidimensional model is expected to apply for the total sample and normative sample of adolescent girls.

However, given that the multidimensionality of the self-concept has not been assessed in a clinical population of adolescent girls, it is unclear as to whether the 11-factor structure that applies for non-clinical samples will be generalisable to the eating disordered sample. Hence, a research question addressing the factorial structure of the SDQII-S for the clinical sample was developed.
A focus of many studies particularly in the eating disorders field has been to differentiate between groups using mean scores on instruments such as the SDQII-S. However, until recently very few studies have assessed the factorial invariance of the instrument across various sample groups. The importance of assessing the factorial invariance is obvious, as comparisons between groups cannot be validly made if there is no factorial invariance. That is, unless there is invariance between the groups, there is no evidence to suggest that the instrument is assessing the same constructs in different samples. Hence, given that very few researchers within the mental health field have utilised the SDQII-S, a research question was formulated to determine whether there is factorial invariance for the instrument across the two samples.

1.2 The Structure and Measurement of Eating Disorder Symptomatology

Research Questions and Hypotheses

Hypothesis 1.2.1: The EDI-2 will be a reliable measure of the eating disorders symptomatology for adolescents with anorexia nervosa and the normative, non-clinical sample of adolescent girls. The reliability of the EDI-2 scales for clinical girls with anorexia nervosa will be comparable to the reliability of the instrument for non-clinical adolescents, and previously published reliability estimates.

Hypothesis 1.2.1: The responses from the total sample (combined clinical and non-clinical samples); non-clinical and clinical samples of adolescents (separately) will fit the a priori (11-factor) model consistent with the design of the eating disorder symptomatology instrument as measured by the EDI-2.

Research Question 1.2.3: Will the a priori (11-factor) structure consistent with the design of the EDI-2 instrument generalise across both the clinical and non-clinical
samples of adolescent girls? That is, will the a priori (11-factor) structure of the EDI-2 be structurally invariant across both clinical and non-clinical samples?

**Rationales for Research Questions and Hypotheses**

Rationale for Hypothesis 1.2.1 and 1.2.2: The EDI-2 is an instrument that is commonly used in eating disorders practice and research. Given that it is an established instrument, it was expected that the psychometric properties, specifically the reliability estimates for the scales, would be comparable to previously published estimates. Furthermore, researchers have demonstrated that the 11-factor structure is consistent for adolescents with and without eating disorders. Hence, based on previous research it was proposed that there would be a good fit between the data obtained from each of the samples and the a priori model.

Rationale for Research Question 1.2.1: The focus of many studies in the area that have investigated the effect of group on the various scales of the EDI-2, has been on investigating the mean differences between scores for each of the groups. However, very few researchers have focused on the differences between groups in terms of factor structure, and hence little is known about whether the instrument has equal validity for different samples. On a practical level, equivalence in factorial structure indicates that the instrument assesses the same factors for all sample groups and hence their scores can be validly compared. On the other hand, if factorial invariance is not established, there is no rationale to compare the groups on the scores obtained for that measure. Hence, given the lack of previous research that has been conducted and further given the exploratory nature of the analysis itself, a research question was developed in an attempt to determine whether there is factorial invariance across the two samples of adolescent girls.
1.3 Total Factor Structure and the Relations between Eating Disorders and Self-concept

Research Questions and Hypotheses

Hypothesis 1.3.1: In support of the discriminant validity of factors from each instrument, the patterns of relations between the SDQII-S factors and the EDI-2 factors vary systematically for different factors from each instrument.

Hypothesis 1.3.2: There will be a strong negative relationship between the general self-concept (self-esteem) scores and the severity of their eating disorder symptomatology. This association will be the strongest association between the scales for the two scales.

Hypothesis 1.3.3: There will be a strong negative relationship between the physical appearance self-concept scale of the SDQII-S and body dissatisfaction scale of the EDI-2.

Rationales for Research Questions and Hypotheses

Rationale for Research Question 1.3.1: Researchers within the eating disorders field have consistently associated self-concept and eating disorders symptomatology and although the SDQII-S is an established instrument in development, sports, exercise and educational psychology, it has rarely been used in mental health, alongside mental health measures. However, it is important to determine whether the two questionnaires (the SDQII-S and the EDI-2) are measuring distinct and different constructs. Given the limited research in the area regarding the possible fit of the data to the highly restrictive model, a research question was posed.

Rationale for Hypotheses 1.3.1 to 1.3.3: To provide support for the multidimensionality of the self-concept, results should indicate that there are
differential relations between the SDQII-S and the EDI-2. Based primarily on a previous mental health study (see chapter 2 for more detail) by Marsh et al. (2004), in which the authors demonstrated that the various domains of the self-concept were differentially related to the scales of the Youth Health Survey, it was expected that there would be differential relations between the self-concept factors and the eating disorder scales. In recent research, low self-esteem and eating disorders have been shown to be strongly associated. Hence, it was predicted that there would be a strong negative correlation between self-esteem as measured by the SDQII-S, and scores for eating disorders symptomatology—indicating that low self-esteem is associated with more severe eating disorder symptoms. Furthermore, given that physical appearance self-concept and body dissatisfaction are very similar constructs (Garner, 1991) it is also proposed that these will be highly correlated.

1.4 The Effect of Age, BMI and Diagnosis on Self-concept

Research Questions and Hypotheses

Research Question 1.4.1: In a Multiple Indicator Multiple Indicator Cause (MIMIC) Model, will group (clinical versus non-clinical) have an effect on the multiple dimensions of the self-concept? Subsequently, will the comparison of the self-concept for clinical and non-clinical girls using repeated measures of variance provide results that are comparable to those obtained using the MIMIC model approach?

Hypothesis 1.4.1: Specifically, the results of the MIMIC model will indicate that clinical girls with anorexia nervosa have significantly lower scores on the Physical Appearance scale of the SDQII-S as compared to the non-clinical sample of adolescent girls.
Hypothesis 1.4.2: Specifically, the results of the MIMIC model will indicate that clinical girls with anorexia nervosa have significantly lower scores on the self-esteem scale of the SDQII-S as compared to the non-clinical sample of adolescent girls.

Research Question 1.4.2: Will the effects of group on the multiple dimensions of the self-concept, exist above and beyond the effects of self-esteem?

Research Question 1.4.3: To what extent will BMI impact on the multiple dimensions of self-concept?

Hypothesis 1.4.3: The results will reveal that age has a significant effect on the multiple domains of self-concept.

Rationales for Research Questions and Hypotheses

Rationale for Research Questions and Hypotheses 1.4.1 and 1.4.2: Although the multidimensional model of the self-concept is well established in the literature, the mental health field, and more specifically, the eating disorders field has remained heavily reliant on the unidimensional approach, using the Rosenberg self-esteem scale to assess the self-evaluations of populations.

Many of these previous investigations into self-esteem have shown that patients with anorexia nervosa have lower self-esteem levels than normative non-clinical populations (e.g. Nelson, Hughes, Katz, & Searight, 1999). Therefore, given that the multidimensional approach includes a global measure of self-concept (self-esteem) it is expected that the current research will support previous assertions and thus indicate that girls with anorexia have lower self-esteem scores than non-clinical girls. Furthermore, given that researchers and clinicians have indicated that a core component of eating disorders is poor body image and body image distortion, it is hypothesised that the clinical sample will exhibit lower physical appearance self-
concept than non-clinical samples, thus indicating that they evaluate their physical appearance more negatively than their non-clinical peers. However, given that much of the literature in the field has not utilised this model of the self-concept, it is unclear as to whether there will be any significant effect of group on the other domains of the multidimensional self-concept.

Given that low self-esteem is cited as a factor that is involved in the development and maintenance of eating disorders, and that self-esteem is also a primary factor in the multidimensional model of the self-concept, it is imperative to determine whether the effects of group can be attributed to differences in self-esteem. That is, to determine whether the effects of group can not be better explained by the effects of self-esteem. However, given that no research has been conducted investigating this, a research question was formulated.

Furthermore, to investigate the differences between groups, two methods will be employed, firstly a MIMIC model approach (see Section 1.3), followed by an analysis using repeated measures of variance. As both methods can be used to determine and explore the self-concept profiles of the clinical and non-clinical populations, it is expected that the results will be similar. However, given the advantages of the SEM and MIMIC approaches, particularly in terms of measurement error, there may be some differences in the analysis results. Therefore, because there have not been any investigations regarding this for eating disordered population, a research question was posed.

Rationale for Research Question 1.4.3: BMI is an important variable in eating disorders literature, more so as a diagnostic criterion than a variable of research interest and hence has not been extensively utilised as a predictor variable in research. Given the paucity of research regarding the effects of BMI on self-concept, it is
unclear whether BMI would have a significant effect on the multiple dimensions of the self-concept. Hence, a research question was formulated to determine whether BMI could significantly explain the variance in self-concept.

Rationale for Hypothesis 1.4.3: The effect of age on self-concept has been extensively investigated in developmental and educational fields of psychology (e.g. Marsh, 1989; Marsh, Parker & Barnes, 1985), indicating that during adolescence, as individuals accommodate the changes that occur to their body and their cognitive abilities, their self-concepts change. For example, Marsh et al. (1985) demonstrated that age had significant effects on almost all domains of the self-concept. Therefore, based on these findings, it is predicted that age would have a significant effect on the various domains of self-concept.

1.5 The Effect of Group, Age and BMI on Eating Disorders Symptomatology

Research Questions and Hypotheses

Research Question 1.5.1: To what extent will group (clinical versus non-clinical) have on the various scales measured by the EDI-2?

Research Question 1.5.1: To what extent will age impact on various factors measured by the EDI-2?

Research Question 1.5.2: To what extent will BMI impact the various factors measured by the EDI-2?

Research Question 1.5.3: Do the effects of Group on EDI-2 scores exist above and beyond the effect of self-esteem?

Rationales for Research Questions and Hypotheses

Rationale for Hypothesis 1.5.1: The EDI-2 is an instrument that assesses the presence and absence of eating disorder symptomatology. Given that clinical girls
have been diagnosed with anorexia nervosa, it is expected that they would have scores that indicate that they have higher symptomatology (and hence indicate the significant effect of group).

Rationale for Research Question 1.5.1: As highlighted earlier, eating disorders research has indicated that adolescence is a predictor for eating disorders. However, most researchers have determined this on the basis of evidence that body image issues become more salient during the adolescent period. There has thus been little evidence to suggest that scores on all scales will indicate more severe symptomatology as a result of changes in age and hence, a research question was formulated to determine the direct effect of age on eating disorder symptomatology.

Rationale for Research Question 1.5.2: Although BMI is a diagnostic criterion, very few researchers have examined how individuals’ eating disorder attitudes and behaviours may fluctuate as a function of the weight and height ratios, or whether BMI has an impact at all. It seems intuitively appealing to suggest that BMI have an effect on eating disorder symptomatology, however, given the lack of research in the field, a research question was formulated.

Rationale for Research Question 1.5.4: Self-esteem and eating disorders symptomatology are closely associated. Clinical groups are often found to have lower levels of self-esteem than non-clinical samples, and hence it is not unlikely that self-esteem would have an effect on eating disorders symptomatology, as measured by the EDI-2. Further, given that group was predicted to have a significant effect on eating disorder symptomatology, it is important to determine whether the effects of group (established previously) still exist above and beyond the effects of self-esteem. This analysis will determine whether severity of eating disorder symptomatology in clinical girls is a symptom or result of low levels of self-esteem.
Study 2: Generalisability of the Self-discrepancy Model

Statement of the Problem

Body image is one construct that has long been recognised as one of the core diagnostic criteria for eating disorders, and particularly anorexia nervosa (Bruch, 1973; White, 2000; Polivy & Herman, 2002). However, as in self-esteem research there has been some inconsistency in research results, with some authors suggesting that their eating disordered patients overestimate their body size (e.g. Smeets et al., 1998). Others have indicated that there is no difference in the level of distortion between clinical and non-clinical samples (Henninghausen et al., 1999). Researchers have argued that a reason for the inconsistency in results is the variable instrumentation and assessment measures that are used by researchers and a lack of clear definitions for body image (see Cash & Deagle, 1997).

Given the important and large association between physical appearance evaluations and overall evaluations, it remains unclear why researchers within the field have not investigated the relationship between body image and self-concept using a theoretical approach. One such theoretical approach which offers an avenue to assess body image in relation to self-concept for clinical and non-clinical samples is self-discrepancy theory. Research has shown that the self-discrepancy theory for body image is evident in non-clinical samples; however, it has not been demonstrated in clinical patients with eating disorders.

Aim

The aim of the current study therefore is to investigate actual body image, ideal body image and discrepancies between these ratings of body image for both clinical and non-clinical populations, using a method that has shown much more
consistency for the assessment of body image (the silhouette matching task). Further, to assess the important relation between body image and self-esteem, this study aims to investigate body image in light of the self-discrepancy theory.

Hypotheses, Research Questions and Rationale

2.1 Relations between silhouette matching task variables, BMI, age, group and Self-concept

Research Question 2.1.1: How are actual ratings, ideal ratings, and absolute discrepancies between the actual and ideal ratings related to the multiple dimensions of self-concept?

Rationale for Research Question

Although body image has been associated positively associated with self-esteem, very little research has investigated the independent associations between the actual, ideal, discrepancies and self-concept domains. There have only been two studies that have specifically investigated the silhouette matching task variables and various dimensions of the self-concept. However, these studies only focused on a select few dimensions of the self (as measured by the Physical Self Description Questionnaire). As a result of the limited research in the area, a research question was posed to determine the associations between the silhouette matching task variables and self-concept dimensions (as measured by the SDQII-S).

2.2 The Effects of Group, Age and BMI on Self-concept and Silhouette Matching Task Ratings: MIMIC Model Approach

Research Question 2.2.1: Will group membership (clinical versus non-clinical) have an effect on actual ratings, ideal ratings, discrepancies and self-concept?
Research Question 2.2.2: Will BMI have a significant effect on actual, ideal, discrepancies and self-concept?

Research Question 2.2.3: Will age have a significant effect on actual, ideal, discrepancies and self-concept?

Rationale for Research Questions

Rationale for Research Questions 2.2.1 to 2.2.3: As previously highlighted in chapter 2, researchers have indicated that there are significant differences in body image ratings between populations with anorexia nervosa and normative population samples (e.g. Williamson et al., 1993), indicating that anorexic populations have larger actual ratings than their non-clinical peers. However, research results regarding actual and ideal ratings have been inconsistent and limited for eating disordered patients. While some studies have suggested that there is no difference in the way that patients with anorexia nervosa and non-eating disordered individuals perceive their body shapes, others have found that eating disordered patients in fact underestimate the size of their bodies, rather than overestimating their body shapes. A third body of research has suggested that there is no such perceptual distortion, arguing that affective judgements and attitudes towards body image and body shape are more related to eating disorders. Henninghausen, Enkelmann, Wewetzer and Remschmidt (1999) suggested that although it cannot be said that patients with anorexia nervosa have distorted perceptions of what they actually look like in comparison to non-eating disordered patients, they did find that ideal body image perceptions differed significantly between the two samples. This result suggests that the body image distortion that drives many eating disordered individuals to be thinner, extends to their ideal body image, or that it is perhaps their unrealistic standards that drive them to be thinner.
Body dissatisfaction is a construct that many have suggested can be defined as the discrepancy between the actual and ideal body images (Cash and Deagle, 1997; Thompson, 2000) and is often negatively associated with eating disorders (Ben-Tovim and Walker, 1991; Killen et al., 1992; Striegel-Moore & Smolak, 2001). However, given the conflicting evidence regarding perceptual distortions in body image in clinical samples of adolescent girls, it is uncertain as to whether girls with anorexia nervosa will rate their actual and ideal body shapes differently in comparison to non-clinical girls. Furthermore, very few authors have employed the pictorial rating scale to assess the actual and ideal body image and the discrepancy between the constructs within eating disordered populations; hence, an a priori prediction about whether group would have a significant effect on actual, ideal and discrepancies could not be made.

Although it seems intuitively appealing to suggest that both BMI and age will significantly affect silhouette matching task ratings, there has been little research to suggest this. As a construct, actual ratings should reflect BMI and have been shown to be highly correlated to BMI (see Marsh & Roche, 1996). However, it is unclear as to whether BMI would have a significant effect on ideal ratings or discrepancies, given that these are more affective measures than actual ratings. Additionally, as highlighted in chapter 2, researchers have demonstrated that body dissatisfaction can fluctuate throughout the lifespan, and be negative during adolescence. If this is the case, age should have a significant effect on actual (reflecting the pubertal changes that occur to the body) and discrepancy scores (reflecting increased body dissatisfaction). However, many researchers have not investigated the absolute discrepancy between actual and ideal ratings of body image (a discrepancy in a positive or negative direction). Thus it is unknown whether age would have an effect on absolute
discrepancy. Furthermore, although researchers have indicated that body image dissatisfaction increases during adolescence, researchers have not specified whether there is an effect of age on ideal ratings or whether these remain constant throughout the adolescent period. As a consequence of the lack of research in the area, research questions were developed to determine the independent effects of age and group on the silhouette matching task variables.

2.3 Assessment of the Self-discrepancy Theory of Body Image

Hypothesis 2.3.1: The data obtained for the total sample will support the self-discrepancy theory of body image. That is, actual ratings of body image will have a negative effect on the multiple dimensions of self-concept (indicating, the larger I think I am, the lower my self-concept), and ideal ratings will have a positive effect on self-concept domains (thus indicating the larger my ideal, the higher my self-concept). However, to provide support for the model, the absolute discrepancy between the actual and ideal ratings will explain more variance in self-concept than actual and ideal ratings alone.

Research Question 2.3.1: Will the beta paths for the self-discrepancy model hold for both the clinical and the non-clinical samples of adolescent girls? That is, will the paths between actual, ideal and absolute discrepancies be invariant across the two samples of adolescent girls?

Rationale for Hypothesis and Research Question

Rationale for Hypothesis 2.3.1 and Research Question 2.3.1: As described by authors such as Marsh and Roche (1996) and Marsh (1999), support for the discrepancy model entails that firstly, actual ratings of body image are negatively associated with self-concept (indicating that the larger I am, the lower my self-
concept) and that ideal ratings have a positive effect on self-concept (indicating the larger and more attainable my ideals are, the higher my self-concept). Secondly, the model proposes that the discrepancy between the actual and ideal ratings should explain more variance in self-concept than actual and ideal ratings alone. However, to date only several authors have been able to provide evidence for the self-discrepancy theory for body image. Indeed, this has only been achieved using silhouette matching task variables for the assessment of body image in normative samples of adolescents (see Marsh & Roche, 1996; Marsh, 1999). Based on this previous evidence it is proposed that the self-discrepancy theory for body image will apply for the overall sample of adolescents. As a result of the limited research in the area regarding clinical populations, a research question was formulated to determine whether the model would apply equally for the clinical and non-clinical samples.

2.4 Mediating effects of Body Image Ratings on Relations between group and Self-concept

Research Question 2.4.1: Do the body image variables of actual ratings, ideal ratings and the discrepancies between them mediate the effect of group on self-concept domains?

Rationale for Research Question

Literature has identified that there is an association between body image and self-esteem, indicating that a negative body image is related to negative self-esteem (e.g. Tiggemann & Stevens, 1999). Furthermore, as previously indicated, researchers often associate eating disorders with both self-esteem and body image. Despite extensive research investigating the direct association between body image, self-esteem and eating disorders, very few researchers within the mental health sector have
investigated body image as a mediating factor between eating disorder group membership and the multiple dimensions of self-concept, which includes self-esteem. Hence, although researchers have suggested that body dissatisfaction mediates the relationship between self-esteem and eating disorder symptomatology, it is unclear whether the effect of group on self-concept is mediated by the various body image variables that are assessed by the silhouette matching task. As a result a research question was developed to address this gap in the literature.

2.5 Comparison of Actual, ideal and discrepancies for clinical and non-clinical girls

Research Question 2.5.1: For clinical and non-clinical girls of equal BMI, will there be any difference in actual ratings of body image?

Research Question 2.5.2: For clinical and non-clinical girls of equal BMI, will there be any difference in ideal ratings of body image?

Research Question 2.5.3: For clinical and non-clinical girls of equal BMI, will there be any difference in the discrepancies between their actual and ideal ratings of body image?

Rationales for Research Questions

Rationale for Research Questions 2.5.1 to 2.5.3: To date, methods used to assess the distortion of body image have yielded inconsistent results. Consequentially, it is unclear as to whether there is actually any distortion of body image experienced by eating disordered individuals. By far the most consistent results as indicated by the review by Cash and Deagle (1997) have been the various variations of the silhouette matching task, which assess actual body image and body image dissatisfaction. Given that diagnostic criteria for anorexia nervosa and other eating disorders include body
image distortion, it would be expected that despite having equal BMI ratios, clinical girls would have larger actual ratings of body image in comparison to non-clinical girls. Further, it would be expected that they would have larger discrepancies (despite having equal BMI ratios). However, given the lack of research in the field and as a result of the inconsistency of research results regarding the distortion of body image in eating disorders, research questions have been posed to determine whether clinical and non-clinical girls rate their actual, ideal and discrepancies differently, despite having equal BMI.

**Study 3: Experiences and Support Needs of Adolescents with Anorexia Nervosa**

*Statement of the Problem*

Anorexia nervosa is a chronic illness that inevitably influences the daily functioning and daily activities of patients and their families. As previously highlighted, although a handful of researchers have recognised the importance of examining the lived experiences of patients, very little has been done in anorexia nervosa research. Furthermore, most of those that have investigated the experiences have focused on the adult patient, and therefore little is known about the adolescent experience. Elucidating patients’ perspectives of the impact of such a chronic disorder on their lives and activities may prove to be crucial for a better understanding of the disorder, the individuals that suffer from the disorder and the coping and support mechanisms that they may employ to help them cope. On a practical level, understanding the experiences and support needs of patients can assist in informing health professionals about their feelings and emotions regarding their illness and the treatment that they have received throughout the illness trajectory. On a more basic level gaining an understanding of these factors could thus lead to the development of
treatment models that patients find more effective and more satisfactory, thus leading to a higher level of engagement with therapy and treatment.

Aim

This study thus attempted to employ qualitative research methods to investigate the everyday experiences and support needs of adolescent girls with anorexia nervosa. From this exploration of experiences and support needs, a vignette style questionnaire was developed and administered to determine whether the experiences and support needs identified by inpatients could generalise to a larger population of young people who had been diagnosed with an eating disorder. There are three components of this study: the first was the analysis of a small sample of interviews with adolescent girls who had been diagnosed with anorexia nervosa and were being treated as inpatients. Further, this component involved the conceptual mapping of the existing body of literature. Themes from both sources of data were then triangulated to formulate the thematic basis of the vignette style questionnaire assessing the experiences and support needs of young people with eating disorders. The second component involved the development of the vignette style questionnaire that explored the experiences and support needs of young people with eating disorders. The third and final component involved the administration of the questionnaire to evaluate the generalisability of the experiences and support needs of anorexia nervosa sufferers.
Statement of Research Questions

Development of the Experiences and Support Needs of Young People with Eating Disorders Questionnaire

Research Question 3.1: What are the substantive and most frequently occurring issues and themes that emerge from the interview data (regarding girls’ understandings of their disorder, how their disorder affects their everyday lives, their support needs and perceptions of the treatment that they have received)?

Research Question 3.2: What are the substantive issues and themes that emerge from the body of eating disorders literature?

Research Question 3.3: How do the experiential issues raised by the interview participants relate to the existing body of literature? More specifically, which issues have been raised in interviews that have not been extensively examined in the existing body of literature?

The Administration and Analysis of the Experiences and Support Needs Responses

Research Question 3.5: Are the experiential and support needs issues included in the Experiences and Support Needs Questionnaire generalisable to the wider population of eating disordered adolescents?

Research Question 3.6: What are the themes that emerge from the data regarding the characteristics of the experience/support needs themes examined in the Experiences and Support needs questionnaire and what clinical implications can be drawn from these findings?

Rationale for Research Questions

Rationale for Research Questions 3.1 to 3.6: In spite of extensive research into eating disorders there is very little consensus as to how to effectively treat and prevent
eating disorders, with many patients and their families often resisting treatment strategies (Newton et al., 1993; Treasure & Schmidt, 2001). It is possible that patient resistance to and dissatisfaction with treatment stems from a lack of clinicians’ understanding of adolescents’ experiences with the eating disorder and also the supports that they feel they need to cope with the disorder and to improve their condition. In health research, many authors have recognised the importance of investigating the patients’ experiences, their feelings, concerns and needs to increase current understandings of both the illness that they are living with and the treatments that they experience (e.g. Bradshaw & Brekke 1999; Davidson & Stayner 1997; Jenkins 1997; Karp 1994; Norman 1990; Prince & Prince 2001; Voruganti, Heslegrave et al. 1998).

As researchers become more aware of the advantage of synthesising quantitative and qualitative methods to understand and explain phenomena, there has been more interest in the experiences of sufferers and their families. Much of this research, particularly within eating disorders research however, has concentrated on the adult patient and hence there is an obvious paucity of research centred on the adolescent patient.

Chan and Ma (2000, 2003) for example are among a handful of researchers who have addressed the significant paucity of research by investigating the subjective experience of eating disorder sufferers. However, they, like other researchers in the field, have explored the experiences of adult sufferers, and thus there is still very little understanding of the experiences of adolescent sufferers. More recently, a study conducted by Colton and Pistrang (2004) also attempted to bridge the gap in the literature examining the experiences of adolescents with anorexia nervosa in inpatient treatment settings. However, this study is one of the few studies that have been
conducted in the field, and thus researchers and clinicians alike still have a limited and unclear understanding of the experiences and support needs of adolescent sufferers.

The few studies that have investigated the experiences of sufferers have highlighted the importance of exploring their experiences in order to understand why the sufferers feel that they need to maintain their disorder, how they feel about certain aspects of their disorder, how they deal with the disorder and the sorts of things that would help them cope with their condition throughout the illness trajectory. Furthermore, learning about the perspectives of patients may increase knowledge of recovery factors and treatment acceptance/resistance.

Given the lack of research in the field, this is an exploratory study, and hence research questions regarding the experiences of adolescents with anorexia nervosa were developed to address this gap in the literature. The research questions for the first component of this study (Research Questions 3.1 to 3.3) focus firstly on the themes that emerged from the interviews regarding the experiences and the support needs of adolescent girls who were currently being treated for anorexia nervosa. These themes were triangulated with themes from the existing body of literature to determine where the gaps are in the literature, and hence which areas required more research. It was thought that these themes would form the basis of the development of the Experiences and Support Needs Questionnaire, which aims to ascertain whether the experiences of interview participants are generalisable across a wider sample of young women with eating disorders.

Further research questions were thus developed to address the open-ended responses obtained from the questionnaire. These questions attempted to illuminate
the experiences, and perceptions of support needs from a wider sample of young women with eating disorders.

**Summary**

In the light of previous research and identified significant gaps in the eating disorders literature, research aims, hypotheses and research questions for the current study were developed and presented in this chapter. Additionally this chapter presents the rationale for the specific research predictions and questions that this study attempts to investigate. In summary, the major objective of this series of studies is to test the multidimensional model of the self-concept and the self-discrepancy model of body image in two different samples of adolescent girls. The final study of this investigation addresses a significant gap in the literature in exploring the experiences and support needs of adolescents with anorexia nervosa and other eating disorders. The following chapter describes the methodology developed to address these research aims, hypotheses and questions.
CHAPTER 4

METHODOLOGY

Introduction

This research thesis consisted of a series of three studies. Two of these studies investigated various aspects of the self-concept and body image profiles of girls with anorexia nervosa, and a comparable sample of non-clinical adolescent girls using sophisticated quantitative methods. The third study was a qualitative study, in which interview data was analysed to form an open-ended, vignette style ‘experiences and support needs of adolescents with anorexia nervosa’ questionnaire. Additionally, this final study involved the administration of the newly developed questionnaire, analysis and exploration of the experiences and support needs of young patients diagnosed with an eating disorder (see Table 4.1 for an outline of the three studies that make up the current thesis). This chapter will provide a comprehensive description of the clinical and non-clinical adolescent samples involved in both Studies 1 and 2, and the clinical sample involved in Study 3. This chapter will also present an overview of the research plan for each of the separate
studies, measures, procedures and statistical analyses proposed in light of the specific aims and hypotheses that were previously presented in Chapter 3.

Table 4.1

Outline of Studies 1, 2 and 3 of this Thesis

<table>
<thead>
<tr>
<th>Study</th>
<th>Study Title</th>
<th>Outline</th>
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<tbody>
<tr>
<td>1</td>
<td>Generalisability of the multidimensional model of the self-concept</td>
<td>This study assesses the generalisability of the multidimensional model of the self-concept to a clinical sample of adolescent girls by assessing the psychometric properties of the SDQII-S, and comparing the factor structures between the two samples. This study also compares the self-concept profiles of the clinical sample of adolescent girls to a sample of non-clinical sample of adolescents. This study also investigates the relationship between various facets of the self-concept and eating disorder symptomatology for the two adolescent samples.</td>
</tr>
<tr>
<td>2</td>
<td>Generalisability of the self-discrepancy model</td>
<td>Assesses the generalisability of the self-discrepancy model to a clinical sample of adolescent girls, and investigates the similarities and differences in the ideal and actual body shapes of clinical and non-clinical adolescent girls. Additionally, this study investigates the influence of the actual and the ideal body images on</td>
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self-concept. Finally, the mediating effect of body image on the association between group and self-concept was examined.

Experiences and support needs of adolescents with anorexia nervosa and other eating disorders

Study 3 involved the analysis of 16 in-depth interviews with adolescent girls with anorexia nervosa to develop codes for items for a new assessment measure that explores the experiences and support needs of adolescents with anorexia nervosa. This study also involved the administration of the newly developed questionnaire with a sample of young women with eating disorders to determine the generalisability of experiences and support needs of adolescents with eating disorders.

Participants and Methods of Recruitment

Clinical Sample 1 (Involved in Studies 1 and 2)

Given the nature of the study and the population of participants, it was recognised that recruitment of a large enough sample to perform the anticipated analyses would be difficult. Participants were recruited for the study over a period of two years (2002-2004), from Eating Disorders Clinics from the Adolescent Medicine Units of two of the largest public hospitals in Sydney. The participating hospitals were both situated in the South Western Area of Sydney, New South Wales, and are located adjacent to each other. The difference between the two
hospitals was that one is an adult hospital whereas the other is a children’s hospital, although both treated adolescent girls with eating disorders.

Both hospitals provide inpatient and outpatient services for their clients. Clients that are assessed and deemed as medically unstable are admitted into the hospital inpatient treatment service, where they remain under 24-hour hospital supervision. Usually these patients have a very low body weight, have low blood pressure, are often tachycardic, and are at risk of suffering a heart attack (hereafter, these patients are referred to as inpatients). Those patients who are not chronically medically unstable receive treatment through the outpatient services provided by each of the hospitals (hereafter, these patients are referred to as outpatients). Outpatient treatment programs usually involve weekly, fortnightly or in some cases more frequent appointments with clinicians for the monitoring of weight and diet and usually involve psychological treatment for the disorder.

The sample consisted of 76 adolescent girls aged between 12 and 18 years ($M=14.93$, $SD=1.80$), who had received a primary diagnosis of anorexia nervosa. Although the length of illness varied for participants, the average length of illness for this clinical sample was 12.82 months. At the time of recruitment, all participants were receiving treatment for their eating disorder with either the inpatient or outpatient services provided at these clinics. Potential participants were excluded from the study if they had not received a primary diagnosis of anorexia nervosa. Of the 76 participants, 35 were inpatients at the time of recruitment (comprising 46.1% of the total clinical sample), whilst the remaining 41 participants were recruited through the outpatient clinics (comprising 53.9% of the clinical sample). For further descriptive details for the clinical sample, including details about country of birth, ethnicity, schooling, health and family, see Appendix 1.
Typically, studies in the eating disorders field have employed DSM criteria for the recruitment of participants, thus excluding those patients who do not fit the strict criteria specified for anorexia nervosa and other eating disorders in the manual. However, there are always some patients who are clearly eating disordered who do not meet the strict criteria for anorexia nervosa (such as those patients for whom the magnitude of their symptoms does not meet the strict guidelines of anorexia nervosa, despite their possessing eating disordered behaviours and cognitions). As a result, strict DSM criteria for anorexia nervosa were not employed for this study (see chapter 2 for a more detailed discussion of the use of DSM criteria for diagnosis of anorexia nervosa). Hence, to capture a greater and more representative range of individuals for whom anorexia nervosa is relevant, strict DSM criteria for anorexia nervosa were not used as diagnostic criteria in the two clinics in which this study was conducted. Nor were they used as criteria for selecting the sample for this study. Rather, the two clinical teams at the two recruitment sites determined the girls’s diagnosis of anorexia nervosa, based on professional experience in the recognition of symptoms and cognitions, knowledge of the DSM criteria and referral from a primary health care provider (most diagnoses made by the treatment teams are primarily based on the current DSM criteria). All adolescent referrals that were made to the clinics were interviewed and assessed by the team’s medical doctor, psychiatrist/psychologist and social workers. Girls who received a primary diagnosis of anorexia nervosa from the clinical team were subsequently asked to participate in this study.

Treatment teams at both the hospitals are very similar in structure and in terms of the treatment and diagnostic models employed. The clinical teams at both hospitals often have inter-institution meetings to discuss patient status, progress, and
treatment methods, thus ensuring a high level of diagnosis and treatment consistency between the two hospital systems. Furthermore, some members of the clinical team are employed by both hospitals and thus have a role in both clinical treatment teams. For example, both eating disorder clinics employ the same family therapy model and both treating teams work together as a single family therapy team.

All potential participants were approached by the researcher, and were firstly told about the study and its aims. Any questions that patients had in regard to the study and the questionnaires were answered by the researcher, and subsequently instructions for the questionnaires and the rating scales were given to those patients who agreed to participate in the study. Participants were asked to complete a battery of self-report questionnaires, including a demographics questionnaire, the Eating Disorders Inventory (EDI-2; Garner, 1991), the short version of the Self Description Questionnaire II (SDQII-S; Marsh, 1992) and a silhouette matching task for body image. The girls were encouraged to seek assistance from the researcher if they had any difficulties understanding any of the items, and were assured that their individuals’ responses would remain anonymous.

The girls recruited from the outpatient clinics completed the questionnaires independently and at their own pace during their consultations with the treatment teams. Once informed consent was given (usually consent was given prior to their appointment), girls would start the questionnaire battery and continue completing it until their consult with the clinical treatment commenced. Those participants who were not able to complete the questionnaire battery during the visit, were asked to complete the questionnaire in their own time, and given a stamped self-addressed envelope to post the completed questionnaire back to the researcher.
The inpatients were approached on the hospital ward that they had been admitted to, and once consent had been given, the questionnaires were left with them to do in their own time, and collected by the researcher at a later date. On some occasions, girls completed the questionnaire with the researcher. The questionnaire battery took each participant approximately 60 minutes to complete.

Clinical Sample 2 (Involved in Study 3)

The interview participants were adolescent girls \( (n = 16) \) aged between 14 and 20 years \( (M= 16.44 \text{ years}, \, SD= 1.93) \). The girls were all recruited from the two participating eating disorder inpatient clinics (some of these participants also participated in the previous studies). Interview participants were recruited as a part of a larger study, of which this doctoral thesis was a part, and are a sub-sample of the overall sample that was used in the larger study. Although the data was collected as a part of a different study, the analysis was an independent and unique part of the present thesis.

Girls were approached by a member of the research team individually, and were given a full explanation of the aims of the study and the interviews. Girls were also informed of the types of questions that would be asked in the interviews. All participants were informed that the interviews would be recorded and transcribed, and that they would have the opportunity to read the transcripts before they were analysed. Anonymity was assured. The average length of illness for the girls who were interviewed was 20 months \( (SD= 21.00) \). The average BMI for the participants was 17kg/m2 \( (SD= 1.00) \).
**Clinical Sample 3 (Involved in Study 3: Administration of the Questionnaire)**

This clinical population comprised 84 adolescents and young adults listed on the hospital eating disorder database (each of the participating eating disorders clinics had separate databases), as having been treated for an eating disorder or who were currently receiving treatment. The participants were aged between 11 and 23 years ($M=17.43$ years, $SD=2.46$). The average BMI for this sample was just below the healthy range at $19.21\text{kg/m}^2$ (for a more detailed description of this sample, refer to the sample description in the discussion of Study 3 and Appendix 2).

Potential participants were accessed from the hospital eating disorders database. Girls were sent a package containing an information letter, a consent form; a demographics questionnaire and the Experience and Support Needs for Young People with Eating Disorders Questionnaire (see Appendix 2 for the questionnaire). Girls were asked to complete the questionnaires and then send them back in an envelope provided by the researchers. All responses to the questionnaire were anonymous.

**Non-clinical Sample (Involved in Studies 1 and 2)**

The non-clinical sample comprised a total of 829 adolescent girls aged between 12 and 19 years ($M=14.08$ years, $SD=1.59$). Participants were recruited from Grades 7 through to 12 from three different private high schools across the western suburbs of Sydney, Australia. Eighty four percent ($N=696$) of this non-clinical sample were recruited from single sex schools (two different schools), whilst 133 students (accounting for 16 percent of the total sample) were recruited from a co-educational high school. One of the single sex colleges was a Catholic college,
which provides education for both primary and secondary students, whilst the other two colleges were Christian Secondary colleges.

Of the 829 high school students, 189 were currently in Grade 7 (accounting for 22.8 percent of the sample), 161 were enrolled in Grade 8 (accounting for 19.4% of the sample), and 230 students were enrolled in Grade 9 (accounting for 27.8% of the population), 87 students were recruited from Year 10, and 108 students from Year 11 (accounting for 10.5% and 13.0% of the sample respectively). Finally, the smallest population of students was recruited from Year 12, of which there were 54 students (accounting for the remaining 6.5% of the sample; see Appendix 3 for a more detailed description).

For two of the schools (one of the single sex schools and the co-educational school), the questionnaires were administered in a large hall or large classroom by the researcher and two research assistants during a scheduled class period. For the third school (single sex school), the researcher administered the questionnaires one class at a time. Students in each of the testing sessions were firstly told about the research project, and then given instructions on how to use the different rating scales for each of the assessment measures. All students were encouraged to ask questions and seek assistance if they required some help, or if they were having any difficulties understanding or responding to an item. Anonymity of the participants’ responses was assured. Students were asked to complete the questionnaires on their own and at their own pace.

The questionnaire battery for the non-clinical sample included a modified version of the demographics questionnaire; the SDQII-S, the EDI-2 and a modified version of the Silhouette Matching Task (see instrumentation for a detailed description of the instruments and the differences between the instruments for the
two samples of adolescents). Once girls had completed the questionnaire battery, they were asked to submit the questionnaire to the researcher. The questionnaire battery took participants approximately 45 minutes (equivalent to one class period) to complete.

Instrumentation

Quantitative Measures

Demographics questionnaire for clinical participants (used for Studies 1 and 2)

Questions were devised by the researcher for this questionnaire to gather relevant background information about each participant in four different areas: general background information, information about their schooling, family background information and general details about health (see Appendix 4). All clinical patients were asked to complete this questionnaire, which was a part of the complete questionnaire battery, at the time of administration.

More specifically, the demographic information collected included background information regarding age, date of birth, country of birth, information about schooling, including type of school that the girls attended, year level at school, and level of attendance in the last three months. For non-school students, participants were asked what their last year of attendance was, whether they were completing any post-school courses, and what employment status they had, if any. Additionally, girls were asked some background questions about their family, including their parents’ country of birth, and who belonged to their immediate family. Girls were also asked several questions about their health, including details of their height, their weight, their age at their first menstrual cycle (if they were
menstruating), whether a doctor had diagnosed them with anorexia nervosa, and if they had, when they received the diagnosis.

Demographics Questionnaire for the Non-clinical Participants

Non-clinical adolescents were also asked to complete a demographics questionnaire as a part of the larger questionnaire battery (see Appendix 5). This questionnaire was based on the demographics questionnaire for the clinical sample of adolescents, and consisted of questions including date of birth, country of birth, school attendance, family background, and general health. However, as opposed to asking the non-clinical girls whether they had ever been diagnosed with anorexia nervosa, girls were asked whether they had ever thought about losing weight, and whether they ever try to lose weight. Additionally, girls were asked about the methods they had employed in an attempt to lose weight.

The Self-Description Questionnaire II (Short)

To assess girls’s self-evaluations, the Self-Description Questionnaire II short (SDQII-S; Marsh, 1992) was employed. As the participants of this study were asked to complete a battery of questionnaires consisting of a total of seven questionnaires, the shorter version of the SDQII was chosen for practical reasons, and to minimise the time required to administer the questionnaire battery. The original version of the SDQII is a self-concept questionnaire that is specifically designed to assess and measure multiple distinct dimensions of the self-concept. It was designed for adolescents in Grades 7 through to 12 (for adolescents aged between 12 and 18 years) and measures seven non academic dimensions of self concept including

Like the other versions of the SDQ, the SDQII-S is based on the multidimensional and hierarchical model of self-concept proposed by Shavelson et al. (1976). This shorter version of the SDQII, although consisting of only half of the original 102 items (i.e., 51 positively and negatively worded items) and still retains all 11 of the original self-concept dimensions (see Table 4.2 for the scales, a description of the scales and sample items from the scale; see also Appendix 6 for the questionnaire). Similarly to the original instrument, it employs a 6-point Likert scale ranging from false (1) to true (6). Respondents were asked to indicate ‘false’; ‘mostly false’; ‘more false than true’; ‘more true than false’; ‘mostly true’ or ‘true’ in response to various statements about themselves.

Table 4.2

Summary Description of the SDQII-S Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>Description</th>
<th>Example items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Abilities</td>
<td>Respondent’s perception of their own skills and interests in physical activities</td>
<td>“I enjoy things like sports, gym and dance”</td>
</tr>
<tr>
<td>Physical Appearance</td>
<td>Respondent’s ratings of their physical attractiveness including how they feel that they look in comparison to others</td>
<td>“I am good looking”</td>
</tr>
<tr>
<td>Same Sex Relations</td>
<td>Participant’s rating of how popular they are with members of the same sex, and how easily they are able to make friends with people of the same sex</td>
<td>“I make friends easily with members of my own sex”</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
<td>Sample Response</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Opposite Sex Relations</td>
<td>Participant’s rating of how popular they are with members of the opposite sex, and how easily they are able to make friends with people of the opposite sex</td>
<td>“I am not very popular with members of the opposite sex”</td>
</tr>
<tr>
<td>Parent Relations</td>
<td>Participant’s ratings of how well they get along with their parents, whether they like their parents and their judgements on the quality of interactions with their parents</td>
<td>“I sometimes tell lies to stay out of trouble”</td>
</tr>
<tr>
<td>Honesty/Trustworthiness</td>
<td>Participant’s judgement of how honest and trustworthy they are</td>
<td>“I get along well with my parents”</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>Respondent’s ratings of how calm and relaxed they are, how emotionally stable they are and how much they worry</td>
<td>“I worry about a lot of things”</td>
</tr>
<tr>
<td>Verbal</td>
<td>Respondent’s ratings of their skills and abilities in English subjects at school</td>
<td>“I learn things quickly in English classes”</td>
</tr>
<tr>
<td>Math</td>
<td>Respondent’s ratings of their skills and abilities in Mathematics as a school subject</td>
<td>“I do badly in tests in Mathematics”</td>
</tr>
<tr>
<td>General School</td>
<td>Participant’s ratings of their skills and abilities in school subjects in general</td>
<td>“I am good at most school subjects”</td>
</tr>
<tr>
<td>General Self-concept</td>
<td>Respondent’s ratings of themself as effective, capable individuals, who are proud and satisfied with the way that they are</td>
<td>“Most things I do, I do well”</td>
</tr>
</tbody>
</table>

The SDQ instruments developed by Marsh are amongst the best measures that assess the multiple dimensions of the self-concept, with strong psychometric
properties and exceptional construct validity (Byrne, 1998; Hattie, 1992; Wylie, 1989). Recent evaluations of the SDQII-S by Marsh, Ellis, Parada, Richards, and Heubeck (2004) revealed that the reliability of the instrument is similar to the original version of the SDQII, with Cronbach’s Alpha values ranging from .80 to .90. Original reliability estimates of the SDQII ranged from .78 (for the honesty and trustworthiness scale) to .89 (for the math scale).

**The Eating Disorder Inventory 2**

To assess the presence or absence of eating disorder symptomatology and the severity of eating disorder symptoms in adolescent samples, the Eating Disorder Inventory-2 (EDI-2; Garner, 1991) was utilised. This scale is a self-report questionnaire that assesses the presence and the severity of eating disorder symptoms. It is one of the most commonly used questionnaires used in eating disorder research (for example, see Garner, 1991; Garner & Garfinkel, 1997), being a comprehensive and concise diagnostic and screening tool (Garner, 1991). In clinical settings, the inventory is used to provide important information about any given patient, and assist clinicians in understanding the patients and their symptoms. Many researchers have successfully used the instrument as a tool that provides descriptive information about research samples, using it to differentiate between different samples of eating disordered populations and also to differentiate between eating disordered populations and non-eating disordered populations. The original version of the eating disorders inventory and subsequent versions of the inventory have been widely used in research as both an outcome measure and as an indicator of prognosis and outcome (Garner, 1991; Rosen, Silberg, & Gross, 1988; Welch, Hall, & Norring, 1990).
The EDI-2 is a questionnaire that was specifically designed for adolescents, aged 12 years and older, to measure respondents’s attitudes, beliefs and behaviours toward food and eating and other eating disorder related areas. The EDI-2 has 64 core items, which form eight subscales including ‘drive for thinness’, ‘bulimia’, ‘body dissatisfaction’, ‘ineffectiveness’, ‘perfectionism’, ‘interpersonal distrust’, ‘interoceptive awareness’ and ‘maturity fears’. The EDI-2 also has 27 additional items that form the three provisional scales that assess ‘asceticism’, ‘impulse regulation’ and ‘social insecurity’ (see Table 4.3 for a description of each individual scale; see also Appendix 7 for the complete questionnaire). Responses are made on a six point Likert scale: ‘always’; ‘usually’; ‘often’; ‘sometimes’; ‘rarely’ and ‘never’. According to the test manual, responses for each of the items are weighted from zero to three (rather than 1-6), with three indicating highly symptomatic, and zero indicating non-symptomatic. Scores are calculated for the individual subscales, rather than a total EDI score, as subscale scores provide a more accurate illustration of pathology.

Table 4.3

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Drive for thinness</td>
<td>Assesses respondent’s motivation to be thinner, and excessive concern with their weight.</td>
</tr>
<tr>
<td>Bulimia</td>
<td>Investigates the individual’s tendency to engage in binge/purging behaviours, which is characteristic of bulimia nervosa.</td>
</tr>
<tr>
<td>Body Dissatisfaction</td>
<td>Examines the respondent’s dissatisfaction with their overall shape and size</td>
</tr>
<tr>
<td>Scale</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ineffectiveness</td>
<td>A scale that addresses an individual’s feelings of inadequacy, insecurity and worthlessness. It also investigates the respondents feeling of lack of control over their own lives.</td>
</tr>
<tr>
<td>Perfectionism</td>
<td>Refers to an individual’s belief that their personal achievements should be superior</td>
</tr>
<tr>
<td>Interpersonal Distrust</td>
<td>A scale that examines an individual’s feelings of alienation and their insecurity about forming close relationships</td>
</tr>
<tr>
<td>Introceptive awareness</td>
<td>Assesses an individual’s confusion about recognising and responding appropriately to emotional states</td>
</tr>
<tr>
<td>Maturity Fears</td>
<td>Examines the respondent’s desire to remain in 'or regress to childhood</td>
</tr>
</tbody>
</table>

**Provisional Scales**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asceticism</td>
<td>Assesses the respondent’s spiritual and religious drives to fast, lose weight and value thinness</td>
</tr>
<tr>
<td>Impulse regulation</td>
<td>Assesses an individual’s tendency to abuse substances, be destructive in relationships, be impulsive and hostile</td>
</tr>
<tr>
<td>Social Insecurity</td>
<td>Subscale that investigates the respondent’s idea that their social relationships are insecure and tense, disappointing and generally poor quality.</td>
</tr>
</tbody>
</table>

Previous estimates of internal consistency for the EDI-2 scales range from Cronbach’s $\alpha = .83$ to $.93$ for the normed sample of eating disordered patients ($n = 889$) (Garner, 1991). Further investigations have indicated that Cronbach’s $\alpha$ for non-patient samples ranged from: $.69$ ($n = 354$; Shore & Porter, 1990) for the bulimia scale to $.93$ for the body dissatisfaction scale ($n = 158$; Vanderheyden, 1987). Estimations for the provisional scales range from Cronbach’s $\alpha = .70$.80 for an eating disordered sample and $.44$ to $.80$ for the non-patient sample.
The Silhouette Matching Task

The current Silhouette Matching Task (SMT) was based on the Stunkard, Sorenson and Schulsinger (1983) figure rating scale and the silhouette matching task developed by Marsh and Roche (1996) is an instrument that explores perceptions about body shape using a set of 12 silhouette figures on a continuum ranging from very underweight to very overweight. The current silhouette matching task was specifically tailored for the various samples who participated in this study, and included both self and meta evaluations of body image. The clinical sample was asked to respond to 28 questions using the numbered pictorial (silhouette) figures (see Appendix 8), and the non-clinical sample was asked to complete a modified version of the same questionnaire with 23 questions (see Appendix 9). For the non-clinical sample of adolescents, ideal and actual body image questions remained the same; however, questions that were specific to eating disorders were removed. Marsh and Roche (1996) reported that the advantage of using an instrument that employs a pictorial scale is that it eliminates the verbal ambiguity that usually occurs when using verbal response scales. The silhouette matching task developed by Marsh and Roche, adapted and extended the work of Stunkard et al. (1983), whose original scale only contained 9 silhouette figures. The current silhouette matching task has been modified further for the clinical sample, to include questions that are relevant to eating disordered populations such as ‘what would you look like if you ate what the family doctor told you to eat?’ and ‘what do you think your doctor wants you to look like?’. Additional items include questions about what girls think their friends look like and what they think their friends want them to look like.

Previous analyses of the Marsh and Roche version of the silhouette matching task have indicated that ratings for actual silhouette matching are very well
correlated with objective measures of body composition, with correlations ranging from .57 to .65, indicating the construct validity of the silhouette matching task.

Research Design

**Ethical Considerations**

Consent to conduct this research project was gained by several different ethics committees. For Studies 1 and 2 permission was obtained from the University of Western Sydney Human Research Ethics Committee, the Western Sydney Area Health Service (Human Research Ethics Committee) and the Children’s Hospital at Westmead Human Ethics Committee. Additional ethics approval was obtained for Study 3 from the Western Sydney Area Health Service (Human Research Ethics Committee), the Children’s Hospital at Westmead Human Ethics Committee and the University of Western Sydney Human Research Ethics Committee.

All participants (both clinical and non-clinical) were required to give informed consent to participate in the study. Additionally, all participants under the age of 15 years were required to obtain parental consent before participating in the study. For the non-clinical sample, school principals were first contacted and informed of the study. Once school consent had been given, information letters and consent forms were sent home to parents, and all girls were asked to obtain parental consent to participate in the study. Based on the advice of principals, consent forms asked parents to return the form if they did not want their daughter to participate in the research. Only three parents indicated that they did not want their daughter to participate in the study (personal communication with a school teacher revealed that these girls were a part of a gymnastics team and were currently in competition)
Study 1: Generalisability of the Multidimensional Model of the Self-concept

Introduction

This study was the first of a series of three studies. The data obtained from the clinical and non-clinical samples of adolescent girls on the SDQII-S, demographics questionnaires and the EDI-2 were used in this study. The primary objective of this study was to investigate the multiple dimensions of the self-concept in a clinical and non-clinical sample of adolescent girls, and hence to determine whether the multidimensional model of the self-concept could be generalised to a clinical sample of adolescents. Furthermore, this study attempted to compare the self-concept profiles of adolescent girls with and without anorexia nervosa. In addition, the current study also attempted to determine how various dimensions of the self-concept were related to eating disorder symptomatology.

Data Analysis

The data for Study 1 were analysed using SPSS for Windows 12.0 and LISREL 8.54 (Jöreskog & Sörbom, 2002). LISREL 8.54 is one of the most commonly used statistical programs to assess the fit between the covariance matrix for a particular sample and a hypothesised matrix.

Missing Data

Inevitably in any large-scale research project, the problem of missing data will occur; this research was no exception. Traditionally researchers have employed pairwise and listwise deletion methods to replace missing data. However, more recently, authors have emphasised the potential problems with these traditional strategies (eg., Brown, 1994; Gold & Bentler, 2000; Graham & Hoffer, 2000) suggesting instead that the best method to deal with missing data was the
Expectation Maximisation (EM) algorithm (Schafer & Graham, 2002). Given that the EM algorithm procedure has become known as the most practical procedure for missing data (particularly when the percentage of missing data is less than 5%), this study employed the procedure to deal with missing data (percentage of missing data for this doctoral research was 2.48% of total data points).

**Reliability Analysis**

Reliability analyses were conducted for both the SDQII-S and the EDI-2. Reliability is a measurement of the consistency that an instrument has (Anastasi & Urbina, 1997). The primary method of estimating the reliability is by assessing the internal consistency of the instrument, that is, to assess the stability of responses to items of an instrument. This is generally shown as Cronbach’s Alpha. Different theorists have tentatively suggested that a value of .70 or above is an acceptable level of reliability for research and clinical instruments (Anastasi & Urbina, 1997; Hills, 2003).

**Factor Structure of the SDQII-S**

To assess the generalisability of the multidimensional model of the self-concept, as measured by the SDQII-S, confirmatory factor analyses (CFA) were conducted. CFA is a method in which the researcher postulates the relationships between observed measure and a priori factors, which are based on theory or empirical evidence (Byrne, 1998). In CFA, the hypothesised structure is then statistically tested (Byrne, 1998). The raw data for both the clinical and the non-clinical samples from the SDQII-S were used as input for PRELIS (Jöreskog & Sörbom, 2002). A covariance matrix was thus produced and analysed using LISREL 8.54.
The method of model estimation that was employed in this study was the maximum likelihood method. One of the major problems associated with this method of model estimation however, is that it requires a large sample size, and assumes that the data is normally distributed. Despite this, researchers have shown that the maximum likelihood method of model estimation is one of the most robust methods available for CFA, and tends to be relatively robust with regard to violations of the normality assumption (Boomsma, 1982; Hau & Marsh, 2004). Although it has been argued that the lower limit for sample size for the maximum likelihood method of estimation in CFA is 100, and that ideally, sample size should be approximately 200 or more (Boomsma, 1982), in a recent study, Hau and Marsh (2004) showed that Maximum Likelihood estimates were robust even when the sample size was smaller than 100.

Despite having a large enough sample to be able to conduct a CFA for the non-clinical sample of adolescent girls ($n = 829$), the clinical sample size for this study is very small ($n = 76$) relative to the number of indicators measured. As a result, item parcels were formulated on the basis of the original data and observations for each of the scales to assess the factor structure of the SDQII-S. Marsh, Hau, Balla and Grayson (1998) and Hau and Marsh (2004) argue that the use of item parcels formed from the indicator items for the factors enables the researcher to overcome issues of normality (as item parcels have been shown to violate normality assumptions to a lesser degree), and decreases the number of measured indicators in the estimated model (Hau & Marsh, 2004) and thus suggested that a smaller sample is acceptable for the analysis.

In forming the item parcels for the analysis of the SDQII-S, the number of indicators per latent variable (factor) was reduced from between 4 and 6 indicators
to 2. Each parcel was formed on the basis of corrected item total correlations which were calculated in the reliability analyses for each of the scales. Items were parcelled so that the average item total correlation was approximately equal for each parcel. The responses/scores for the items were taken to form the parcels. These constructed item parcels were thus used in the individual instrument CFAs and for invariance analyses for both Studies 1 and 2.

To assess whether the sample data fits the a priori model (for the SDQII-S, the a priori model consists of 11 factors), a range of goodness of fit indices produced by the LISREL program were assessed. Generally, researchers have used the chi-square statistic as a test statistic that assesses the fit between a restricted a priori model and the unrestricted model based on the sample data. A model could thus either be rejected if the chi-square value is large in comparison to the degrees of freedom, or accepted if the chi-square value is small and/or non-significant. Researchers however, have suggested that the chi-square value is highly sensitive to sample size, and thus other goodness of fit indices such as the Tucker Lewis Index (TLI), Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA) also need to be assessed to evaluate how well the a priori model fits the data (Marsh, Balla & Hau, 1996). TLI and CFI have population values ranging from zero to 1.00, which indicate the percentage of covariance that is explained by the variables that are being assessed. TLI and CFI values greater than .90 indicate that the model has good fit to the data (Marsh et al., 1996), although some researchers advocate more stringent criteria (see discussion by Marsh, Hau, & Grayson, 2005; Marsh, Hau, & Wen, 2004), whereas values of .05 and below for the RMSEA are generally seen to be indicative of good fit. Values of .08 for the
RMSEA are representative of a moderate fit, with reasonable errors of approximation (Brown & Cudeck, 1993; Jöreskog & Sörbom, 1993).

**Factor Structure of the EDI-2**

As with the SDQII-S, CFAs for both of the samples were conducted individually to assess the fit of the data to the 11-factor a priori model proposed by the authors of the instrument, and thus an assessment of the generalisability of the model could be made. As with the SDQII-S, the sample size problem was addressed by forming parcelled items for each of the latent variables. In a similar process to the one that was used for the SDQII-S, each latent variable for the EDI-2 was made up of two indicator variable parcels. All parcels were formed on the basis of item total correlations (as calculated in reliability analyses) and thus comprised indicator variables for each factor were reduced from between 6 and 11 to 2. As described in detail above for the analysis of the SDQII-S, the goodness of fit indices used for the analysis of the EDI-2 to indicate whether the data from the adolescent samples fit the a priori model, were the chi-square statistic, TLI, CFI and RMSEA.

**Examination of Differences related to Diagnostic Status for Anorexia Nervosa**

**Factorial Invariance**

It is common for researchers in many disciplines of psychology to compare various groups in terms of mean scores on various different measures. However, little attention has been given to whether the factorial structures of these instruments are equivalent for different groups, and hence whether the factor structures of the instruments hold for the different samples that are being compared. On a practical level, it is important to establish factorial invariance, as it ensures that the scores on instruments for samples can be validly compared. Hence, it was important to assess
the generalisability and structural invariance of the SDQII-S across the clinical and non-clinical samples so as to provide clear and strong justification for the comparison of scores across groups.

In accordance with recommendations from authors such as Byrne and Shavelson (1987; see also Hattie, 1992; Marsh, 1993) to establish the generalisability of the multidimensional model of the self-concept, as measured by the SDQII-S, multi-group CFA methods were employed to assess the structural equivalence between the two adolescent samples (the non-clinical adolescents and the adolescents diagnosed with anorexia nervosa). This test of factorial invariance typically involves the assessment of multiple models, in which one, a set or all of the parameters are constrained to be invariant across all groups (Jöreskog & Sörbom, 1993). Typically, models are assessed in terms of the chi-square difference tests or the variance within the goodness of fit indices. However, as a result of the sensitivity of the chi-square statistic to sample size, more focus was placed on the other goodness of fit indices (TLI, CFI and RMSEA). Generally, invariant goodness of fit indices provide support for the equivalence of factor structures between the groups. The minimum condition of factorial invariance is the equivalence of factor loadings across the multiple groups (for this study, invariance across both the clinical and non-clinical populations).

Based on the recommendations of Marsh (1994) and Byrne (1998), tests of factorial invariance consist of five models which are assessed across the different samples of participants. This series of analyses involved systematically constraining various paths within the model to be invariant across the groups. The first model was completely free and was the least restrictive model, with no between-group invariance constraints placed on the estimated parameters. The second model was
slightly more restrictive than the first, in that the factor loadings were held invariant across the groups. This is typically considered the minimum condition of factorial invariance. The third model held both the factor loadings and the factor variances and the covariances constant. The fourth model is one in which the factor loadings and the uniquenesses are held invariant. The fifth and final model assessed was the most restrictive in that it held all parameters invariant across the groups (totally invariant model). For this dissertation, factorial invariance was assessed between the clinical and the non-clinical sample of adolescent girls.

Invariance models were also tested for the EDI-2 data to ensure that the instrument that was used to assess eating disorder symptomatology was generalizable across the two samples of adolescents.

**Multiple Indicator Multiple Indicator Cause (MIMIC) Models Approach**

This approach is argued to be much stronger than the traditional multivariate analysis of variance (MANOVA) and standard multiple regression techniques in that it enables researchers to determine which of the latent variables can be predicted by distinct observed variables represented by a single indicator (such as age, group and BMI). Thus the advantage of using MIMIC models over traditional multivariate methods is that the analysis is conducted on the basis of the underlying factor structure, which is measured without error, as the analysis is based on the measured variables and thus the researcher is not reliant on the calculated scale scores. An important advantage of the MIMIC approach is that unlike the traditional MANOVA techniques, it is able to easily incorporate both discrete and continuous variables, and the interactions between these independent variables.

All of the MIMIC models tested for this study were conducted with LISREL 8.54, and were estimated on the covariance matrices using the Maximum Likelihood
estimation method. For the purposes of this study, the independent variables for the MIMIC models included Age (years), diagnosis group (where 0= clinical and 1= non-clinical) and BMI (kg/m$^2$). Furthermore, based on the recommendations of Aiken and West (1991) the interaction terms (age x BMI, age x grp, and BMI x group) were zero centred to reduce multicollinearity between the independent variables and their corresponding interaction terms.

**Profile Analysis**

To investigate the self-concept profiles of the two samples, a profile analysis was conducted using a multivariate approach to repeated analysis of variance. This method, although it is not a popular technique, allows researchers to compare the profiles of two or more groups (for the current study, the clinical and non-clinical samples) on several different scales simultaneously (Tabachnick & Fidell, 2001) and thus allows researchers to determine whether there is an overall difference between the groups for the measured scales. In the case of this study, this technique was used to determine whether there was an overall scale difference between the two adolescent samples. However, because the technique assesses all scales simultaneously, when there is a significant difference between the two profiles, subsequent analyses need to be performed to determine where the possible differences exist.

**Study 2: Generalisability of the Self-Discrepancy Model**

**Introduction**

This study attempted to investigate the self-discrepancy model of physical self-concept in two samples of adolescent girls: one sample diagnosed with anorexia nervosa and one sample of non-clinical adolescent girls. More specifically, this
study explores aspects of how adolescent girls perceive their body shapes, how they would like to look and what their ideal body shapes are and how these constructs are related to the self-concept. As this particular model has not been extensively studied in eating disorder research, and has not previously been assessed in the clinical sample of adolescents using SEM approaches, there is also an exploratory component to this study.

Although there is a plethora of research within the field that has investigated the actual ratings of body image and the discrepancy between actual and ideal ratings in clinical and non-clinical populations, very few have investigated the constructs in terms of the self-discrepancy theory. Further, despite the association between body image dissatisfaction and self-esteem, very few researchers have investigated the mediating effect of body image on differences in self-concept and self-esteem.

Of the few studies that have investigated actual, ideal and discrepancies in terms of the self-discrepancy theory, authors have provided moderate support for the existence of actual, ideal, potential and future body image constructs and the self-discrepancy theory using the silhouette matching task (Marsh, 1999; Marsh & Roche, 1996; Marsh et al., 2005). However, this research was conducted with non-clinical adolescents, and mainly compared males and females on ratings.

Hence, the major focus of this study was to establish firstly, whether there was any difference between the two adolescent samples (i.e. the clinical sample with anorexia nervosa and the non-clinical sample of adolescent girls), in terms of actual and ideal ratings of body image; secondly, to test support for the discrepancy model within the two adolescent samples, and to determine whether there was any difference between the discrepancy scores for the two samples. Further, there have
been very few studies within the mental health sector that have considered the mediating effects of different variables (Holmbeck, 1997). As previously highlighted (see chapter 2), within the eating disorders field there have been only a few authors that have explored the mediating affects of body image and self-esteem on eating disorders symptomatology. However, it is still unclear within the literature whether group differences in self-concept are a function of body image or BMI. Therefore, another aim of this study was to investigate the possible mediating effect of silhouette matching task variables on the association between group and self-concept.

Data Analysis

Consistent with Study 1, the data for Study 2 were also analysed using SPSS for Windows 12.0 and LISREL 8.54 (Jöreskog & Sörbom, 2002).

Missing Values

As with Study 1, missing values for this study were handled using the EM algorithm (see Study 1 for further details).

CFA of SDQII-S and Silhouette Matching Task Variables

A preliminary CFA for the total sample was conducted to assess the correlations between the key variables involved in this study. More specifically, the CFA allowed for the examination of the relations between the actual and ideal ratings, discrepancies, and group, BMI and self-concept dimensions. Silhouette matching task variables, BMI and group were entered into the model as single indicator variables. As CFA analyses for the SDQII-S were assessed as a part of Study 1, the factor loadings for the SDQII-S instrument were expected to be unchanged and remain consistently high. Following the preliminary CFA, a
multigroup CFA was conducted to determine whether the factor structure was consistent across the two samples of adolescents. In this analysis, the same item parcels used in Study 1 were employed for the SDQII-S. To revise, these item parcels were used in an attempt to primarily overcome difficulties associated with the small sample size for the clinical group (as the size of the sample is smaller than the number of measured parameters within the model). Goodness of fit indices (chi-square, TLI, CFI and RMSEA) were also evaluated for both analyses to determine whether there was a good fit between the data and the a priori 16-factor structure (the 16 factors include: 11-factor SDQII-S, Actual, Ideal, Absolute Discrepancy, BMI and Group).

**Structural Equation Models (SEM): The Self-discrepancy Model for Body Image**

A series of three SEMs were conducted to evaluate the self-discrepancy model using ratings of body image (silhouette matching task variables). Therefore, actual ratings, ideal ratings and absolute discrepancies were entered into the SEM as predictor variables. More specifically, to provide support for the self-discrepancy model, discrepancies between the actual and ideal ratings of body image should possess higher predictive ability in comparison to actual and ideal ratings alone. The benefit of adopting structural equation models over regression approaches for this analysis is that it addresses the measurement error limitations that are typically associated with multiple regression techniques. Additionally, SEM techniques enable researchers to use multiple dependent variables in one model. Hence, the silhouette matching task variables can be assessed within the model, corrected for measurement error. For example, in the case of the current study, using SEM methods enabled the examination of actual ratings on self-concept after controlling for the effects of ideal ratings.
In investigating the discrepancy model, support for the model required that the discrepancy between actual and ideal ratings of body image would predict self-concept better than ratings of actual and ideal ratings of body image alone. Much of the research into the discrepancy model to date has assumed that ideal ratings contribute positively to self-concept (the larger one’s ideal is, the more attainable it is and hence the higher my self-concept), whereas actual ratings have a negative relationship with self-concept (the larger one’s actual body image is, the lower one’s self-concept; whereas the thinner one’s actual rating is, the higher one’s self-concept). Hence, many researchers have assumed that discrepancies between actual and ideal body image are positive (i.e. that actual ratings of body image are greater than ideal ratings of body image), and that the larger the positive discrepancy between actual and ideal discrepancies, the more negative the self-concept (Marsh et al., 2005). However, as discussed in chapter 2, Marsh and Roche (1996) showed that absolute discrepancies were more valuable in discrepancy models, arguing that a discrepancy in any direction would negatively affect self-concept. Hence, based on previous research, absolute discrepancy contributions and relations were also (along with actual and ideal ratings of body image) entered into the model and assessed.

Therefore, using SEM methods, the self-discrepancy theory was evaluated in a series of three SEMs for the total sample of adolescent girls. The first model assessed the effect of actual ratings on the various domains of the self-concept. The second model was an assessment of the effects of actual and ideal ratings of body image on self-concept. The final model included actual and ideal ratings, and the absolute discrepancy between the ratings as predictor variables for self-concept. Factor correlations and beta coefficients were evaluated to determine the independent predictive ability of the specific predictor variables. Further, goodness
of fit indices (chi-square, TLI, CFI, RMSEA) were also assessed to determine whether there was a good fit between the data and the models being tested.

Following the assessment of the three SEMs for the total sample evaluating the self-discrepancy model, further multigroup invariance analyses were conducted in which the various beta paths from silhouette matching task variables to SDQII-S factors were systematically held invariant. Only the beta paths were tested for invariance here, as the invariance of the SDQII-S was already established in Study 1. The aim of this analysis was to determine whether the self-discrepancy model for body image was applicable for both the clinical and non-clinical samples of adolescent girls. If invariance is established, there is justification to assess the group differences in actual ratings, ideal ratings and discrepancies.

**Multiple Indicator Multiple Cause Models (MIMIC) approach**

Similar to the analyses conducted in Study 1, described previously, MIMIC models were used to evaluate the effect of group, actual, ideal and the discrepancy between actual and ideal body image, and their interactions were entered into the model as observed variables without measurement error on self-concept.

**Structural Equation Model: Mediating Analyses**

To address current limitations in mental health and eating disorders research, analyses were conducted to determine whether body image variables mediated the effect of group on various domains of the self-concept. To assess mediation, Baron and Kenny (1986) argue that firstly there should be a significant relationship between the predictor and outcome variables, secondly that there should be a significant association between mediating variable and both the predictor and outcome variables, and thirdly, the path coefficients for the paths from the predictor
variable to the outcome diminish or become non-significant. Hence, to assess mediation, two SEMs were evaluated: the first evaluated the direct effect of group (predictor variable) on the various domains of the self-concept (outcome variables). The significant paths from group to self-concept were then compared to the paths in the second model in which the silhouette matching task variables were introduced as mediating variables. Both direct and indirect effects of group and body image were assessed in this second model. According to Baron and Kenny (1986), mediation occurs when a previously significant path in the direct model is reduced to non-significance (fully mediated) or is substantially reduced (partial mediation) after the introduction of the mediating variables. Further, from these mediating analyses, the direct effect of group on actual, ideal and discrepancies was examined, to determine whether clinical girls in fact did rate their actuals and ideals differently in comparison to the non-clinical adolescent girls. Like all other SEMs, goodness of fit indices were also assessed to determine whether there was an acceptable fit between the data and the proposed mediating model.

**Follow Up Analyses: Regression Plots**

Follow up regression plots were employed as a method to determine whether clinical and non-clinical girls of equal BMI would rate their actual and ideal selves similarly. These regression plots would illustrate the group differences that might exist between groups for their ratings, controlling for BMI. Furthermore, evaluation of these plots would also indicate if there is an interaction effect (group x BMI) on ratings of actual and ideal body image. BMI was standardised, and three points for BMI were taken, -1, 0 and +1 (indicating low BMI, average BMI and high BMI). Regression points were then calculated on the basis of these three BMI points using
the following formula: \( y = \beta \text{(standardised Group)} + \beta \text{(standardised BMI)} + \beta \text{(standardised interaction)} \).

**Summary of Data Analysis for Studies 1 and 2**

In summary, both Studies 1 and 2 employ sophisticated statistical data analytic techniques to assess both self-concept and body image in relation to self-concept. Firstly, Study 1 focuses on evaluating the multidimensional model of self-concept as measured by the SDQII-S in a sample of clinical and non-clinical girls. To assess the psychometric properties of each of the measurement instruments, CFAs, reliability analyses and Factorial Invariance tests were conducted. Subsequently, to determine the impact of age, group and BMI on self-concept and eating disorder symptomatology, MIMIC models were evaluated. Secondly, in Study 2, in which the self-discrepancy model for body image was evaluated, CFAs were employed to assess preliminary associations between variables. Following this, SEMs were conducted to evaluate the self-discrepancy model in the total (combined sample of adolescent girls). Invariance analyses were also employed to determine whether the path coefficients from the predictor variables to the outcome variables were equivalent across the clinical and non-clinical samples. To evaluate actual ratings, ideal ratings and discrepancies as mediators, a mediating path model was performed. Finally, follow up regression plots were employed to determine the differences between actual ratings, ideal ratings and discrepancies for clinical and non-clinical girls whose BMIs are equal.

Introduction

In the eating disorders field, much of the research to date has been quantitative and there have been relatively few studies that have adopted qualitative methods to understand the disorder (Haworth-Hoeppner, 2000; Hsu et al., 1992). Consequently, there have been very few published studies that have investigated the impact that eating disorders and treatment have had on the daily lives of patients and their families. Understanding patients’ perspectives on treatment, their illness and the impact that the illness has had is imperative for our understanding of both their condition and the coping and support mechanisms/strategies that they employ or need. This is particularly vital for individuals who have been diagnosed with anorexia nervosa, due to the long lasting psychological, physical and health consequences of the disorder (Bryant-Waugh, 1993; Casper & Jabine, 1996; Herpertz-Dahlmann, Wewetzer, Schulz, & Remschmidt, 1996; Herzog et al., 2000; Herzog et al., 1999; Loewe et al., 2001; North, Gowers, & Bryam, 1997; Pike, 1998; Rastam, Gilberg, & Gilberg, 1996; Steinhausen, Boyadjieva, Giogoroiu-Serbanescu, & Neumarker, 2003). Study 3 thus attempted to address this gap in the literature, by exploring some of the experiences of adolescents with anorexia nervosa. From the information obtained in this study, a new instrument that aimed to assist clinicians and researchers to understand the experiences and the support needs of their adolescent patients who have been diagnosed with an eating disorder, was developed and administered.

Study 3 therefore comprised three components: the first component involved the analysis of interview data and the current body of literature to explore the
experiences of patients. From this analysis, themes were developed to form the basis of items for the construction and development and administration of a vignette style questionnaire. The final component of this study involved the analysis of responses from the questionnaire.

Component One: Methodology

Semi-structured interviews were conducted with sixteen adolescent girls with anorexia, focusing on their daily-lived experiences and the developmental history of the eating disorder. More specifically, the interviews explored how the adolescent patients with anorexia nervosa felt that their eating disorder had affected their lives, including the activities that they participate in and their significant relationships. Girls were asked about the types of treatments that they had received and how they felt about these treatments in terms of control and treatment efficacy. Interviewees were also asked about the sorts of things that they found supportive and what they found did not help them at various stages of their eating disorder. The recursive model of interviewing (Minichiello, Aroni, Timewill, & Alexander, 1990) was employed in this series of interviews with patients. This is a strategy in which the interview proceeds along the lines of a conversation. Hence, interviewees were to some extent free to take the interview in any direction they wished. Although there were seven core areas that the interview focused on, this method of interviewing enabled participants to talk about the issues that interviewees found important and significant.

An interview guide that included focus questions was used to explore the areas of interest. Focus questions were used only as prompts, as participants were encouraged to talk about the issues that they felt were most important to them. Interview questions were developed on the basis of identified gaps in the literature
on anorexia nervosa. There were 7 main areas that were identified as significant gaps in the literature, the first being the subjective experiences of patients with anorexia nervosa, the second being the what girls and their parents thought were the causes of AN, biographical experiences of anorexia nervosa, relationships between anorexia nervosa sufferers and their family and peers, the impact of anorexia nervosa on their everyday life experiences. Patients experiences of treatment and support throughout the illness trajectory and reasons for drop-out rates for treatments of anorexia nervosa, were also identified as areas in which there was very little previous research. Hence, the interviews aimed to explore these identified areas (see Appendix 10 for the interview guide used for the interviews).

Although interview questions had been developed, the schedule was used only as a guide, in order to give priority to interviewees’ stories and the issues that they considered important. Hence, the role of the interviewer in these interviews was passive; listening for inconsistencies in what was being said, seeking clarification and explanation of the issues and stories that were being told by the participants.

**Data Analysis**

**Coding of the Interview Data and the Development of a Comprehensive Codebook**

This study involved two different processes of content analysis which formed the basis of a series of vignettes that were constructed for a new instrument investigating the experiences and support needs of young people with anorexia nervosa and other eating disorders. First, a thematic content analysis using the constant comparative method based on the grounded approach (Glaser and Strauss, 1969) was performed on the interview data. Subsequently, the categories and codes
developed from this process we re triangulated against the literature in the anorexia nervosa field in a categorical content analysis (Krippendorff, 1980).

Content analysis is a method that makes it possible to analyse patterns in the data about the behaviours, attitudes and opinions that participants have (Krippendorff, 1980). More specifically for this study, the content analysis allowed the identification of participants’ attitudes and opinions about different aspects of their illness and how they coped with the illness both individually and as a part of a family and social system. In this process of content analysis, the interviews were treated as transparent texts, and thus each girl’s account was treated as an accurate depiction of their illness and their experiences rather than the analysts’ interpretation of their perceptions. Since each interviewee’s perspectives of their illness and how it affected their lives may vary, this analysis enabled the researcher to comprehensively map the diversity of experiences across the sample.

In the process of performing the content analysis, an independent coder was employed to code the data and develop a codebook (see Appendix 11). The development of the codes for the codebook involved a very complex, repetitive and grounded process. The units of analysis for the content analysis were sections of text in sentences, which thus defined and informed the labels and definitions given to the codes developed. The broad categories identified by the coder were put through a rigorous process of defining, refining and comparison, until a clear categorical tree was created, in which clear and descriptive categories were made and linked. This approach to analysing the data was based on the principles of the constant comparative method of the grounded approach.

The grounded approach to data analysis employed, was based on the principles of the grounded theory developed by Glaser and Strauss (1969) in that the
categories and the descriptors developed from the analysis were developed from the data rather than being predetermined theories and ideas, and thus enabled the researcher to generate categories from the language used by participants (Schwandt, 1997). The process employed for this study differs from the grounded theory as discussed by Glaser and Strauss (1969), in that there was no intention to develop new theories and concepts from the coding schemes and the interactions between the codes. In this study, the labels given to the codes were descriptors that encompassed the content of the data within the codes. Thus, the grounded approach encourages researchers to examine data without the bias of their own preconceived theories and ideas.

The first stage of the analysis involved a process of open coding (Glaser, 1978; Glaser, 1992; Miles & Huberman, 1994). This process involves the identification of categories and themes through the close exploration of the data from the interview transcripts. During the open coding process, the data is examined line by line, broken into conceptual chunks in which each chunk is compared to other incidents or chunks formed from the data to determine the extent of similarity or difference. Once concepts are coded, each new chunk is continuously compared to existing concepts to further develop and elaborate the characteristics of existing codes. Names of conceptual codes are constantly revised to reflect the developing data under each of the codes.

To ensure that the codes and their labels developed during the coding process were both reliable and valid, a team of five coders analysed the same pool of data independently. Two subsequent meetings were scheduled at two different stages of the coding process (one at the beginning stages of coding, and one towards the end of coding). This strategy allowed the team of coders to discuss and clarify both the
content and the label given to each code, and thus ensured that when each member of the team subsequently coded the data independently, the results would be similar if not the same (Krippendorff, 1980). This rigorous process thus ensured that an accurate analysis of the texts was performed and that there was inter-rater reliability. Furthermore, the codebook underwent an expert verification process, in which all codes and their definitions were reviewed in the final stages of coding by two experts in the field.

**Content Analysis of the Literature**

An analysis of the literature was also conducted for a process of comparison with the data and findings from the interviews with the adolescent patients. The central aim of this analysis was to determine the unique aspects of experiences and support needs that have not been extensively examined within the body of literature and in existing assessment tools. The analysis of the literature differs from the traditional notion of a literature review in that in a traditional literature review, a critical evaluation of the study itself is performed, and the results are reviewed; in the current content analysis of the literature, an analysis of the substantive themes that emerge from the literature is performed. That is, a conceptual and thematic mapping of the existing body of literature was performed.

A similar process of content analysis was performed on the substantive body of literature in the eating disorders field. For this data, a categorical content analysis was performed. As opposed to the method of the constant comparative grounded approach of content analysis employed when analysing the interview data, in categorical content analysis, the categories developed previously from the interview data were superimposed on the literature. As a result of working with varying sources of information and data (i.e. data obtained from interviews with adolescent
anorexic girls, and literature from a variety of disciplines, addressing a broad range of interest groups including medical and psychological researchers and clinicians, nurses and social workers), some of the key categories and issues that emerged from the literature were not present in the data obtained from patients. In these cases, new codes and categories were developed to encompass those substantive topics raised by the authors that were not raised by the interviewees.

**Triangulation of Codes for the Development of a New Instrument**

Category lists developed from the data and the research literature were compared to make a single list that encompassed the key issues and topics regarding the experiences and support needs of girls with anorexia nervosa. Furthermore, a frequency analysis for the codes was performed for the data obtained from the interviews with adolescent patients. A frequency analysis is a method in which the regularity that a particular topic occurred within codes is recorded.

A key feature of the constant comparative method is that it encourages the researcher to explore the similarities and differences in the characteristics of the categories that arise from the differing sources of data, in this case, the interview transcripts and the body of literature. Thus, those categories and issues that emerged from the interview data but were not present in the literature, and were frequently discussed by the interviewees, were deemed to be significant gaps in the literature and thus, explored further in the new instrument. In contrast, those categories that were in literature but were not common in the interview were considered to be of less comparative importance, as the aim of the questionnaire was to assess the issues associated with eating disorders that have not been adequately covered by existing clinical tools and the substantive body of literature in the field. These results formed
the basis for the items that were included in the newly developed vignette style questionnaire.

*The Construction of Vignettes*

Vignettes have frequently been employed as a useful methodology to explore and assess respondents’ attitudes and beliefs about illness (physical and mental) and coping strategies in fields such as mental health, medical research and social science (Arslanian-Engoren, 2002; Hughes, 1998; Pendleton, Cavalli, Pargament & Nasr, 2002; West, 1982). The use of vignettes is a qualitative technique (Pendleton et al., 2002) that is often employed to illustrate individuals within situations and circumstances, and presented in a narrative, story-like form (West, 1982; Pendleton et al., 2002; Hughes, 1998; Miles & Huberman, 1994). Vignettes can be described as short, sometimes fictitious scenarios that researchers may develop from a variety of sources including previous research, and clinical case histories (Goldenberg, Anderson, Willimack, Freedman, Rutchik et al., 2002; Hughes, 1998).

Vignette techniques have been cited as one of the most commonly used and best methods to elicit respondents’ opinions, attitudes, perceptions and predictions about various phenomena, certain experiences that they have had, or circumstances that they may experience (Hughes, 1998). Vignettes are constructed in a method that allows the respondents to identify and respond to situations that are close to real life rather than responding to abstract concepts that are usually presented in questionnaires (Morrison et al., 2002). As the new questionnaire for this study aimed to explore and identify the individual experiences, feelings, perspectives and needs of young women diagnosed and treated with anorexia, the vignette technique was deemed to be the most suitable and effective format for the questionnaire.
Each vignette for the questionnaire was developed as a fictitious scenario constructed using multiple interview extracts and based on the categories formed through the process of data triangulation. Furthermore, each of the vignettes were written as concise narratives that reflected a particular issue that emerged from the data within the codes from the previous analyses regarding the support needs and the experiences of patients with anorexia nervosa. Each vignette thus attempted to capture the totality of a certain experience and the complexity of the girls’ feelings and issues regarding aspects of their eating disorder. Furthermore, the vignettes were written in first person so as to make the stories appear more real to the respondents.

Additionally, a 3-point Likert scale in which participants were asked to indicate whether the scenario was very much like their own experiences, whether it was somewhat like what they had experienced, or not at all like what they had experienced was developed to follow each of the vignettes. Respondents were subsequently asked to describe what was similar or different about their own experiences in an open-ended response format. Having open-ended responses further supports the objective of employing the vignette methodology in that respondents are able to actively engage with the vignette, and subsequently to reflect on their own experiences. Additionally, it allows the respondent to freely express their experiences and opinions about their experiences using their own language.

It was anticipated that by employing this format for the questionnaire, the responses to each questionnaire item would further inform research and treating clinicians as to what features of treatment, support and experiences were common amongst a wider population of young women affected by eating disorders. Moreover, if this instrument were used within the clinical setting, the format might
increase the rapport and connectedness between the clinician and the patient. See Appendix 12 for the Experiences and Support Needs Questionnaire.

Administration of the Experiences and Support Needs Questionnaire

Method

For this study, a broader sample of adolescents with eating disorders was utilised. A master list of potential participants and postal addresses was provided by the two participating eating disorder clinics. This list consisted of patients who had either received an assessment for an eating disorder at the clinic or had received treatment for an eating disorder in the last decade, including both inpatients and outpatients who were currently being treated for an eating disorder. The database contained only the names and contact details of the patients with eating disorders, and thus no details of the specific diagnoses they had received could be accessed. The rationale for only looking up patients who had received diagnosis or treatment for an eating disorder over the last decade was for practical and logistical reasons; the clinic database records have only been kept for the last decade, and as no permission was sought to access archived medical records it was difficult to obtain the details of patients who had been diagnosed or treated before the previous decade.

Although this dissertation is primarily concerned with adolescent girls with anorexia nervosa, as there was no process by which patients’ diagnoses could be identified without accessing individual medical records, patients with bulimia and eating disorders not otherwise specified were also contacted and included in this study (for subsequent analyses however, a question that asked participants to identify the diagnosis that they had received [if any] was included on the
demographics questionnaire). Once postal addresses were obtained, information and questionnaire packages were sent to all potential participants.

A total of 322 questionnaires were sent out to potential participants in the first mailout of the questionnaire. Participants were asked to return the questionnaire and consent forms within 3 weeks of receiving the package. Of these 322 packages, 24 packages were returned with wrong address marked on them (accounting for 7.45% of the total packages), and 52 completed questionnaires were returned (16.15% of the total packages that were sent to potential participants). A second mailout containing a reminder letter, and questionnaire package was carried out a month later. A further 32 completed questionnaires were returned (therefore a total of 84 completed surveys, accounting for 28.19% of valid packages). Twenty two phone calls from potential participants were also received, in which potential participants explained their various reasons for not wanting to participate in the research. These reasons ranged from participants feeling that they were not ready to go back and think about their eating disorder ($n = 5$), or feeling that the eating disorder clinics had not helped them, and that they did not want to be a part of any research associated with those clinics ($n = 5$). Some potential respondents also stated that they had originally been misdiagnosed with an eating disorder and cited that they had later received a different diagnosis and thus did not feel that they needed to be a part of the current research project ($n = 4$). Some potential participants ($n = 7$) did not provide any reason for not wanting to participate. One parent phoned the researcher and explained that her daughter had passed away four years earlier.

Additionally, one family returned an incomplete questionnaire attached to which they attached a note, detailing that they had completed the demographics
questionnaire on behalf of their daughter; however, their daughter did not want to complete the rest of the questionnaire “for her own reasons”. For the analysis of data for this study, this respondent was not included in the analysis. From the second bulk mailout, a further 30 questionnaire packages were returned with addresses where the targeted recipients were no longer residing. Hence, the overall response rate for the questionnaire was 34.15% (total sent out with valid addresses was 246 packages, and a total of 84 completed questionnaires were returned).

**Questionnaire Respondents: Clinical Sample 3**

The total sample of questionnaire respondents consisted of girls and young women who had either been assessed or treated for an eating disorder during their adolescence by the teams at one of the participating eating disorder clinics. The sample included girls who were currently receiving treatment or had been involved in the treatment program at some stage in the last decade \((n = 84)\). All participants were female and aged between 11 and 23 years \((M = 17.43, SD = 2.46)\). This was thus a comparable sample of participants to the interview sample whose experiences formed the basis of the questionnaire \((M = 16.44 \text{ years}, SD = 1.93)\). Of these respondents, 62 girls had received a diagnosis of anorexia nervosa; 13 girls had received a diagnosis of bulimia nervosa. Additionally, 4 participants indicated that they had been diagnosed with both forms of eating disorders over the duration of their illness. Although the number of these respondents is small, this perhaps demonstrates that bulimia nervosa and anorexia nervosa as eating disorders are not discrete disorders, but rather lie on a continuum, with bulimic symptoms at one end of the continuum, and anorexic behaviours and symptoms at the other (Bulik et al., 1997). Of the 84 participants, one respondent indicated that she had been diagnosed with Eating Disorders Not Otherwise Specified (EDNOS). However, 4 of the
questionnaire respondents did not indicate their diagnosis on their questionnaire, but did indicate that they had received a diagnosis.

Along with various other background information details, respondents were asked to provide details of their height and weight, so that their BMI could be calculated. However, of the 84 participants that responded to the questionnaire, only BMIs for 69 participants could be calculated, as some respondents did not indicate either their height or their weight, or both. Of the 15 respondents who did not indicate their height or weight (or both) the majority of this population ($n = 11$) were girls who had been diagnosed with anorexia nervosa. Only one of the participants who did not provide details of their height and weight was bulimic, whilst the remaining participants ($n = 3$) had been diagnosed with both anorexia and bulimia. This pattern is very interesting in that perhaps, these participants did not want to disclose their height and weight details because they are still very sensitive about this particular issue, or as one of the participants indicated on her questionnaire: “I have issues with stating my weight. It terrifies me”. Another of the participants explained on her questionnaire in response to the question about how much she weighed “don’t know (hate scales)”. It may also be possible that these girls did not indicate their height and weight because they are still in denial and they are not happy with what they weigh, and in writing it down they are confirming the very thing that they are trying to avoid or deny. Perhaps these respondents are still in a position of being of very low weight, and do not want anyone to know what they weigh in fear that if someone found out, they would make them try and put weight on (one respondent indicated in her questionnaire, that she still employed bulimic strategies to lose weight. However, everyone around her thought that she had recovered and no longer purged, or took laxatives). An alternative explanation could
also be that girls had gained weight, were ashamed of what they now weighed, and thus did not want to report their weight. Two of the respondents who did not indicate their weight, explained that they now did not need to weigh themselves because they were now healthy. For example, one participant explained on her questionnaire “I choose not to weigh myself anymore, but I’m healthy”.

Of the total sample that provided their height and weight details ($n = 69$), the average BMI for the girls was slightly below the normal healthy range ($M = 19.45$ kg/m$^2$, $SD = 3.26$), with respondents’ calculated BMIs ranging from well below the minimum healthy height and weight ratio for adolescents, ($BMI = 13.34$kg/m$^2$), to well within the overweight range for adolescents, ($BMI = 29.14$kg/m$^2$). Interestingly, the respondent with the lowest BMI had been diagnosed with anorexia nervosa, but the participant with the highest BMI was also diagnosed with anorexia (despite presently being overweight). Supporting much of the literature in the field, calculated BMIs for participants diagnosed with anorexia were found to be lower than the calculated ratios for bulimic participants (Russell, 1979). For the patients who had been diagnosed with anorexia at some stage of their illness trajectory ($n = 55$), the average BMI was $19.21$kg/m$^2$ ($SD = 3.32$) as compared to the respondents who had been diagnosed with bulimia ($n = 12$), whose average BMI was $21.24$kg/m$^2$ ($SD = 2.10$) (see Table 4.4).
Table 4.4
The average BMI for the Respondent Populations

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of participants</th>
<th>Mean BMI (SD) kg/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sample (valid BMI)</td>
<td>69</td>
<td>19.45 (3.26)</td>
</tr>
<tr>
<td>Participants diagnosed with anorexia nervosa</td>
<td>55</td>
<td>19.21 (3.32)</td>
</tr>
<tr>
<td>Participants diagnosed with bulimia nervosa</td>
<td>12</td>
<td>21.24 (2.10)</td>
</tr>
</tbody>
</table>

Of the 69 participants who had a valid BMI (that is, those that indicated their height and weight), 30.4% of those had a BMI within the healthy range (20-25 kg/m², as cited in World Health Organization, 1995), whereas 44 out of the total 69 (63.77%) had a calculated BMI below the minimum healthy weight range. The remaining 4 participants had a calculated BMI within the overweight range (World Health Organization indicates that a BMI of 25 and 30 kg/m² is within the overweight range for adolescent girls), with a mean BMI of 27.65 (SD= 1.58).

Furthermore, of the total sample of respondents, only 34.5% of them indicated that they were recovered from the eating disorder that they had been diagnosed with. Forty four percent indicated that they have improved their condition, however, were not yet recovered, and 10.7% indicated that their condition was static and had not changed. Six percent of the respondents indicated that their condition was worse. This data emphasises the chronicity of eating disorders in
adolescents, highlighting that length of illness is often long and recovery rates low. This coincides with literature which has estimated that the average duration of illness is approximately six years (Herzog, Schulberg, & Deter, 1997).

Data Analysis for Questionnaire Responses

Analysis of the Quantitative Responses to the Questionnaire

Firstly, a frequency analysis was performed for each of the vignettes in the questionnaire, based on the Likert scale responses given by the respondents, indicating whether their own experiences were very much like those portrayed in the vignettes, somewhat like or not at all like their experiences. These analyses were conducted to explore patterns within the response data. In performing the frequency analysis, several different data filters were developed, allowing exploration and differentiation between the responses from different identified sub samples of the population who responded to the questionnaire. For example, frequencies of responses to the vignettes could be compared for girls who had received a diagnosis of anorexia or bulimia, girls who had received inpatient care, and those who had not. Furthermore, patterns within the data were explored based on the BMI range of the participants, to determine whether the frequencies of experiences could be explained by how much the girls actually weighed. The data filters employed are presented below in Table 4.5, along with explanations of the filter, and descriptions of the different sub samples.
Table 4.5

*Filters Employed for the Frequency Analysis of Vignette Responses, and the Descriptive Statistics for the Different Sub Samples.*

<table>
<thead>
<tr>
<th>Filter</th>
<th>Explanation of filter</th>
<th>Number of participants</th>
<th>Mean Age (SD)</th>
<th>Mean BMI (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Total sample of participants</td>
<td>84</td>
<td>17.43 (2.46)</td>
<td>19.45 (3.26)</td>
</tr>
<tr>
<td>Valid BMI</td>
<td>All participants who had indicated their height and weight on the demographics form (not including those with missing weight and height data)</td>
<td>69</td>
<td>17.43 (2.46)</td>
<td>19.45 (3.26)</td>
</tr>
<tr>
<td>BMI&lt;25</td>
<td>This population includes all those participants whose BMI is lower than the minimum range for overweight, which authors have indicated is 25kg/m².</td>
<td>65</td>
<td>17.12 (2.41)</td>
<td>18.94 (2.59)</td>
</tr>
<tr>
<td>I/P</td>
<td>Those participants who had a valid BMI and who had, at some stage of their illness, received inpatient treatment</td>
<td>47</td>
<td>17.28 (2.56)</td>
<td>18.75 (2.97)</td>
</tr>
<tr>
<td>No I/P</td>
<td>Those participants who had a valid BMI and who had never received inpatient care</td>
<td>22</td>
<td>16.73 (2.31)</td>
<td>20.77 (2.70)</td>
</tr>
<tr>
<td>AN</td>
<td>Those patients who had a valid BMI and who had received a diagnosis of anorexia at some stage of their illness trajectory</td>
<td>55</td>
<td>17.13 (2.50)</td>
<td>19.21 (3.32)</td>
</tr>
<tr>
<td>BN</td>
<td>Those participants who had a valid BMI and who had received only a diagnosis of bulimia nervosa</td>
<td>12</td>
<td>18.00 (1.86)</td>
<td>21.24 (2.10)</td>
</tr>
<tr>
<td>BMI Category</td>
<td>Description</td>
<td>n</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>BMI &lt; 20</td>
<td>Those participants who had a valid BMI and who had a BMI below the minimum healthy range of 20 kg/m²</td>
<td>44</td>
<td>16.64 (2.54)</td>
<td>17.46 (1.47)</td>
</tr>
<tr>
<td>20 &lt; BMI &lt; 25</td>
<td>Those participants who had a calculated BMI within the healthy adolescent range (between 20 and 25 kg/m²)</td>
<td>21</td>
<td>18.14 (1.74)</td>
<td>22.06 (1.34)</td>
</tr>
<tr>
<td>BMI &gt; 25</td>
<td>Those participants with a BMI within the overweight range (greater than 25 kg/m²)</td>
<td>4</td>
<td>19.25 (2.36)</td>
<td>27.65 (1.58)</td>
</tr>
</tbody>
</table>

Note: Total = total sample of respondents, Valid BMI = respondents who indicated their weight and height, BMI < 25 = those respondents who had a calculated BMI of less than the lower limit for overweight, I/P = respondents who have received inpatient treatment, AN = respondents who have been diagnosed with anorexia nervosa, BN = respondents who have been diagnosed with Bulimia Nervosa, BMI < 20 = respondents who had a calculated BMI of below 20 kg/m² (lower limit for healthy BMI), 20 < BMI < 25 = respondents with calculated BMI within the healthy range, BMI > 25 = respondents with calculated BMI within the overweight range.

Analysis of Open-ended Questionnaire Responses

A thematic content analysis was employed to explore the data obtained from the vignette responses regarding treatment and the issues that surround treatment. This form of content analysis was inductive, and involved identifying the themes that were present in the response data, rather than working from previously developed themes and categories (Ezzi, 2003). Although no a priori themes were developed, each vignette was explored separately, with vignettes being organised based on whether respondents indicated whether their experiences were very much like, somewhat like or not at all like what they had experienced. This process thus allowed the comparison of the themes and characteristics that were similar and different for the three different groups of responses.
Similar to the coding process for the interview data and the body of literature, a codebook was developed in which the codes that emerged from the data were iteratively defined and altered, based on the data that made up that particular code. However, in this case, analysis involved developing theoretical codes; that is, once codes had been defined from the data using a grounded theory approach, they were related and discussed with regard to the body of eating disorders literature. Hence, both theoretical and clinical implications could also be identified throughout the coding and analysis process.

Furthermore, to ensure that the codes developed were appropriately defined and labelled, all codes underwent an expert checking process in which a member of the research team checked and coded the data, and their corresponding labels. This process ensured that the codes were both reliable and valid. In cases where there were disagreements between the independent coders, rationales and justifications would be discussed to determine the best code for the data.

For the purposes of this thesis and to keep the current analysis focused, only selected vignettes were analysed (see Table 4.6; see also Appendix 13 for all vignettes and associated response patterns). These included vignettes that concerned treatment and more specifically, patients’ perceptions of various aspects of treatment, the environment in which they have been treated, the treatment teams that they have had contact with, and their relationships with peers within the treatment environment. Additionally, vignettes concerning the impact of eating disorders on parental and peer relationships were also analysed. These were considered important for this thesis because they elucidate aspects of the support needs of sufferers of eating disorders that have not been explored before. Social and developmental psychologists have long argued that parents and peers form the most important
support network for individuals, particularly throughout the adolescent developmental period (Gerner & Wilson, 2005; Frey & Rothlisberger, 1996; Wylleman, 2000). When adolescents are diagnosed with an eating disorder, their support network is presumably extended to include the people and the procedures involved in the treatment of their disorder. Furthermore, because treatment and the individuals that are involved in providing treatment have such a prominent role in the lives of the sufferer, it is important to understand patients’ perceptions of the function and support provided by these treatment providers.

To ensure that the data analysis was thorough and methodologically rigorous, an additional keyword search was performed to determine whether respondents had discussed treatment and support related issues in other areas of the questionnaire. In the event that respondents had detailed support needs and treatment needs in other sections of the questionnaire, these responses were also coded. This process ensured that all respondents’ perceptions of treatment and support needs were captured in the analysis.

Summary of Study 3

In sum, this third and final study was to address current limitations within the literature regarding the experiences and perspective of adolescent patients with eating disorders. This study consisted of three components, in which qualitative techniques were employed to firstly analyse interview data and the current body of literature to develop codes and themes which formed the basis for the development of a vignette style questionnaire aimed to explore the experiences and support needs of young people with eating disorders. The third and final component of this study involved the administration of the questionnaire and the analysis of the questionnaire responses using frequency and content analysis.
Summary

The three studies were developed to address the specific aims and hypotheses previously discussed in chapters 2 and 3. This research thus consisted of three different studies that explored various aspects of anorexia nervosa. The first study was designed to explore the multidimensional model of the self-concept in clinical and non-clinical samples, and further to determine the impact of group, age and BMI on eating disorders symptomatology and self-concept. The second of the three studies examined the self-discrepancy model of body image in clinical and non-clinical populations of adolescent girls, in which actual ratings of body image, ideal ratings of body image and discrepancies were examined in terms of the relation to various self-concept domains. Finally, the third study explored experiences and support needs of adolescent girls with anorexia nervosa, employing rigorous qualitative techniques. The purpose of this chapter was to provide detail regarding the methodology employed for the collection of the data for this research and furthermore describe the different procedures utilised for the analysis of the data.
<table>
<thead>
<tr>
<th>Vignette number</th>
<th>Text</th>
<th>Original theme</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>I have lost a lot of friends through this. I just don’t feel like socialising and don’t feel that anyone including my friends really understands me anymore</td>
<td>Relationships with peers</td>
<td>Social isolation and relationships with peers</td>
</tr>
<tr>
<td>4</td>
<td>Other girls can influence you a lot when you are a bit down. And sometimes they are really competitive in that they want to be the lightest and skinniest. Sometimes it seems that if you have out on some weight they think that you are weak and don’t want to talk to you. They try and teach you the tricks and stuff and then you just don’t get better</td>
<td>Peer relationships</td>
<td>Competition with other girls</td>
</tr>
<tr>
<td>5</td>
<td>My eating disorder sometimes makes me do things that I wouldn’t usually do, or don’t want to do. When the eating disorder is at its strongest, I don’t have any control over what I’m doing; it’s like having someone else controlling me</td>
<td>Control</td>
<td>Control</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Social relationships</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ED having the power and the control</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ED as a part of them vs ED as separate identity</td>
</tr>
</tbody>
</table>
6 I do not want to change and get better, but I’m scared that I will lose everything that I have worked so hard for, all the dieting all the exercising. I’m scared that all that effort will go to waste if I start to eat again 

Fear of changes and recovery

Fear

7 My current psychiatrist/psychologist has time for me, and s/he puts in the effort. S/He understands me; I like that

Treatment

Treatment

8 The doctors don’t recognise that we are all different people, and that different things work for different people. They treat me like everyone else with an eating disorder and I get really upset about that, because I am not the same as them

Treatment

Individuality

9 It doesn’t matter where you go for treatment, they set these goals for you, target weights and menu plans … but I need them to be a little bit more flexible, give me a bit of variety with meal plans and schedules, and give me options that I can choose from. I want to have some control over what is happening to me and I need realistic goals.

Treatment

Treatment

10 My relationship with my parents got worse because of the eating disorder. They didn’t understand what I was going through and didn’t know how hard it was for me. They thought that it would be simple to get better, because all I had to do was eat. They kept saying, “All she needs to do is eat, just give her the food and make her eat it”. Like it was really easy for me. But later they went and got some books and talked to some friends about the disorder, and by finding out more about the disorder, it made it a lot easier for them and me because it helped them understand how difficult it was for me, even the little things. It seemed to make them

Family relationships

Family relationships
more understanding and helpful.

14 I’m a bit worried about how my friends will treat me and how things will be at home. I know that everyone will be a bit more cautious around me, I just hope that they will accept me and that they will treat me the same. I just need them to be themselves and treat me the same as always.

Peer relationships Social relationships Fear
Treatment/ leaving the treatment env Constructions of self as anorexic

16 It’s not really about whether or not it’s your choice to have the illness, when it comes to getting better, it’s about being willing to get better. You can go to as many hospitals, psychiatrists and doctors as you like, but until you are ready to get better, nothing works. I don’t really know what it is, it’s just like you have to make the decision to get better; it’s a mental and emotional thing.

Recovery Recovery, choice? Do treatments work?

20 What types of treatments have you found most helpful for you to get better? Why have you found these treatments helpful?

Treatment
CHAPTER 5

RESULTS 1: GENERALISABILITY OF THE MULTIDIMENSIONAL SELF-CONCEPT

Introduction

In recent years, the usefulness of the multidimensional model of the self-concept has become well established in most areas of psychology, particularly in the educational and sports psychology fields (for a more detailed review see chapter 1). However, the mental health sector has yet to adopt the more descriptive multidimensional model of self-concept to assess how individuals with psychological disorders evaluate themselves across various contexts and situations. To date, most of the mental health sector, including the eating disorders field, has evaluated the self in terms of self-esteem and global self-worth, thus only evaluating how individuals see themselves in general terms. This study attempted to bridge this gap in the research by adopting the multidimensional perspective for the assessment of adolescents with anorexia nervosa.

The purpose of this chapter is to present the results obtained from Study 1, examining the multiple dimensions of the self-concept in two adolescent samples of
girls, a clinical sample of girls with anorexia nervosa, and a non-clinical sample of
girls. More specifically, this study attempted to:

1. Determine whether the SDQII-S is a reliable measure of the multiple
dimensions of self-concept for clinical and non-clinical adolescent girls.
2. Examine the psychometric properties of the SDQII-S by determining whether
the 11-factor structure of the multiple dimensions of self-concept could be
generalised to a clinical sample of 76 adolescents diagnosed with anorexia, and
whether the psychometric properties of the instrument are retained for both
samples of adolescent girls
3. Evaluate whether the EDI-2 is a psychometrically sound and reliable measure
of eating disorder symptomatology for adolescent girls with anorexia nervosa,
and girls without anorexia nervosa
4. Investigate the self-concept profiles of a clinical sample and a sample of 829
female secondary school students, to determine whether there are any
differences between the two groups.
5. Determine the impact of age and BMI upon the self-concept profiles of
adolescent girls.
6. Determine the impact of diagnosis, age and BMI upon eating disorder
symptomatology as measured by the scales of the EDI-2.
7. Examine the differential relationships between self-concept domains and eating
disorder symptomatology.

**Overview of analyses**

Analyses were conducted firstly to examine the psychometric properties of
SDQII-S and the EDI-2 used in Studies 1 and 2 of this dissertation. More specifically,
reliability analyses, assessing the internal consistency of the items within the scales,
and factor analytic investigations, evaluating the generalisability of the a priori factor structures for the instruments conducted will be discussed.

Previous studies have shown that the psychometric properties of the EDI-2 and the SDQII-S are strong in terms of reliability and factor structure (see methodology chapter for more details). Coefficient alphas for each of the instruments’ subscales were used to estimate internal consistency. Reliability coefficients were calculated separately for the two adolescent samples of girls (clinical and non-clinical). Furthermore, to assess the psychometric properties of the instruments, the factor structures of each instrument were evaluated using confirmatory factor analysis (CFA). For each of the CFA analyses, items should only load on the factors that they are designed to measure and the different factors should be clearly distinguishable (see chapter 4 for a detailed description of the methodology and the analyses employed for Study 1).

Invariance CFAs were also conducted to examine whether the factorial structure for each of the instruments was invariant between the two samples. These analyses were necessary to ensure that the instruments were appropriate for use with both clinical and non-clinical adolescents, and that the same constructs were being measured for the two different samples. Five models were tested in which aspects of the factor structure were systematically held constant across the two groups. Fit indices (TLI, CFI, and RMSEA) were assessed for the models.

Subsequently, MIMIC models (see earlier discussion in chapter 4) were developed to determine the effect of BMI, group membership and age on the various domains of the self-concept and eating disorder symptomatology. In these analyses BMI, group (clinical and non-clinical), and age were entered into the model as observed variables. Additional interaction terms were also formed for age x BMI and
BMI x group, which were computed through multiplication of zero centered main effects (based on the recommendations of Aiken & West, 1991).

SEM analyses were also performed to determine the mediating/moderating effect of self-concept on eating disorder symptomatology. Furthermore, profile analyses were conducted to determine whether the self-concept profiles of girls with anorexia nervosa differed from girls who did not have anorexia.

The Structure and Measurement of the Multidimensional Model of Self-concept: Psychometric Properties of the SDQII–S

Reliability Analyses for the SDQII-S

The SDQII-S developed by Marsh (1992) was employed in this study to assess multiple facets of the self-concept of adolescent girls: one sample who had received a medical diagnosis of anorexia nervosa, and another sample of non-clinical adolescent high school girls (see chapter 4 for more details on sample demographics). Prior research has indicated that the SDQII-S is one of the most reliable and valid instruments that measures the multiple dimensions of self-concept (Byrne, 1996; Marsh et al., 2004). As such it was hypothesised that the SDQII-S would be able to reliably assess the multiple facets of the self, in both the clinical and the non-clinical samples (Hypothesis 1.1.1).

Reliability is a measurement of the consistency that an instrument has (Anastasi & Urbina, 1997). The primary method of estimating reliability is by assessing the internal consistency of the instrument. This is generally shown as Cronbach’s α. Various theorists have tentatively suggested that a value of 0.70 or above is an acceptable level of reliability (Anastasi & Urbina, 1997; Hills, 2003).

For the total sample, internal consistency estimates for each of the self-concept scales (as measured by the SDQII-S) were shown to be consistently high, and
comparable to recent estimates of internal consistency for adolescents (Marsh et al., 2004). Further highlighting the reliability of the SDQII-S, the Cronbach’s $\alpha$ estimates for the clinical sample of adolescent girls were also shown to be consistently high, with estimates ranging from 0.78 (for the Honesty and trustworthiness scale) to 0.93 (for the Same Sex relations scale and the Math self-concept scale). Similarly, results of the reliability analysis for the non-clinical sample showed high levels of internal consistency for the scales of the questionnaire, with estimates ranging from 0.79 (for the Honesty and Trustworthiness scale) to 0.91 (for the Math and Verbal self-concept scales; see Table 5.1 for Cronbach’s $\alpha$ estimates for the SDQII-S and previously published estimates).
Table 5.1

*Cronbach’s Alpha Values for the SDQII-S Scales for both the Clinical and Non-Clinical Sample of Adolescent Girls, and Previously Published Estimates*

<table>
<thead>
<tr>
<th>Self-concept Scale</th>
<th>α</th>
<th>α</th>
<th>α</th>
<th>α</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Marsh et al., 2004 (n = 9,134)</td>
<td>clin (n = 75)</td>
<td>non-clin (n = 823)</td>
<td>total (n = 898)</td>
<td></td>
</tr>
<tr>
<td>Phys</td>
<td>.83</td>
<td>.86</td>
<td>.86</td>
<td>.86</td>
<td>4</td>
</tr>
<tr>
<td>Appr</td>
<td>.88</td>
<td>.91</td>
<td>.87</td>
<td>.88</td>
<td>4</td>
</tr>
<tr>
<td>Osex</td>
<td>.85</td>
<td>.92</td>
<td>.80</td>
<td>.82</td>
<td>4</td>
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<tr>
<td>Ssex</td>
<td>.79</td>
<td>.93</td>
<td>.82</td>
<td>.84</td>
<td>5</td>
</tr>
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<td>Prnt</td>
<td>.84</td>
<td>.87</td>
<td>.85</td>
<td>.86</td>
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<tr>
<td>Hons</td>
<td>.80</td>
<td>.78</td>
<td>.79</td>
<td>.79</td>
<td>6</td>
</tr>
<tr>
<td>Emot</td>
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<td>.86</td>
<td>.82</td>
<td>.83</td>
<td>5</td>
</tr>
<tr>
<td>Math</td>
<td>.90</td>
<td>.93</td>
<td>.91</td>
<td>.91</td>
<td>4</td>
</tr>
<tr>
<td>Verb</td>
<td>.90</td>
<td>.91</td>
<td>.91</td>
<td>.91</td>
<td>5</td>
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<tr>
<td>Schl</td>
<td>.84</td>
<td>.89</td>
<td>.87</td>
<td>.88</td>
<td>4</td>
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<tr>
<td>SE</td>
<td>.82</td>
<td>.92</td>
<td>.87</td>
<td>.88</td>
<td>6</td>
</tr>
</tbody>
</table>

*Note.* α = Cronbach’s α estimate, Clin = Clinical sample, non-clin = non-clinical sample, total = total sample, Phys = Physical Ability, Appr = Physical Appearance, Osex = Opposite sex relations, Ssex = same sex relations, Prnt = Parent relations, Hons = honesty and trustworthiness, Emot = emotional stability, Math = Math self-concept, Verb = verbal self-concept, Schl = general school self-concept, SE = self-esteem, Avg Factor Loading = Average Factor Loading for each scale.
These results indicate that the psychometric properties of the SDQII-S for both the clinical and the non-clinical sample of adolescents in this study are comparable to those, both of the original, longer version of the instrument, and previously published coefficients for the current short version of the questionnaire (see Marsh et al., 2005). Hence, based on these reliability estimates, the SDQII-S is a reliable instrument for the assessment of multiple dimensions of self-concept for both non-clinical and clinical populations of adolescent girls, thus supporting Hypothesis 1.1.1.

Factor Structure of the SDQII-S: Confirmatory Factor Analysis

A primary aim of the current study was to determine whether the 11-factor a priori model of the multidimensional model of self-concept (as measured by the SDQII-S) would provide a good fit to the data obtained from the two different samples of adolescent high school girls. It was predicted that the 11-factor model of the self-concept would be clearly identified from the responses from the overall sample and the non-clinical sample of adolescent girls (Hypotheses 1.1.2 and 1.1.3). Furthermore, as very little research has been conducted examining the multidimensional model of self-concept, as measured and assessed by the SDQII-S within clinical populations, a research question was developed to assess whether the 11-factor structure of the SDQII-S would also provide a good fit to the clinical data (Research Question 1.1.1). To evaluate these hypotheses and research questions, three CFA models were evaluated: one for the total sample, one for the clinical sample and finally, one for the non-clinical sample of adolescent girls. As highlighted earlier in the methodology chapter, for each of these models, variables were only allowed to load on those factors that they were designed to measure.
CFA for the SDQII-S: Total sample

An initial CFA based on responses to 51 SDQII-S items was conducted on the full sample of adolescents, to determine whether there was a good fit between the data and the 11-factor a priori structure for the SDQII-S (at the item level) (Hypothesis 1.1.2). The factor loadings indicated a good fit between the data and the 11 factors of the SDQII-S, with each variable loading highly on the factors it was designed to measure (overall average factor loading= .76). Furthermore, for the total sample analysis, the goodness of fit indices indicated an excellent fit (Chi-square= 2936.52, df= 1169, RMSEA= 0.041, TLI=.980, CFI=.980).

The analysis also revealed that the correlations between each of the self-concept domains ranged from $r =.03$ to .77, thus highlighting the distinctiveness of the factors measured by the SDQII-S. Furthermore, the results indicate that the highest correlations existed between self-esteem and other self-concept scales, hence supporting previous research that highlights the global nature of the self-esteem factor (Marsh, Parker, & Barnes, 1985). Furthermore, the factor correlations for the total sample also provided support for the hierarchical structure of the self-concept as proposed by the Marsh/Shavelson model (Marsh & Shavelson, 1985) which hypothesizes that the non-academic scales of the self-concept should be generally more correlated with each other, but not highly correlated with the academic dimensions of the self-concept. The correlations between the 11 factors indicated that much as the model hypothesizes: math and verbal self-concepts were highly correlated to general school self-concept, but not highly correlated to each other (see Table 5.2). Additionally, in support of previous literature, the correlations indicate that physical appearance (Marsh, Craven & Debus, 1998) and school self-concepts (Marsh et al., 2005) are the most important dimensions in determining global self-
esteem (r = .70 for physical appearance and self-esteem and r = .77 for school self-concept and self-esteem).

Table 5.2

*Factor Loadings and Correlations for SDQII-S (Total Sample)*

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Phys</th>
<th>Appr</th>
<th>OSex</th>
<th>SSex</th>
<th>Prnt</th>
<th>Hons</th>
<th>Emot</th>
<th>Math</th>
<th>Verb</th>
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### CFA for the SDQII-S: Clinical Sample

Although the total sample CFA for the instrument showed a good fit between the data and the a priori model at the item level, as a result of the size of the clinical sample ($n = 76$), a standard CFA in which each of the individual response items would be entered into the CFA model as single indicator variables could not be performed, as the sample size of the sample is small relative to the number of measured parameters (see chapter 4 for more detail). For this reason, items were constructed to form item parcels. More specifically, item parcels were constructed on the basis of corrected item total correlations (calculated in the reliability analyses for each of the scales) and were parcelled so that the average item correlations were equivalent. Hence, for each latent variable (factor), two items parcels were formed. Therefore, for each of the 11 self-concept factors, there were two indicator variables, consisting of parcels of items (each parcel containing between 2 and 4 SDQII-S items). As highlighted earlier in Chapter 4, the analysis of item parcels can be beneficial for several reasons; firstly, it helps overcome the problems that are associated with small sample sizes, particularly when the sample size is less than 100, and secondly, item parcels can be less susceptible to idiosyncratic variation, more normally distributed and more reliable than individual items (Hau & Marsh, 2004; Marsh, 1999). Furthermore, given that initial analyses for the total sample based on

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**Note:** Phys = Physical Ability, Appr = Physical Appearance, Osex = Opposite sex relations, Ssex = same sex relations, Pprt = Parent relations, Hons = honesty and trustworthiness, Emot = emotional stability, Math = Math self-concept, Verb = verbal self-concept, Schl = general school self-concept, SE = self-esteem, Avg Factor Loadings = Average Factor Loadings. $r < 0.03, p > .05$. 

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responses to individual items indicated that there was a good fit between the data and the a priori factor structure, there is some justification that parcelling the items would be acceptable for the analysis.

The CFA for the clinical sample of adolescent girls using the parceled items revealed that there was a good fit between the a-prior factor structure and the response data from the clinical sample of adolescents (Chi-square = 291.10, df = 165, RMSEA = .089, TLI = .910, CFI = .940). Similarly, the factor loadings obtained from the analysis indicated that the parcels loaded highly on the factors that they were designed to measure (average factor loading = .90; see Table 5.3). These results thus suggest that the a priori self-concept factor structure does apply to the current clinical sample (Research Question 1.1.1).

The correlations amongst the factors provide an indication of the distinctiveness of each of the factors (see Table 5.3). Results indicated that the factor correlations for the non-clinical responses ranged from $r = .01$ to $.78$ (over 60 percent of the correlations were below $.40$) thus indicating that the factors measured by the SDQII-S is relatively distinct from each other. In support of previous research, the factor correlations revealed that the largest correlations were between self-esteem and other factors (Marsh, Parker & Barnes, 1985).

Table 5.3

*Factor Loadings for the SDQII-S (Clinical Sample)*

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*Note.* Phys=Physical Ability, Appr=Physical Appearance, OSex=Opposite sex relations, SSex=same sex relations, Prnt=Parent relations, Hon=honesty and trustworthiness, Emot=emotional
stability, Math=Math self-concept, Verb= verbal self-concept, Schl= general school self-concept, SE= self-esteem. \( r < .23, p > .05 \).

**CFA for the SDQII-S: Non-Clinical Sample**

To keep the sub-sample analyses comparable and consistent, a CFA based on the same item parcels was conducted for the SDQII-S for the non-clinical sample. The results of the CFA for the non-clinical sample indicated that there was a good fit between the a-priori 11-factor structure of the SDQII-S and the data obtained from the non-clinical sample, with each of the parcels loading highly on the factors that they were designed to measure (average factor loading= .87; see Table 5.4). This result thus supported Hypothesis 1.1.2. Furthermore, the goodness of fit indices fell well within the acceptable range for a good fit between the data from the non-clinical sample of adolescent girls and the 11-factor model of the self-concept (Chi-square= 5065.93, df= 1169, RMSEA= .045, TLI= .96 and CFI= .990). Again, the factor correlations reveal the distinctiveness of each of the factors that are measured by the SDQII-S, with correlations ranging from \( r = .05 \) to .81.

Table 5.4

*Factor Structure for the SDQII-S Scales (Non-Clinical Sample)*

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*Note. Phys=Physical Ability, Appr = Physical Appearance, Osex=Opposite sex relations, Ssex=same sex relations, Prnt= Parent relations, Hons= honesty and trustworthiness, Emot= emotional stability, Math=Math self-concept, Verb= verbal self-concept, Schl= general school self-concept, SE= self-esteem. r <.05, p >.05.*
Multi-group Invariance Analyses for the SDQII-S: Factorial Invariance across Diagnosis Groups

A multi-group factor analysis was also performed to assess the generalisability of the multiple dimensions of self-concept across two different samples of adolescents. That is, to evaluate whether the multidimensional model of the self-concept could be applied to both clinical and non-clinical adolescent girls, a multi-group invariance analysis was performed on the SDQII-S (Research Question 1.1.3).

As previously highlighted (see chapter 4), testing for the factorial invariance of a questionnaire across samples involves systematically holding various aspects of the model invariant between the two groups. The tests of invariance for this study comprised an investigation of the comparative fit for four models across the two samples of adolescents. The first model was a completely free model in which no constraints were placed on the model between the two groups. The second model was one in which the factor loadings were held invariant between the groups, and the third involved holding the factor loadings and uniquenesses invariant between the groups. The fourth model was one in which the factor loadings and factor variance/covariances were invariant, and the fifth and final model was the most stringent model, in that factor loadings, factor variances, covariances and uniquenesses were all held invariant. Marsh (1987) argued for invariance across the groups, relatively invariant goodness of fit indices across the different models is required.

Goodness of fit statistics generated for the four different models across the samples of adolescent girls are presented in Table 5.5. The goodness of fit statistics for the first model indicated that there was a good fit between the data and the a priori structure for both the groups, thus providing a basis for the testing of more restrictive
models. For all four invariance models, the results provided good support for the invariance of the multi-dimensional model of self-concept across the two adolescent samples (clinical and non-clinical). Indeed, based on the TLI and RMSEA indexes that control for parsimony (the totally invariant model is substantially more parsimonious than the completely free model, requiring 88 fewer parameter estimates), the totally invariant model fits the best of any of the models considered in this set of invariance models. These results thus illustrate that the factor structure of self-concept is invariant for the two samples of adolescent girls and thus responses from the two samples can be compared to determine whether there are any differences between their self-concept profiles.

Table 5.5

Tests of Factorial Invariance across Sample Groups for SDQII-S

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<th>CFI</th>
<th>RMSEA</th>
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Note. DF=Degrees of Freedom, TLI=Tucker-Lewis Index, CFI=Comparative Fit Index, RMSEA=Root Mean Square Error of Approximation, Completely Free= Model with no invariance constraints, FA=factor loadings, VA/COV=variance and covariance, UN=uniquenesses, IN=invariant.
The Structure and Measurement of Eating Disorder Symptomatology in Adolescents: Psychometric Properties of the EDI-2

The EDI-2 was selected in this study to examine eating disorder symptomatology in girls with anorexia and adolescent girls without anorexia nervosa. The EDI-2 is an established instrument that has been shown to have strong psychometric properties in both clinical and non-clinical populations (see Garner, 1991). However, to ensure that the instrument could be used in the current sample population, the psychometric properties of the instrument were evaluated in terms of reliability and factor structure generalisability.

Reliability Analyses for the EDI-2

Reliability analyses were conducted for both clinical and non-clinical groups separately, and for the total sample. Previous estimates of internal consistency for the EDI-2 scales range from Cronbach’s $\alpha = .83$ to $\alpha = .93$ for the normative sample of eating disordered patients ($n = 889$) (Garner, 1991). Further investigations have indicated that Cronbach’s $\alpha$s for non-patient samples ranged from $\alpha = .69$ ($n = 354$; Shore & Porter, 1990) for the bulimia scale to $\alpha = .93$ for the body dissatisfaction scale ($n = 158$; Vanderheyden, 1987). Estimations for the provisional scales (Asceticism, Impulse Regulation and Social Insecurity) range from Cronbach’s $\alpha = .70$ to $.80$ for an eating disordered sample and $\alpha = .44$ to $.80$ for the non-clinical normative sample.

Internal consistencies for the scales for the current clinical and the non-clinical samples were comparable to the original estimates of Cronbach’s $\alpha$ (see Garner, 1992), and for ten of the eleven scales, reliability estimates fell well within the acceptable range (de Vaus, 2002; Hills, 2003) for both the clinical and non-clinical adolescent samples (Hypothesis 1.2.1). However, as shown in Table 5.6, the EDI-2
appears to be more reliable for the clinical sample as compared to the non-clinical population (although the responses are only marginally better for the clinical sample).

Analyses revealed however, that the Cronbach’s alpha estimates for the asceticism scale for the non-clinical sample fall well below the recommended range for scales (Anastasi & Urbina, 1998). The analyses revealed that the reliability estimates for the bulimia scale for the non-clinical sample were also lower than the recommended level, which supports previous research by Shore and Porter (1990). This result perhaps raises questions about the usefulness and interpretability of these particular scales for younger adolescent populations who have not been diagnosed with anorexia nervosa, particularly given the low reliability of the scale.

Although participants responded to this questionnaire on a 6-point Likert scale, the official scoring method is to truncate these scores so that scores range from 0 to 3 (where zero indicates asymptomatic, and three indicates symptomatic). However, although this is a useful method of scoring within the clinical setting, to determine whether or not individuals are symptomatic, authors such as MacCallum, Zhang, Preacher, & Rucker (2002) have argued that when scores are truncated in this fashion, researchers and practitioners are dichotomising variables and as a consequence there is a loss of statistical power in analyses.

Furthermore, as many statistical analyses assume that the data being analysed are normally distributed, by truncating the scores (as done with the EDI-2), more often than not, the distribution of responses would become bimodal, thus making it difficult to conduct the analyses with good statistical power. Thus, to address this issue, reliability analyses were also conducted using the continuous scoring system, which revealed that the internal consistency of results increased (although only very marginally), using the 1-6 scoring method (see Table 5.6). Hence, given that there is
greater reliability in responses when using the continuous method, the 1-6 scoring method was used for the subsequent analyses.

Table 5.6

*Cronbach’s α Estimates for Internal Consistency of the EDI-2 for Clinical and Non-Clinical Samples*

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<tr>
<th></th>
<th>Garner &amp; Olmsted (1984; n = 155)</th>
<th>Non-clinical (n = 828)</th>
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An initial CFA was conducted to determine whether there was a good fit between the data for the whole sample and the hypothesised 11-factor structure of the EDI-2 at the item level (Hypothesis 1.2.2). The 11 factors were clearly identified in the CFA; with moderate to high item factor loadings on the appropriate factors (see Table 5.7). The goodness of fit indices also indicated that there was a reasonable fit between the data and the 11-factor a priori structure (Chi-square = 12624.77, df = 3949, RMSEA = .066, TLI = .953, and CFI = .955).

The correlations amongst the 11 factors of the EDI-2 were well within the moderate to high range and were comparable to the original published subscale intercorrelations (see Garner, 1991). Despite this, authors have emphasised the clinical and practical usefulness of using the scales to measure the different dimensions of eating disorder symptomatology, and have reasoned that the high correlations between the factors are a result of the theoretical relatedness of the constructs that are measured by the instrument (Garner, 1991).

Table 5.7

*Factor Loadings for EDI-2 Items (Total Sample)*
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### Factor Correlations

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*Note: Avg FL represents the average factor loadings.*
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P .40 .34 .25 .42 1.00
ID .26 .49 .26 .69 .29 1.00
IA .63 .74 .45 .81 .56 .53 1.00
MF .30 .35 .20 .46 .40 .36 .51 1.00
A .60 .78 .43 .78 .58 .58 .89 .55 1.00
IR .42 .77 .29 .74 .44 .60 .86 .48 .90 1.00
SI .42 .59 .46 .91 .39 .87 .71 .46 .76 .77 1.00

Note. DT = Drive for Thinness, B = Bulimia, BD = Body Dissatisfaction, IE = Ineffectiveness, P = Perfectionism, ID = Interpersonal Distrust, IA = Interoceptive Awareness, MF = Maturity Fears, A = Asceticism, IR = Impulse Regulation, SI = Social Insecurity. Avg FL = Average Factor Loading. All r, p < .05

CFA for the Clinical Sample EDI-2 Responses

To determine whether there was a good fit between the 11-factor a priori structure of the EDI-2 and the data obtained from the clinical sample of adolescent girls (Hypothesis 1.2.3), a CFA was conducted. As the initial total sample CFA for the instrument indicated that there was a good fit between the data and the hypothesised model at the item level, there is strong evidence to suggest that there would be a good fit between the clinical data and the 11-factor model required for the EDI-2. However, much like the case with the SDQII-S, as a result of the small sample size of the
clinical population relative to the number of measured parameters, item parcels were constructed based on the item total correlations obtained from reliability analyses (see chapter 4 for a more detailed description).

Results of the CFA indicated that there was a good fit between the a priori structure and the data for the clinical sample, with all the parcelled variables loading substantially on the factors that they were designed to measure (see Table 5.8). The goodness of fit indices also indicated that there was a reasonable fit between the a priori model of the EDI-2 and the clinical sample data (Chi-square= 270.66, df=165, RMSEA= .068, TLI= .960, and CFI= .970).

Table 5.8

*Item Parcel Factor Loadings (Clinical Sample)*

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Note. DT= Drive for Thinness, B= Bulimia, BD= Body Dissatisfaction, IE= Ineffectiveness, P = Perfectionism, ID= Interpersonal Distrust, IA= Interoceptive Awareness, MF= Maturity Fears, A= Asceticism, IR = Impulse Regulation, SI= Social Insecurity, r <.25, p >.05.

CFA for the Non-clinical Sample EDI-2 Responses

A CFA based on the item parcels for the non-clinical sample was also conducted to determine whether the hypothesised EDI-2 factor structure could be applied to a non-clinical sample of adolescent girls (Hypothesis 1.2.4). The goodness of fit indices indicated that there was a better fit between the 11-factor a priori model and the non-clinical data as compared to the clinical sample of adolescent girls (Chi-square= 547.65, df=165, RMSEA=.054, TLI=.980, and CFI=.990). Furthermore,
factor loadings were shown to be consistently high for each of the indicator parcels that measured each scale (see Table 5.9).

Table 5.9

*Item Parcel Factor Loadings for the EDI-2 (Non-Clinical Sample)*

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**Factor Correlations**

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Multiple group CFA invariance analyses were also conducted for the EDI-2 responses obtained for both the clinical and non-clinical sample of adolescents. This analysis assessed whether the a priori factor structure for the instrument could be generalised across different sample groups (adolescent girls with anorexia nervosa, and non-clinical adolescent girls) (Research Question 1.2.1). Similar to the examination of the SDQII-S, tests of invariance for the EDI-2 involved the investigation and comparison of four factorial models, by systematically holding specific parameters invariant for both the samples. The first model was one in which all of the parameters were free to vary, whilst the second involved holding the factor loadings invariant across the groups. The third model was slightly more stringent, holding the factor loadings and uniquenesses constant. In the fourth model, the factor variances, covariances and the factor loadings were held invariant and the final model was the most stringent, in that all parameters including uniquenesses were constrained.
to be invariant. Relatively similar goodness of fit indices for the five models are required for the hypothesis of invariance to be met (Marsh, 1994; see chapter 4 for a more detailed description of the criteria for factorial invariance).

Table 5.10

*Invariance Tests across Groups for the EDI-2*

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<tr>
<th>Model</th>
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<th>TLI</th>
<th>CFI</th>
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<td>.989</td>
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<tr>
<td>FL=IN, UN = IN</td>
<td>674.740</td>
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<tr>
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<tr>
<td>FL=IN, VA/COV=IN, UN = IN</td>
<td>851.039</td>
<td>418</td>
<td>.985</td>
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<td>.061</td>
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</table>

*Note.* CHISQ=Chi-square, DF= Degrees of Freedom, TLI= Tucker-Lewis Index, CFI= Comparative Fit Index, RMSEA= Root Mean Square Error of Approximation, completely free model= no invariance constraints, FA= factor loadings, VA/COV= variance and covariance, UN = uniquenesses, IN = invariant.

The results of the invariance tests indicated that there is good support for the structural invariance of the EDI-2 across the two samples of adolescent girls (see Table 5.10). The goodness of fit indices for the first model, in which all parameters were free to vary, indicated that there was an adequate fit, and the goodness of fit indices varied only slightly between the analyses for each of the models. In particular, for the model with the factor loadings invariant (which is the minimal condition for factor invariance), the TLI and RMSEA were nearly the same as for the completely free model. Despite the goodness of fit indices for the most stringent model dropping slightly from the previous models in which the factor loadings and the variances and
covariances were invariant, the indices for the completely invariant model were still within the acceptable range (Chi-square= 851.039, df=418, RMSEA= .061, TLI= .985, and CFI= .987). Despite the minor drop in goodness of fit indices, these results indicate that the factor structure for the EDI-2 is applicable and similar for both clinical and non-clinical samples of adolescent girls.

*Total CFA: Total Sample*

A further total CFA was conducted in which both the EDI-2 and the SDQII-S for the total sample were entered into the same model. This model was used to assess the factor structure and degree of discrimination between scales (a total of 22 scales based on responses to 142, were included in this analysis). Support for the hypothesised factor structure across all instruments requires that every scale be included in a single overarching CFA, though to date, there are very few published examples of CFAs inclusive of multiple instruments. Although separate CFA analyses for each of the instruments show that the items load highly on the factors that they are designed to measure, there is no guarantee that this will be the case when the instruments are incorporated into the one analysis (see Marsh, 1994b; Marsh, Craven, Hinkley, & Debus, 2003).

Results for the total CFA in which both the instruments were combined indicated that there was a good fit between the data and the 22-factor a priori model, and that all indices were well within the acceptable range (Chi-square= 22871.17, df= 9638, TLI=0.97, CFI= 0.97, RMSEA= 0.043). The factor loadings indicated that as expected, items loaded highly on the factors that they were designed to measure, and further that the loadings obtained in these analyses were similar to the loadings from separate analyses (see Appendix 14). These provide evidence that the two instruments and their factors are clearly distinguishable.
Factor correlations revealed that there was substantial differentiation between the factors. Factors within each of the instruments were clearly measuring different constructs. Of particular relevance to the present study, the pattern of relations between the factors from each instrument was highly differentiated, varying from $r = -0.11$ to $0.79$. Importantly, for factors that were conceptually similar, the correlations were substantial and significant (for example, ineffectiveness with self-esteem, $r = 0.79$, interoceptive awareness with emotional stability self-concept, $r = 0.74$, body dissatisfaction with physical appearance self-concept, $r = 0.62$; interpersonal distrust with same-sex relations, $r = 0.56$). As expected, analyses revealed that the math and verbal academic scales of the SDQII-S had limited relations to eating disorder symptomatology, with correlations ranging from $r = -0.11$ to $0.29$. Being a more general scale, general school self-concept was shown to have moderate relations with eating disorder symptomatology. These results hence, further support the multidimensionality of self-concept (Hypothesis 1.5.1; see Table 5.11) and highlight the importance of considering the differential relations between the self-concept and mental health measures such as the EDI-2.

However, despite the strong support for the multidimensional nature of self-concept, and the importance of understanding the differential relations between the factors, it is still important to note that self-esteem is an important component within self-concept and should not be excluded from any model of self-concept. Indeed, whereas the strongest correlations between each EDI-2 factor and a corresponding SDQII factor tended to be for emotional stability self-concept (highest correlation with 6 of the 11 factors of the EDI-2), self-esteem was also highly correlated with many of the EDI-2 factors (highest correlations with 3 of the 11 EDI-2 factors). This is obvious from the current results, in that analyses revealed that strong relations
existed between self-esteem and eating disorder symptomatology (Hypothesis 1.5.2) with moderate to strong correlations between all factors, except for perfectionism, in which there was only a very small but significant association between self-esteem and perfectionism.

Table 5.11

*Factor Correlations for the Total Sample for SDQII-S and the EDI-2*

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<th>SSex</th>
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**Note.** Phys = Physical Ability, Appr = Physical Appearance, Osex = Opposite sex relations, Ssex = same sex relations, Pnt = Parent relations, Hons = honesty and trustworthiness, Emot = emotional stability, Math = Math self-concept, Verb = verbal self-concept, Schl = general school self-concept, SE = self-esteem, DT = Drive for Thinness, B = Bulimia, BD = Body Dissatisfaction, IE = Ineffectiveness, P = Perfectionism, ID = Interpersonal Distrust, IA = Interoceptive Awareness, MF = Maturity Fears, A = Asceticism, IR = Impulse Regulation, SI = Social Insecurity. Lower scores on the EDI-2 factors are indicative of increased severity of symptomatology. \( r < .06, p > .05 \)

**The Effect of Age, BMI and Diagnosis on Self-concept: Multiple Indicator Multiple Indicator Cause (MIMIC) Model**

A series of three (SEM) MIMIC models (see earlier discussion in chapter 4) were tested to determine the effects of age, BMI and diagnosis group (clinical versus non-clinical) on the 11 different self-concept facets. The first was an initial test of the effect of group and the second a SEM model with age, BMI and group entered as predictor variables. Further, an extended MIMIC model in which the effects of the cross product interaction term of BMI and diagnosis group (BMI x grp) was tested, as well as the interaction effects of group and age (grp x age), and BMI and age (BMI x age). As expected, the factor loadings for the latent variables of self-concept were the same for this MIMIC model as they were for the total sample CFA presented earlier. Hence, greater emphasis is placed on the beta coefficients (i.e. the path coefficients), which represent the effects of age, BMI, diagnosis group and interaction terms on the 11 dimensions of self-concept (see Table 5.12 for main effects model, and Table 5.13 for the main effects and interaction effects model).

The results for the first model indicated that there was a good fit (chi-square=3021.863, df=1209, TLI=.974, CFI=.977, RMSEA=.041): the model with group, age and BMI as predictor variables indicated was also shown to have an excellent fit between the a priori model and the data (Chi-square= 3139.537, df=1289,
TLI=.974, CFI=.977, RMSEA=.040). For the extended model in which the interaction terms were also entered as predictors, the goodness of fit indices were well within the acceptable ranges (chi-square= 3252.950, df=1409, TLI=.974, CFI=.977, RMSEA=.038). The results of the MIMIC models provided very strong support for the multidimensionality of self-concept as there were differential effects of age, diagnostic group and BMI on the various dimensions of self-concept. Each of these will be discussed in turn.

Table 5.12

Path Coefficients for Relations between Group, Age and BMI to Self-concept Dimensions (Main Effects Model)

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<tr>
<td>SE</td>
<td>-.192*</td>
<td>.131*</td>
<td>-.040</td>
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Note. Phys=Physical Ability, Appr = Physical Appearance, Osex=Opposite sex relations, Ssex=same sex relations, Prnt= Parent relations, Hon= honesty and trustworthiness, Emot= emotional stability, Math=Math self-concept, Verb= verbal self-concept, Schl= general school self-concept, SE= self-esteem, GRP = group (clinical=0, non-clinical=1). All path coefficients are presented in completely standardised form. *p <.05
The Effect of Group (Diagnosis) on Self-concept (Research Question 1.3.1)

The results of the MIMIC analysis indicated that diagnostic group had a significant impact on physical appearance, same sex relations, emotional stability, math self-concept, general school self-concept and self-esteem. When controlling for the effects of age and BMI, all significant effects remained except for the effect of group on single sex relations. As predicted (Hypothesis 1.3.1), and in line with the diagnostic criteria for anorexia nervosa (see DSM-IV; APA, 2000), girls in the non-clinical sample scored significantly higher on the physical appearance scale as compared to the clinical sample of adolescents with anorexia nervosa.

The results of the MIMIC model also indicated that non-clinical girls scored higher than clinical girls for emotional stability, and that the effect of group on emotional stability remained, even after controlling for the effects of age and BMI. Interestingly, scores for two out of three academic self-concept facets (math and general school self-concept) were shown to be higher for girls with anorexia nervosa, as compared to adolescent girls without anorexia nervosa, and furthermore, the effect of group was significant for these two academic scales even when the effects of age and BMI were controlled for. Although previous studies have shown that girls with anorexia nervosa scored highly on academic related adjustment (Swift et al., 1996) and self-concept (Ha et al., 2004) in comparison to non-clinical peers, this result is fascinating because the higher results were not consistent across all of the domains of the academic self-concept, as group did not have a significant effect on verbal self-concept. The implications of these findings will be further discussed in chapter 8.

Much of the literature within the eating disorders field has argued that girls with anorexia nervosa and other eating disorders have low self-esteem (see for example, Polivy & Herman, 2002); the results of this study also suggest that this is the
case. The MIMIC model indicated that, as hypothesised (Hypothesis 1.3.2) the effect of group on self-esteem was substantial, even when the effects of age and BMI were controlled. Closer examination of the results indicates that the non-clinical sample of girls generally had a more positive evaluation of themselves compared to the clinical sample of adolescent girls.

For all other aspects of self-concept however, the results indicated that there was no significant effect of group membership on social relations (opposite sex peers and parental relations). This result is somewhat surprising, as some authors have suggested that anorexia nervosa affects social interaction, with many patients becoming increasingly socially withdrawn as the pathology of the disorder increases (Swift et al., 1986).

Do the Group Differences in Self-concept Domains exist above and beyond the effects of Self-Esteem?

Correlations suggested that group and self-esteem were very highly associated and further, that self-esteem was highly related to eating disorder symptomatology. Hence, evaluations were conducted to determine whether group differences in self-concept existed above and beyond the effects of self-esteem. Further, as researchers consistently cite low self-esteem as one of the defining characteristics of anorexia nervosa, differences between groups for the multiple domains of self-concept may simply be a reflection of the effects of self-esteem. Therefore, in order to evaluate whether diagnosis related differences in self-concept exist above and beyond the effect of self-esteem (Research Question 1.3.2), a further path analysis was conducted. In this path model, the effects of self-esteem and group on the different facets of self-concept were examined (self-esteem and group were both used as predictor variables and were both correlated with each other). Goodness of fit indices
indicated that there was a good fit between the data and the a priori model (chi-square=3021.863, df=1209, TLI=.974, CFI=.977, RMSEA=.041).

Results indicated that although self-esteem had a significant effect on all dimensions of self-concept \((p < .05)\), once the effect of self-esteem was controlled, group differences remained for physical appearance, emotional stability, math and general school self-concepts. However, once the effects of self-esteem were controlled, further group differences between physical ability and verbal self-concepts were revealed (see Table 5.13). More specifically, group differences indicated that the girls in the clinical sample had higher academic self-concepts as compared to their non-clinical peers, and as expected, scored lower on the emotional stability and physical appearance dimensions of self-concept. Clinical girls were also shown to view themselves more positively in terms of physical ability compared to non-clinical girls.
Table 5.13

*Path Coefficients for Relations Between Self-esteem and Group to Self-concept Domains*

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<td>.163*</td>
<td>.063*</td>
</tr>
<tr>
<td>OSex</td>
<td>.246*</td>
<td>.043</td>
<td>.007</td>
</tr>
<tr>
<td>Ssex</td>
<td>.471*</td>
<td>.080*</td>
<td>.011</td>
</tr>
<tr>
<td>Prnt</td>
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<td>-.024</td>
</tr>
<tr>
<td>Hons</td>
<td>.401*</td>
<td>-.050</td>
<td>-.108</td>
</tr>
<tr>
<td>Emot</td>
<td>.451*</td>
<td>.177*</td>
<td>.112*</td>
</tr>
<tr>
<td>Math</td>
<td>.465*</td>
<td>-.069*</td>
<td>-.137*</td>
</tr>
<tr>
<td>Verb</td>
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<td>-.035</td>
<td>-.102*</td>
</tr>
<tr>
<td>Schl</td>
<td>.798*</td>
<td>-.087*</td>
<td>-.203*</td>
</tr>
</tbody>
</table>

*Note. Phys=Physical Ability, Appr = Physical Appearance, Osex=Opposite sex relations, Ssex=same sex relations, Prnt=Parent relations, Hons=honesty and trustworthiness, Emot=emotional stability, Math=Math self-concept, Verb=verbal self-concept, Schl=general school self-concept, SE=self-esteem, Group = group (clinical=0, non-clinical=1).*p < .05, a=β Coefficient for the effect of group when the effects of self-esteem have been controlled.*
The Effect of BMI on Self-Concept (Research Question 1.3.2)

The effect of BMI on the multiple domains of self-concept was shown to be non-significant for all domains of self-concept, hence indicating that once the effects of age and diagnostic group were controlled, the main effect of BMI could not significantly explain any variance in self-concept.

The Effect of Age on the Multiple Domains of Self-concept (Research Question 1.3.3)

Although the development of self-concept across age is not the primary objective of this study or this analysis, it was important to determine the effects of age on self-concept, particularly as much of the literature within the developmental and educational psychology fields suggests that there is a marked influence of age on self-concept. The results of the analysis of the effect of age on self-concept domains revealed that age significantly predicted all domains of self-concept except honesty and trustworthiness. The results indicate that, as girls get older, their perception relating to most areas of themselves (including social relations, physical appearance and physical abilities, academic self-concept and self-esteem) becomes more negative. This result supports other literature in developmental psychology that suggests that there is a consistent negative association between age and the different domains of self-concept (e.g. Marsh & Ayotte, 2003).

Extended MIMIC Model: Interaction Effects

Given that group and BMI are closely linked (as part of the diagnostic criteria for eating disorders entails that individuals have low height and weight ratios), a standardised cross product of the two was constructed (where the z score of BMI was multiplied with group) to determine whether the effect of group is a function of group
and BMI. The goodness of fit indices for the extended model indicated that there was a good fit between the data and the a priori model (chi square= 3252.950, df=1409, TLI= .974, CFI= .977, RMSEA= .038). However, analysis of this extended MIMIC model revealed that none of the group-by-BMI interactions were significant (see Table 5.14 for all path coefficients for this model).

Table 5.14

Path Coefficients for Relations Between Group, Age, BMI and Interaction terms to Self-Concept Dimensions

<table>
<thead>
<tr>
<th>Scale</th>
<th>AGE</th>
<th>GRP</th>
<th>BMI</th>
<th>BMIxGRP</th>
<th>GRPxAGE</th>
<th>BMIxAGE</th>
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<tbody>
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<td>.175*</td>
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<td>.013</td>
<td>-.037</td>
</tr>
<tr>
<td>OSex</td>
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<td>-.018</td>
<td>.005</td>
<td>-.073</td>
<td>.014</td>
<td>-.064</td>
</tr>
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<td>Ssex</td>
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<td>.030</td>
<td>-.045</td>
<td>.002</td>
<td>-.076</td>
</tr>
<tr>
<td>Prnt</td>
<td>-.195*</td>
<td>.107</td>
<td>-.013</td>
<td>.097</td>
<td>.017</td>
<td>-.014</td>
</tr>
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<td>Hon</td>
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<td>-.076</td>
<td>.026</td>
<td>-.008</td>
<td>.025</td>
<td>.010</td>
</tr>
<tr>
<td>Emot</td>
<td>-.190*</td>
<td>.158*</td>
<td>.009</td>
<td>.022</td>
<td>.025</td>
<td>-.033</td>
</tr>
<tr>
<td>Math</td>
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<td>-.031</td>
<td>-.026</td>
<td>.052</td>
<td>-.041</td>
<td>-.032</td>
</tr>
<tr>
<td>Verbal</td>
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<td>-.033</td>
<td>.026</td>
<td>.044</td>
<td>.020</td>
<td>-.029</td>
</tr>
<tr>
<td>Schl</td>
<td>-.190*</td>
<td>-.054</td>
<td>-.025</td>
<td>.064</td>
<td>-.019</td>
<td>-.009</td>
</tr>
<tr>
<td>SE</td>
<td>-.189*</td>
<td>.159*</td>
<td>-.047</td>
<td>.055</td>
<td>.032</td>
<td>-.004</td>
</tr>
</tbody>
</table>

Note. Phys=Physical Ability, Appr = Physical Appearance, Osex=Opposite sex relations, Ssex= same sex relations, Prnt= Parent relations, Hons= honesty and trustworthiness, Emot= emotional
Examination of Self-concept Profiles using Repeated Measures Analysis

To evaluate whether there were any differences in the self-concept profiles of adolescent girls with anorexia nervosa, as compared to non-clinical adolescent high school students, a profile analysis was also conducted using repeated measures. Considering the profile analysis (using the repeated measures method) and the MIMIC models can be used to determine whether there are any group differences on the self-concept profiles, it would be expected that there would be little difference between what the mean scale score comparison using repeated measures (with age and BMI as covariates) would reveal, as compared to the above latent mean factor analysis (MIMIC model approach) as both are comparing the effect of group on self-concept domains (Research Question 1.3.4). However, given the advantages of the SEM and MIMIC model approaches in terms of measurement error, there may be some differences in the results.

The repeated measures analysis showed that there was a significant main effect of group ($F_{(7.58, 6777.64)} = 3.40, p < .01$) and age ($F_{(7.58, 6777.64)} = 3.48, p < .01$) on self-concept scores. Subsequent Multivariate Analysis of Covariance (MANCOVA) indicated that there were differences between clinical and non-clinical girls for physical appearance, emotional stability, math self-concept, general school self-concept and self-esteem ($p < .05$). More specifically, clinical girls scored lower than non-clinical girls for physical appearance, emotional stability and self-esteem. Clinical girls only scored higher than their non-clinical peers on math self-concept...
and general school self-concept (see Figure 5.1). These group differences were shown to remain after controlling for the effects of age.

Not surprisingly, of course, the pattern of differences based on the repeated measures analysis was similar to that based on the SEM MIMIC model. However, the MIMIC model is a statistically stronger basis for making group comparisons in that it controls for measurement error. Hence, it is also not surprising that there were more statistically significant differences based on the MIMIC model than the traditional repeated measures analysis. This comparison reveals why it is important to use the strongest research methodology and statistical analyses, even when the focus of the research is on substantive issues.

**Figure 5.1.**

Mean Self-Concept Scale Score Differences for Clinical and Non-clinical Girls

*Note:* Phys=Physical Ability, Appr = Physical Appearance, Osex=Opposite sex relations, Ssex=same sex relations, Prnt=Parent relations, Hons=honesty and trustworthiness, Emot=emotional stability, Math=Math self-concept, Verbal=verbal self-concept, Schl=general school self-concept, SE=self-esteem. Significant differences between clinical and non-clinical samples were on the following domains: physical appearance, emotional stability, math self-concept, general school self-concept and self-esteem, \( p < .05 \).
A MIMIC SEM was also conducted to determine the effects of group (Research Question 1.4.1), age (Research Question 1.4.2) and BMI (Research Question 1.4.3) on eating disorders symptomatology, as measured by the EDI-2. Further analyses were conducted in an extended MIMIC model to determine whether the standardised interaction terms for BMI and group (grpxBMI), age by group (agexgrp) and BMI by age (BMIxage) had significant impacts on eating disorder symptomatology scores. Both of these analyses were conducted at the item level. As expected, the factor loadings and psychometrics for the latent variables of eating disorder symptomatology were the same for this MIMIC model as they were for the total sample CFA calculated and presented earlier. Hence, greater emphasis is placed on the beta coefficients (i.e. the path coefficients), which are representative of the effect of age, BMI, diagnosis group and interaction terms on the 11 scales of the EDI-2. Results for the main effects model indicated that there was a good fit between the a priori model and the data (chi-square=13301.870, df=4189, TLI=.957, CFI=.959, RMSEA=.055). Each of the main effects will be discussed in turn.

The Effect of Group on Eating Disorder Symptomatology

Analysis of the effect of group on the 11 eating disorders scales indicated that there was a significant impact of group on all but one of the 11 scales (see Table 5.16). Hence, clinical girls’ scores on drive for thinness, body dissatisfaction, ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness, maturity fears, asceticism, impulse regulation and social insecurity, indicated that they were more symptomatic than non-clinical girls, as expected. For the bulimia scale however, there was no significant impact of group on scores. The implications of these results will be discussed further in chapter 8.
The Effect of Age on Eating Disorder Symptomatology

Although the impact of age was not a primary aim of this study, some authors have suggested that eating disorder symptomatology may be affected by age (for example, see Shore & Porter, 1990). The MIMIC model analyses revealed that age did, as predicted, have a significant effect on most of the eating disorder scales, with the older girls’ scores indicating that they are significantly more symptomatic for drive for thinness, bulimia, ineffectiveness, interpersonal distrust, interoceptive awareness, impulse regulation and social insecurity (even after controlling for the effects of group and BMI). There was no significant impact of age on perfectionism; maturity fears and asceticism (see Table 5.15).

The Effect of BMI on Eating Disorder Symptomatology

BMI was shown to have very little effect on EDI-2 scores after controlling for group differences. However, as expected, BMI had a significant effect on drive for thinness and body dissatisfaction scores, with results suggesting that those respondents with higher BMIs have an elevated drive for thinness, and higher body dissatisfaction levels. BMI was also shown to be able to significantly predict bulimia scale scores (see Table 5.15).
Table 5.15: Path Coefficients for Relations Between Group, Age and BMI to Eating Disorder Symptomatology

<table>
<thead>
<tr>
<th>Scale</th>
<th>AGE</th>
<th>GRP</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT</td>
<td>-.085*</td>
<td>.219*</td>
<td>-.081*</td>
</tr>
<tr>
<td>B</td>
<td>-.087*</td>
<td>.051</td>
<td>-.106*</td>
</tr>
<tr>
<td>BD</td>
<td>-.183*</td>
<td>.101*</td>
<td>-.114*</td>
</tr>
<tr>
<td>IE</td>
<td>-.189*</td>
<td>.236*</td>
<td>-.052</td>
</tr>
<tr>
<td>P</td>
<td>-.061</td>
<td>.137*</td>
<td>-.008</td>
</tr>
<tr>
<td>ID</td>
<td>-.128*</td>
<td>.101*</td>
<td>.034</td>
</tr>
<tr>
<td>IA</td>
<td>-.099*</td>
<td>.095*</td>
<td>.003</td>
</tr>
<tr>
<td>MF</td>
<td>.074</td>
<td>.189*</td>
<td>-.004</td>
</tr>
<tr>
<td>ASC</td>
<td>-.074</td>
<td>.261*</td>
<td>-.029</td>
</tr>
<tr>
<td>IR</td>
<td>-.121*</td>
<td>.120*</td>
<td>.020</td>
</tr>
<tr>
<td>SI</td>
<td>-.253*</td>
<td>.170</td>
<td>-.014</td>
</tr>
</tbody>
</table>

*Note. DT= Drive for Thinness, B= Bulimia, BD= Body Dissatisfaction, IE= Ineffectiveness, P = Perfectionism, ID= Interpersonal Distrust, IA= Interoceptive Awareness, MF= Maturity Fears, A= Asceticism, IR = Impulse Regulation, SI= Social Insecurity, GRP = group (clinical=0, non-clinical=1). All path coefficients are presented in completely standardised Beta form. * p >0.05
Do the Effects of Group exist Above and Beyond the Effects of Self-esteem

Much of the literature within the eating disorders field cites that low self-esteem is a primary risk factor and characteristic of anorexia nervosa (see chapter 2 for a review). Hence, it may be that many of the differences between the clinical and non-clinical groups in terms of eating disorders symptomatology are actually an effect of self-esteem, and thus the effects of group may not exist once the effects of self-esteem are controlled. Another MIMIC SEM was thus conducted to determine whether the effects of group existed beyond the effects of self-esteem. Goodness of fit indices indicated that there was an acceptable fit (chi-square=14047.492, df=4578, TLI=.962, CFI=.964, RMSEA=.054) and further that self-esteem could significantly predict all EDI-2 scales (see Table 5.16), indicating that the higher the self-esteem, the less symptomatic individuals were. Once the effects of self-esteem were controlled, group was shown to have a significant effect on drive for thinness, ineffectiveness, perfectionism, maturity fears, asceticism, and social insecurity (see Table 5.17), where the main effect of group (prior to controlling for the effects of self-esteem) was shown to be significant for 10 of 11 of the EDI-2 scales. That is, when the effects of self-esteem were controlled, the significant effect of group on body dissatisfaction, interpersonal distrust, interoceptive awareness and impulse regulation were decreased to non-significance.
Table 5.16: Path Coefficients for Relations Between Self-esteem and Group to Eating Disorder Symptomatology

<table>
<thead>
<tr>
<th>Self-concept Scale</th>
<th>Self-esteem</th>
<th>Group</th>
<th>Group</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>β Coefficient</td>
<td>β Coefficient</td>
<td>β Coefficient ^a</td>
</tr>
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<td>-.041</td>
</tr>
<tr>
<td>BD</td>
<td>.534*</td>
<td>.098*</td>
<td>.017</td>
</tr>
<tr>
<td>IE</td>
<td>.774*</td>
<td>.250*</td>
<td>.133*</td>
</tr>
<tr>
<td>P</td>
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<td>.143*</td>
<td>.115*</td>
</tr>
<tr>
<td>ID</td>
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<td>.129*</td>
<td>.049</td>
</tr>
<tr>
<td>IA</td>
<td>.547*</td>
<td>.110*</td>
<td>.027</td>
</tr>
<tr>
<td>MF</td>
<td>.259*</td>
<td>.177*</td>
<td>.138*</td>
</tr>
<tr>
<td>ASC</td>
<td>.544*</td>
<td>.265*</td>
<td>.182*</td>
</tr>
<tr>
<td>IR</td>
<td>.588*</td>
<td>.143*</td>
<td>.055</td>
</tr>
<tr>
<td>SI</td>
<td>.770*</td>
<td>.203*</td>
<td>.086*</td>
</tr>
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</table>

Note. Note. DT = Drive for Thinness, B = Bulimia, BD = Body Dissatisfaction, IE = Ineffectiveness, P = Perfectionism, ID = Interpersonal Distrust, IA = Interoceptive Awareness, MF = Maturity Fears, A = Asceticism, IR = Impulse Regulation, SI = Social Insecurity, Group = clinical (=0), non-clinical (=1). All path coefficients are presented in completely standardised Beta form. * p >0.05, ^a = β Coefficient for the effect of group when the effects of self-esteem have been controlled. Low scores on the EDI-2 indicate increased symptomatology, whereas high scores on the self-esteem scale of the SDQII-S indicate higher self-esteem.
Extended MIMIC model: Main and Interaction Effects to Eating Disorder Symptomatology

The extended MIMIC model indicated that there was a reasonable fit between the data and the a priori model (chi-square= 15786.91, df= 4429, TLI= .957, CFI= .960, RMSEA= .054). An extended MIMIC (structural equation path) model was tested to determine the simultaneous effects of age, BMI, diagnosis group and the standardised cross product interaction terms BMI and group (BMI x grp), group and age (grp x age) and age and group (age x grp). BMI, group, age and all three interaction terms were represented as single item constructs, measured without error. Results revealed that when the interaction term (BMI x grp) was included in the model, variance in bulimia scores could be explained by the interaction term, where the main effects of BMI or group could not explain the variance (when there was no interaction term in the model). The results also indicated that there was a significant negative effect of BMI x age on maturity fears. This interaction effect was relatively small and suggested that the variance in maturity fears could be partly explained as a function of age and BMI. Finally, the interaction term between age and group (age x grp) was shown to have an insignificant effect on any of the eating disorder factors measured by the EDI-2 (see Table 5.17). In summary, in the extended model with 33 interaction terms (3 interactions x 11 EDI-2 scales) there were only two statistically significant interactions, and even those two were reasonably small. These results provide reasonable support for the generalisability of the results over group, age, and levels of BMI.

Table 5.17
Path Coefficients for Relations Between Age, Group, BMI and Interaction Effects to Eating Disorder Symptomatology

<table>
<thead>
<tr>
<th>Scale</th>
<th>AGE</th>
<th>GRP</th>
<th>BMI</th>
<th>GRPxBMI</th>
<th>AGExGRP</th>
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<td>-.027</td>
</tr>
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</table>

Note. DT= Drive for Thinness, B= Bulimia, BD= Body Dissatisfaction, IE= Ineffectiveness, P= Perfectionism, ID= Interpersonal Distrust, IA= Interoceptive Awareness, MF= Maturity Fears, A= Asceticism, IR = Impulse Regulation, SI= Social Insecurity. GRP = group (clinical=0, non-clinical=1).

All scores on the EDI-2 were reverse scored so that the lower the score the higher the symptomatology.

All path coefficients are presented in completely standardised Beta form. * p >.05
Summary

The main objective of this study was to further our understanding of the multidimensional model of self-concept, particularly in relation to anorexia nervosa and eating disorder symptomatology, as measured by the EDI-2. Although the multidimensional approach to self-concept is well established in many areas of psychology and education, as previously highlighted, the mental health sector has yet to adopt this more descriptive approach to self-evaluation. Hence, to bridge this gap in the literature, this study attempted to determine firstly, whether the multidimensional model of self-concept retained its strong psychometric properties in a clinical and non-clinical population of adolescent girls and subsequently to examine self-concept differences between the two different adolescent samples. This study also attempted to determine what the relations were between the multiple dimensions of self-concept and eating disorder symptomatology, as measured by the commonly used EDI-2 in adolescent girls.

The current findings support the multidimensionality of self-concept in the two different samples of adolescent girls, with results indicating that the strong psychometric properties of the SDQII-S are retained in both samples of adolescents. Furthermore, through the use of sophisticated statistical methods which have not been extensively used in the eating disorders field, this study also established that girls diagnosed with anorexia nervosa differ from non-clinical girls on multiple domains of self-concept, with results generally suggesting that they have lower self-concepts in areas such as physical appearance, emotional stability, and self-esteem. Interestingly, results also indicated that girls with anorexia perceive themselves more positively when it comes to their academic selves in comparison to their non-clinical
counterparts (even after the effects of self-esteem are controlled). This finding not only highlights the importance of considering the multidimensional approach to self-concept, but also emphasises that in practical and treatment terms, clinicians can indeed develop models in which specific areas of the self are targeted.

Correlations between the EDI-2 and the SDQII-S factors highlighted the distinctiveness of the constructs measured by the two instruments (except for those constructs that were conceptually related, such as ineffectiveness and self-esteem), and further emphasised the multidimensional nature of self-concept. More specifically, the results indicated that the academic scales of the SDQII-S were not highly related to eating disorder symptomatology, whereas self-esteem and emotional stability was expectedly highly correlated.

In addition, this study examined the differences that exist between the groups for eating disorder pathology. These results indicated that clinical girls, as expected scored higher on 10 of the 11 eating disorder symptomatology scales. Surprisingly, group did not have a significant effect on bulimia scores, indicating that the non-clinical girls and the girls with anorexia nervosa had similar scores for bulimia.

This study thus highlights the usefulness of the multidimensional model of self-concept, suggesting that profiles that each of the groups of girls have are different, where there are significant differences in some areas of self-evaluations, but not in others. Further, the differential relations between self-concept domains and eating disorder symptomatology scores indicate that more can be learned about how the various aspects of the self are related to the various facets of eating disorders.
CHAPTER 6
RESULTS 2: GENERALISABILITY OF THE SELF-DISCREPANCY MODEL

Introduction

As previously highlighted in chapter 2, body image dissatisfaction and weight concerns in females, young and old, have become an increasingly problematic issue for the community. Over the last several decades the shape of the ideal body has decreased in size whilst the actual size and shape of the average woman has substantially increased (Hausenblas & Fallon, 2005; Tiggemann, 1992).

Body dissatisfaction has been conceptualised by many authors as the discrepancy between what you actually look like and what you want to look like (Marsh, 1999). Researchers have also argued that body dissatisfaction has an important influence on the way that individuals evaluate themselves; more specifically, that increased body image dissatisfaction is associated with low self-esteem (Geller et al., 1997; Ross & Wade, 2004; Tiggemann & Stevens, 1999). Although the use of discrepancy scores has been criticised in the past, more recent research (e.g. Marsh, 1999; Marsh & Roche, 1996) has demonstrated the usefulness of the discrepancy model, particularly when assessing the relations between body image
and self-concept. Based on original hypotheses proposed by self-concept theorists such as James (1890/1960), Marsh (1999) argued that how individuals perceive themselves is a function of how they actually see themselves and how they would like to be. Marsh (1999) further explained that if actual ratings were relatively larger than ideal ratings, then the discrepancy would have a negative impact on overall evaluations of the self (self-esteem). Although the discrepancy model in general has received only limited support in the past, this effect has been demonstrated using a silhouette-matching task for body image, in which Marsh showed that the discrepancy between actual and ideal body image could explain variance in self-esteem above and beyond actual and ideal ratings alone.

Although this discrepancy model for body image is evident in non-clinical populations, it has not yet been investigated in clinical samples, and further, has not been tested in eating disordered populations. Given that one of the central risk factors and diagnostic criteria for eating disorders is body image distortion and self-esteem, it is plausible to suggest that this model would also apply to a clinical sample of adolescent girls with anorexia. Furthermore, as Study 1 has shown there are significant differences between the two groups (i.e., the clinical sample and nonclinical, normative sample of girls) for self-concept. It may be that self-concept differences between the clinical and non-clinical samples are a function of body image ratings, rather than the pure effects of diagnostic group.

In addition, as previously highlighted in chapter 2, there is a marked gap in the literature that addresses the issue of actual and ideal body images in girls with anorexia, although it has been suggested that body image distortion is one of the primary causes of anorexia. However, it may be that patients’ body image distortion is not in perceptions of what they actually look like, but in their ideals for what
attractive is. Hence, to address the current limitations in the existing body of literature, the present study attempted to investigate the actual and ideal body images of two populations of adolescent girls and further investigated the comparability of the self-discrepancy model in the two populations.

Overview of analyses

This study comprises three sections, each of which addresses specific hypotheses and research questions. In section 1, an account was given of the first set of analyses conducted to evaluate the various relations between the silhouette matching task variables (actual ratings, ideal ratings and absolute discrepancies between actual and ideal ratings, later referred to as “absolute discrepancy”), group, BMI and the multiple dimensions of self-concept (Research Question 2.1.1). This analysis consisted of a preliminary total group CFA in which all the SDQ variables, Group, BMI and silhouette matching task variables were entered into the model. From this analysis, factor correlations were assessed. As factor correlations between self-concept factors would be equivalent to previous analyses (see Study 1), more emphasis is placed on the correlations between group, BMI, the silhouette matching task variables and self-concept. Following this, a multigroup factorial analysis was conducted in an attempt to determine whether the factorial structure was equivalent for the two adolescent samples.

Section 2 assessed the discrepancy model (Hypothesis 2.3.1 and Research Question 2.3.1); firstly in the total sample and subsequently in the two different adolescent samples separately. Path analyses were conducted to determine the effects of actual (Model 1), actual and ideal (Model 2) and actual, ideal and he absolute discrepancy (Model 3) on the multiple dimensions of self-concept for the total sample. As highlighted in chapter 2, support for the self-discrepancy model
requires that actual ratings of body image negatively impact self-concept (that is, the larger I am, the lower my self-esteem), whereas ideal ratings positively influence evaluations of the self (the larger my ideal is, the more attainable it is, and hence the higher my self-esteem). Negative relations between absolute discrepancies and self-concept (over and above the actual and ideal ratings alone) would provide further support for the discrepancy model. Subsequent multigroup factorial analyses were also conducted in an attempt to determine whether the self-discrepancy model for body image could also be applied to both the clinical and non-clinical samples of adolescent girls.

As one of the primary objectives of this study was to examine the self-discrepancy model in two different adolescent samples, a MIMIC model was evaluated in which the independent effects of the silhouette matching task variables, Group, BMI and four interaction terms on self-concept were assessed (Section 3). Previous research has recognised that there is a lack of literature that investigates the mediating effects of any variable in clinical literature (Holmbeck, 1997); instead, most authors in mental health and clinical psychology have opted to investigate the direct effect of variables such as body image and self-concept in clinical and non-clinical groups independently, and only recently have a handful of researchers considered the mediating effect of body image on self-concept when considering group differences and other outcomes. Given this gap in the literature, it is unclear whether the effect of group on self-concept exists as a function of body image, or whether BMI can vary the relationship between group and silhouette matching task and self-concept. Thus, further analyses were conducted to examine the possible mediating effect of body image on the relation between self-concept and group (Section 3; Research Question 2.4.1).
In sum, the analyses conducted in the current study included:

Section 1:
A preliminary CFA of SDQII-S, silhouette matching task variables, group and BMI to evaluate the factor correlations between these key variables for the total sample
Multigroup CFA to determine whether the factorial structure for the key variables are equivalent for the two samples

Section 2:
A series of three nested path models to examine the self-discrepancy model for body image for the total sample of adolescent girls
Multigroup factorial analysis to determine whether the structure of the self-discrepancy model is invariant for the two samples

Section 3:
MIMIC model to assess the effect of group and interactions with silhouette matching task variables on self-concept domains
Mediating model, which assessed the possible mediating effect of silhouette matching task variables on the effect of group on self-concept
Follow up regression plots assessing the impact of BMI and differences in actual, ideal and discrepancies for the two samples.

Section 1: Relations between silhouette matching task variables, BMI and Self-concept

*Preliminary CFA: Total Sample Analysis*

A preliminary CFA was conducted to investigate the varying relations between the self-concept and silhouette matching task variables. The initial total sample CFA results indicated that there was a good fit between the data and the a
priori factor structure, as indicated by the goodness of fit indices and the factor loadings (Chi-square= 2936.52, df= 1169, RMSEA= .041, TLI= .980, CFI= .980, which were equivalent to the previous total sample CFAs for the SDQII-S; see Study 1). As group, BMI and silhouette matching task variables were measured without error, their factor loadings were fixed to one and their error terms to zero. Factor correlations were thus examined to assess relations between the multiple dimensions of self-concept and the observed variables (see Table 6.1).

Factor correlations revealed that the largest correlations were between the actual ratings of body image and self-concept. More specifically, actual body image ratings had strong negative associations with all domains of self-concept (correlations ranged from $r =-.13$ to $r =-.45$); particularly physical appearance ($r =-.45$) and self-esteem ($r =-.41$) domains of self-concept (indicating that the larger the rating the lower the self-concept score). Thus, consistently with prior predictions and the discrepancy model, actual ratings of body image for the total sample of adolescent girls were negatively related to self-concept.

Although the discrepancy model specifies that ideal ratings of body image are positively related to evaluations of the self, results indicated that they were in fact negatively associated, hence suggesting that the smaller the ideal body image ratings the higher the self-concept. It is however, important to note that the positive relations between ideal ratings and self-concept generally occur when the actual and the ideal are within the same model, in which case the relations between ideal and self-concept could be spurious effects of the actual and self-concept associations, given that these relations are substantially stronger (this is the focus of section 2 analyses).

As indicated earlier, further support for the discrepancy model requires that the absolute discrepancy between actual and ideal ratings be negatively correlated
with self-concept when included in the same model with actual ratings, suggesting that large discrepancies are associated with low self-concept. Correlations for the absolute discrepancy scores for the total sample were shown to be small, with moderate sized correlations between discrepancies and physical appearance self-concept ($r = -.38, p < .05$), emotional stability self-concept ($r = -.24, p < .05$) and self-esteem ($r = -.34, p < .05$). Although the correlations between the discrepancy scores and self-concept were not as strong as the associations between actual ratings and self-concept, the pattern of relations for the model was consistent with the discrepancy model. However, the critical test for the self-discrepancy model is whether discrepancies contribute to self-concept beyond the predictions of actual and ideal ratings (this is tested below).

As in Study 1 (see chapter 5), BMI was shown to have few significant associations with the multiple dimensions of the self-concept. BMI was however, shown to have moderate sized associations with actual and ideal ratings of body image. This result indicates that the higher the BMI, the larger/heavier the actual and ideal ratings of body image reflecting realistic perceptions of what the body looks like. Correlations between group and self-concept were similarly small. The relations between group and silhouette matching task variables varied however, showing that group was negatively related to actual and absolute discrepancies (suggesting that clinical girls had higher discrepancies) but positively associated with ideal ratings (suggesting that clinical girls had smaller ideals). The association between group and the absolute discrepancy was the strongest, with results suggesting that the clinical group tended to have larger discrepancies between their actual and ideal ratings of body image. As expected, relations between BMI and Group were shown to be positive.
Table 6.1

*Factor Correlations for the Various Self-Concept Factors and the Observed Latent Variables*

<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>Ideal</th>
<th>[A-I]</th>
<th>BMI</th>
<th>Grp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phys</td>
<td>-0.27*</td>
<td>-0.16*</td>
<td>-0.08*</td>
<td>-0.15*</td>
<td>-0.01</td>
</tr>
<tr>
<td>Appr</td>
<td>-0.45*</td>
<td>-0.11*</td>
<td>-0.38*</td>
<td>-0.09*</td>
<td>0.17*</td>
</tr>
<tr>
<td>Osex</td>
<td>-0.13*</td>
<td>-0.07*</td>
<td>-0.05</td>
<td>-0.08*</td>
<td>0.05</td>
</tr>
<tr>
<td>Ssex</td>
<td>-0.20*</td>
<td>-0.06</td>
<td>-0.16*</td>
<td>-0.08*</td>
<td>0.09*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>Ideal</th>
<th>[A-I]</th>
<th>BMI</th>
<th>Grp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prnt</td>
<td>-0.28*</td>
<td>-0.04</td>
<td>-0.22*</td>
<td>-0.08*</td>
<td>0.07*</td>
</tr>
<tr>
<td>Hons</td>
<td>-0.14*</td>
<td>-0.06</td>
<td>-0.06</td>
<td>-0.07</td>
<td>-0.05</td>
</tr>
<tr>
<td>Emot</td>
<td>-0.24*</td>
<td>-0.01</td>
<td>-0.24*</td>
<td>-0.07*</td>
<td>0.19*</td>
</tr>
<tr>
<td>Math</td>
<td>-0.16*</td>
<td>-0.04</td>
<td>-0.13*</td>
<td>-0.12*</td>
<td>-0.06</td>
</tr>
<tr>
<td>Verb</td>
<td>-0.17*</td>
<td>-0.06</td>
<td>-0.13*</td>
<td>-0.04</td>
<td>-0.04</td>
</tr>
<tr>
<td>Schl</td>
<td>-0.27*</td>
<td>-0.10*</td>
<td>-0.19*</td>
<td>-0.14*</td>
<td>-0.09*</td>
</tr>
<tr>
<td>SE</td>
<td>-0.41*</td>
<td>-0.05</td>
<td>-0.34*</td>
<td>-0.10*</td>
<td>0.15*</td>
</tr>
<tr>
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<td>0.25*</td>
<td>0.56*</td>
<td>0.37*</td>
<td>-0.13*</td>
</tr>
<tr>
<td>Ideal</td>
<td>1.00</td>
<td>-0.08*</td>
<td>0.29*</td>
<td>0.13*</td>
<td></td>
</tr>
<tr>
<td>[A-I]</td>
<td>1.00</td>
<td>0.09*</td>
<td>-0.31*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
BMI | 1.00 | 0.23*  
Grp | 1.00  

Note. Phys=Physical Ability, Appr = Physical Appearance, Osex=Opposite sex relations, Ssex=same sex relations, Prnt= Parent relations, Hons= honesty and trustworthiness, Emot= emotional stability, Math=Math self-concept, Verb= verbal self-concept, Schl= general school self-concept, SE=self-esteem, Actual= actual ratings of body image, ideal=ideal ratings of body image, [A-I]= absolute discrepancy between actual and ideal ratings, BMI= body mass index, Grp = group, where the clinical sample=0, and the non-clinical sample= 1, SDQII-S is positively scored. Therefore, the higher the score the more positive the self-concept. *= statistical significance at p < .05.

Multi-group Confirmatory Factor Analysis

Given that the goodness of fit indices indicated that there was a good fit between the data and the a priori model for the total sample, a multi group CFA was conducted to examine the varying patterns of relations between the SDQII-S factors and actual, ideal and absolute discrepancies. This model therefore evaluated the goodness of fit with no invariance constraints.

The overall goodness of fit indices for the multi-group CFA indicated that there was a good fit between the a priori model and the data (Chi-square= 731.62, df=396, TLI= .98, CFI= .99, RMSEA= 0.041). As correlations between the self-concept factors have already been presented (see chapter 5, Table 5.2), only the factor correlations between the latent variables have been reported here. Factor correlations for the two adolescent samples indicated that there was a different pattern of associations between actual, ideal, absolute discrepancies and the multiple dimensions of self-concept (see Table 6.2). Although this analysis provided key insights into the respective patterns of correlations between the silhouette matching task ratings and self-concept for both clinical and non-clinical girls, it is important to recognise that
the clinical sample is small (particularly relative to the non-clinical sample). This and related implications are discussed further in chapter 8.

Relations between body image and Self-concept for the Non-clinical Sample

For the non-clinical sample, factor correlations between the latent variables indicated that the associations between actual ratings and self-concept were larger than those between ideal ratings and self-concept. Furthermore, despite being significant, correlations between ideal ratings and self-concept for the non-clinical sample were shown to be negative and relatively weak (see Table 6.2). However, the critical assessment for the self-discrepancy model is to determine whether discrepancies contribute to self-concept over and above actual and ideal ratings. This will be examined in subsequent analyses.

Additionally, the results indicated that BMI was negatively associated with all self-concept domains for the non-clinical sample. This association thus indicates that as BMIs increase for girls, their own evaluations of themselves across various domains decrease. The relations between BMI and actual and ideal ratings of body image, as expected, were shown to be positive, thus showing that perceptions of body image increased with increases in BMI. This was expected, as ratings of body image should be somewhat reflective of actual BMI.

Relations between body image and Self-concept for the Clinical Sample

For the clinical sample of adolescent girls, correlations revealed that actual ratings were most negatively correlated with physical appearance, self-esteem, parent relations and school self-concept. Relations between the absolute discrepancy and self-concept were also shown to be moderate in size and mostly significant. The relations between ideal ratings and self-concept were positive.
Analyses also indicated that there were positive relations between BMI and actual and ideal ratings for the clinical sample of girls. As body image ratings should be a reflection of BMI, positive relations between BMI and silhouette matching task ratings were expected. In this clinical sample however, these associations, although in the expected direction were all non-significant and relatively small in magnitude.

Table 6.2

*Factor Correlations Between Actual, Ideal, Absolute Discrepancies to the Multiple Dimensions of Self-Concept for both the Clinical and the Non-Clinical Samples*

<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th></th>
<th></th>
<th>Actual</th>
<th></th>
<th></th>
<th>Ideal</th>
<th></th>
<th></th>
<th>[A-I]</th>
<th></th>
<th></th>
<th>BMI</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>Non-clin</td>
<td>Clinical</td>
<td>Non-clin</td>
<td>Clinical</td>
<td>Non-clin</td>
<td>Clinical</td>
<td>Non-clin</td>
<td>Clinical</td>
<td>Non-clin</td>
<td>Clinical</td>
<td>Non-clin</td>
<td>Clinical</td>
<td></td>
</tr>
<tr>
<td>Phys</td>
<td>-.31*</td>
<td>-.03</td>
<td>-.15*</td>
<td>-.03</td>
<td>-.10*</td>
<td>.00</td>
<td>-.17*</td>
<td>.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appr</td>
<td>-.48*</td>
<td>-.67*</td>
<td>-.19*</td>
<td>.43*</td>
<td>-.35*</td>
<td>-.59*</td>
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<td>-.08</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Osex</td>
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<td>-.09*</td>
<td>-.11*</td>
<td>.04</td>
<td>-.05</td>
<td>-.04</td>
<td>-.13*</td>
<td>.11</td>
<td></td>
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</tr>
<tr>
<td>Ssex</td>
<td>-.19*</td>
<td>-.18*</td>
<td>-.10*</td>
<td>.13</td>
<td>-.13*</td>
<td>-.17</td>
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<td>.05</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Prnt</td>
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<td>-.53*</td>
<td>-.09*</td>
<td>.30*</td>
<td>-.19*</td>
<td>-.37*</td>
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<td>-.24</td>
<td></td>
<td></td>
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<tr>
<td>Hons</td>
<td>-.13*</td>
<td>-.29*</td>
<td>-.11*</td>
<td>.23</td>
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<td>-.21</td>
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<td>-.05</td>
<td></td>
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</tr>
<tr>
<td>Emot</td>
<td>-.22*</td>
<td>-.20*</td>
<td>-.06*</td>
<td>.15*</td>
<td>-.20</td>
<td>-.17*</td>
<td>-.12*</td>
<td>-.06</td>
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</tr>
<tr>
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<td>-.42*</td>
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<td>-.14</td>
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</tr>
<tr>
<td>Verb</td>
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<td>-.18</td>
<td>-.09*</td>
<td>.06</td>
<td>-.17*</td>
<td>-.10</td>
<td>-.03*</td>
<td>-.16</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Schl</td>
<td>SE</td>
<td>Actual</td>
<td>Ideal</td>
<td>[A-I]</td>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>-.12*</td>
<td>.23</td>
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<td>-.44*</td>
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<td>-.18</td>
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<td>-.14*</td>
<td>.39*</td>
<td>-.30*</td>
<td>-.52*</td>
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<td>-.16</td>
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<td>1.00</td>
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<td>.81*</td>
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<td>.21</td>
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<tr>
<td>Actual</td>
<td>1.00</td>
<td>1.00</td>
<td>.09*</td>
<td>-.65*</td>
<td>.29*</td>
<td>.05</td>
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</tr>
<tr>
<td>Actual</td>
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<td>1.00</td>
<td>.20*</td>
<td>.02</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

BMI 1.00 1.00

Note. Phys=Physical Ability, Appr = Physical Appearance, Osex=Opposite sex relations, Ssex= same sex relations, Prnt= Parent relations, Hons= honesty and trustworthiness, Emot= emotional stability, Math=Math self-concept, Verb= verbal self-concept, Schl= general school self-concept, SE= self-esteem, Actual= actual ratings of body image, ideal=ideal ratings of body image, [A-I]= absolute discrepancy between actual and ideal ratings. SDQII-S is positively scored. Therefore, higher scores are indicative of positive self-concept. *p >.05

However, the critical assessment of the self-discrepancy theory for body image is to determine the effects of actual, ideal and discrepancies on self-concept. Although correlations provide some preliminary indication of the effects, subsequent analyses (see section 2) were conducted to assess the significance of the contributions that actual, ideal and discrepancies make to self-concept.

Section 2: Assessment of the Self-Discrepancy Model

The Self-Discrepancy Model: Total Sample

To determine the individual effects of the actual, ideal and discrepancy ratings on the multiple dimensions of self-concept, and thus evaluate the self-discrepancy model, a series of three nested models were evaluated. In the first model, the effect of the actual ratings alone on self-concept was assessed (Model 1), followed by a model in which the effects of the actual and the ideal ratings were evaluated (Model 2).
Finally, to assess the self-discrepancy model in the complete sample of adolescent girls, a model in which the effects of actual, the ideal and absolute discrepancy was assessed (Model 3).

The analyses for all three models indicated that there was a good fit between the data and the a priori structures (see Table 6.3), and adding the additional paths did not affect goodness of fit indices significantly. Again, as the factor loadings for the SDQII-S were presented earlier for the total sample (see Table 5.2 from Study 1, chapter 5), more emphasis is placed on the beta coefficients (i.e., path coefficients) which are indicative of the independent effects of actual, ideal and absolute discrepancy ratings on self-concept.

Table 6.3

<table>
<thead>
<tr>
<th>Model</th>
<th>Chi-Square</th>
<th>DF</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
<th>Model Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3264.594</td>
<td>1311</td>
<td>.973</td>
<td>.976</td>
<td>.041</td>
<td>Actual to self-concept</td>
</tr>
<tr>
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<td>3202.805</td>
<td>1300</td>
<td>.974</td>
<td>.976</td>
<td>.041</td>
<td>Actual, Ideal to self-concept</td>
</tr>
<tr>
<td>3</td>
<td>3187.564</td>
<td>1289</td>
<td>.973</td>
<td>.976</td>
<td>.041</td>
<td>Actual, ideal, [A-I] to self-concept</td>
</tr>
</tbody>
</table>

*Note. DF=Degrees of Freedom, TLI=Tucker-Lewis Index, CFI=Comparative Fit index, RMSEA=Root Mean Square Error of Approximation, Actual=Actual Ratings of body image, Ideal=Ideal ratings of body image, [A-I]=absolute discrepancy between actual and ideal ratings of body image.*

Analysis of Model 1 indicated that actual body image ratings had a significant effect on all domains of self-concept (see Figure 6.1). The results of this model indicated that actual ratings of body image had the largest effect on physical appearance self-concept and global self-esteem (see Table 6.4). According to the self-discrepancy model, actual ratings of body image should have a significant negative
affect on self-concept. Hence, this result indicates that the larger the rating of actual body image (the larger I am), the lower the self-concept (on all domains of self-concept) and further supports both previous research findings and Hypothesis 2.3.1 (see chapter 3).

From the analysis of Model 2, in which the independent effects of actual and ideal ratings were simultaneously assessed, ideal ratings of body image were shown to have very few significant effects on the multiple dimensions of self-concept (once the effects of actual ratings were controlled). Results revealed that ideal ratings had a marginally significant effect on three domains of self-concept: physical ability, emotional stability and self-esteem (see Figure 6.2). The direction of these effects was shown to be inconsistent; ideal ratings were shown to have a negative effect on physical ability, but a positive effect on emotional stability and self-esteem (hence indicating that the larger the ideal body shape, the higher the self-esteem and the higher the scores on perceptions of emotional stability). Hence, although prior predictions based on the discrepancy model assert that ideal ratings have a positive effect on self-concept, the current analysis showed that the direction of the effects was variable (see Table 6.4). Based on these results of Model 2 there is some support for this traditional form of the discrepancy model.

Model 3 evaluated the effect of actual ratings, ideal ratings and absolute discrepancy scores on the multiple dimensions of self-concept. As discrepancy scores can be either positive or negative (that is, it is possible that girls have an actual body image rating that is either smaller or larger than their ideal rating), using the absolute discrepancies (unsigned value of the discrepancy) allowed for the examination of whether the size of the discrepancy affects self-concept. In order to support the discrepancy model, the discrepancy between actual and ideal body image should
explain more variance in self-esteem than actual or ideal ratings alone. Hence, in supporting the self-discrepancy model, Marsh and Hau (2005) in their analysis of the self-discrepancy model showed that regardless of whether the discrepancy between actual and ideal was negative or positive, a large discrepancy (in any direction) significantly affected self-esteem and other related domains of self-concept (e.g., body fat and physical appearance self-concept). Based on this research, in the current model (Model 3), I tested the statistical significance of the paths leading from actual, ideal and absolute discrepancy ratings to each of the 11 dimensions of self-concept.

The analysis involving all three latent variables highlighted that there were varying independent effects of actual, ideal and discrepancy ratings on self-concept domains (see Figure 6.3). More specifically, results indicated that although actual ratings had significant independent effects on all domains of self-concept (negative), absolute discrepancies also had a significant negative impact on three of the eleven self-concept domains (above and beyond the independent effects of actual and ideal ratings alone). These results thus suggest that while actual ratings negatively affect self-concept, ideal ratings have little independent effect on self-concept when the absolute discrepancy is included in the model. Further, the results indicated that large absolute discrepancies negatively impact evaluations of physical appearance, emotional stability and general self-esteem. Hence, although this model does not provide support for the traditional discrepancy model, which emphasises the signed discrepancy rating, the current results provide support for the elaborated self-discrepancy model posited by Marsh (1999). However, results also indicated that the strength of the effect of actual body image was stronger than the discrepancy on self-concept, particularly with regard to self-esteem and physical appearance (see Table 6.4). Therefore, ratings of actual body image were able to explain more variance in
self-concept than the discrepancy between actual and ideal for the total sample of adolescent girls.

Table 6.4
Path Coefficients for the Main Effects of Actual Ratings, Ideal Ratings and Absolute Discrepancy to Self-Concept

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual</td>
<td>Actual</td>
<td>Ideal</td>
</tr>
<tr>
<td>Phys</td>
<td>-0.28*</td>
<td>-0.20*</td>
<td>-0.20*</td>
</tr>
<tr>
<td>Appr</td>
<td>-0.53*</td>
<td>-0.56*</td>
<td>0.08</td>
</tr>
<tr>
<td>Osex</td>
<td>-0.14*</td>
<td>-0.11*</td>
<td>-0.09</td>
</tr>
<tr>
<td>Ssex</td>
<td>-0.24*</td>
<td>-0.24*</td>
<td>0.01</td>
</tr>
<tr>
<td>Prnt</td>
<td>-0.32*</td>
<td>-0.34*</td>
<td>0.07</td>
</tr>
<tr>
<td>Hons</td>
<td>-0.15*</td>
<td>-0.12*</td>
<td>-0.06</td>
</tr>
<tr>
<td>Emot</td>
<td>-0.29*</td>
<td>-0.34*</td>
<td>0.14*</td>
</tr>
<tr>
<td>Math</td>
<td>-0.18*</td>
<td>-0.19*</td>
<td>0.02</td>
</tr>
<tr>
<td>Verb</td>
<td>-0.20*</td>
<td>-0.20*</td>
<td>-0.01</td>
</tr>
<tr>
<td>Schl</td>
<td>-0.31*</td>
<td>-0.30*</td>
<td>-0.03</td>
</tr>
<tr>
<td>SE</td>
<td>-0.47*</td>
<td>-0.52*</td>
<td>0.12*</td>
</tr>
</tbody>
</table>

*Note. Phys=Physical Ability, Appr = Physical Appearance, Osex=Opposite sex relations, Ssex=same sex relations, Prnt= Parent relations, Hons= honesty and trustworthiness, Emot= emotional
Figure 6.1.

Significant path coefficients from actual to self-concept domains for the total sample (Model 1).

Note. Phys = Physical Ability, Appr = Physical Appearance, Osex = Opposite sex relations, Ssex = Same sex relations, Prnt = Parent relations, Hons = Honesty and Trustworthiness, Emot = Emotional Stability, Math = Math, Verb = Verbal, Schl = School, SE = Self-esteem, Actual = Actual Ratings of body image. Negative path = . Only significant paths are shown ($p < .05$). See Table 6.4 for path coefficients.
Figure 6.2.

Significant path coefficients from actual and ideal to self-concept domains for the total sample (Model 2).

*Note.* Phys = Physical Ability, Appr = Physical Appearance, Osex = Opposite sex relations, Ssex = Same sex relations, Prnt = Parent relations, Hons = Honesty and Trustworthiness, Emot = Emotional Stability, Math = Math, Verb = Verbal, Schl = School, SE = Self-esteem, Actual = Actual Ratings of body image, Ideal = Ideal Ratings of body image. — = Negative path, ——— = positive path. Only significant paths are shown ($p < 0.05$). See Table 6.4 for path coefficients.
Figure 6.3.

Significant path coefficients from actual, ideal and absolute discrepancy to self-concept domains for the total sample (Model 3).

*Note.* Phys = Physical Ability, Appr = Physical Appearance, Osex = Opposite sex relations, Ssex = Same sex relations, Prnt = Parent relations, Hons = Honesty and Trustworthiness, Emot = Emotional Stability, Math = Math, Verb = Verbal, Schl = School, SE = Self-esteem, Actual = Actual ratings of body image, Ideal = Ideal ratings of body image, [A-I] = absolute discrepancy between actual and ideal ratings of body image. —— = Negative path. Only significant paths are shown ($p < 0.05$). See Table 6.4 for path coefficients.

*Factorial Invariance for the Self-Discrepancy Model*

The focus of most studies of the effect of group on self-concept in the past has concentrated on the mean differences in self-concept scores between groups. However, very few researchers have examined group differences in factorial structure.
On a practical level, if equivalence in factorial structure is not established, there is no rationale to compare groups based on scores obtained from these instruments (see Byrne & Shavelson, 1987; Hattie, 1992; Marsh, 1993). Consequentially, if there is not structural invariance between the groups in terms of the effects of actual, ideal and absolute discrepancies for both the adolescent samples, there is no rationale to compare the model between the samples, and furthermore, variance indicates that the model can not be generalised.

Therefore, much like the invariance analyses that were conducted in Study 1 (see chapter 5) this series of tests involves systematically constraining parameters within the model to be invariant across both the samples. The most critical issue for this series of analyses was to determine whether there was invariance in path coefficients between actual, ideal, absolute discrepancies and self-concept domains. If paths between these silhouette matching task variables and self-concept are invariant, it suggests that the structural nature of these paths is equivalent for the two samples (or that the interpretation of the constructs is equivalent). Given that the critical issue in this analysis is the invariance of beta coefficients, thus providing support for the model in both the clinical and the non-clinical samples of adolescent girls, evaluation of the invariance of paths (beta coefficients) between the silhouette matching task variables and self-concept was undertaken. An examination of the invariance of the self-concept component of the model was not necessary here, given it had been established in Study 1 for both the clinical and non-clinical samples separately. Invariance for this model can thus be established if there is not a substantial or significant change in the goodness of fit indices when the various paths between the silhouette matching task variables and self-concept domains are systematically held invariant.
This series of analyses revealed that although there were changes in the goodness of fit indices when varying beta paths were systematically held invariant, these changes were very small and negligible (see Table 6.5). This result indicates that there is invariance for the paths between the silhouette matching task variables and self-concept domains. This result suggests that the self-discrepancy model can thus be generalised to both the clinical and non-clinical samples of adolescent girls. In order to more fully evaluate the nature of these small differences, I now turn to analyses of the MIMIC model.

Table 6.5

*Goodness of Fit Indices for the Analysis of Invariance across Groups*

<table>
<thead>
<tr>
<th>Model</th>
<th>Chi Square</th>
<th>DF</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
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<tbody>
<tr>
<td>1 BE NO INV</td>
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<td>484</td>
<td>.972</td>
<td>.978</td>
<td>.0435</td>
</tr>
<tr>
<td>1 BE (Act)= IN</td>
<td>964.406</td>
<td>495</td>
<td>.973</td>
<td>.977</td>
<td>.0439</td>
</tr>
<tr>
<td>2 BE (Id)= IN</td>
<td>947.279</td>
<td>495</td>
<td>.974</td>
<td>.978</td>
<td>.0430</td>
</tr>
<tr>
<td>3 BE ([A-I])= IN</td>
<td>958.989</td>
<td>495</td>
<td>.973</td>
<td>.978</td>
<td>.0438</td>
</tr>
<tr>
<td>4 BE (Act)= IN, BE (Id)= IN</td>
<td>971.103</td>
<td>506</td>
<td>.973</td>
<td>.978</td>
<td>.0431</td>
</tr>
<tr>
<td>5 BE (Id)= IN, BE ([A-I])= IN</td>
<td>969.355</td>
<td>506</td>
<td>.974</td>
<td>.978</td>
<td>.0432</td>
</tr>
<tr>
<td>6 BE (Act)= IN, BE ([A-I])= IN</td>
<td>970.898</td>
<td>506</td>
<td>.973</td>
<td>.978</td>
<td>.0432</td>
</tr>
<tr>
<td>7 BE (Act)= IN, BE (Id)= IN, BE ([A-I])= IN</td>
<td>981.490</td>
<td>517</td>
<td>.974</td>
<td>.978</td>
<td>.0427</td>
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Section 3: The Effect of Group, Actual, Ideal and Discrepancies on Self-concept: A MIMIC model approach

To assess the effect of group membership (clinical and non-clinical), actual, ideal, discrepancies on self-concept, a structural equation model was evaluated using a MIMIC approach. This model also included standardised interaction terms to determine whether self-concept varied as a function of group and BMI (grp x BMI), actual ratings and group (a x grp), ideal and group (I x group), and the discrepancy and group ([A-I] x grp). The goodness of fit indices for this model were well within the acceptable range (chi-square= 3481.14, df= 1529, TLI= .97, CFI= .98, RMSEA= .038).

As with previous analyses, the interactions model revealed that actual alone (i.e., when all other effects were controlled for) had a significant negative effect on all but one self-concept domain; Math self-concept. The effect of ideal ratings on self-concept revealed that ideal ratings alone had non-significant, negative effects on all eleven self-concept domains. Furthermore, the independent effect of the absolute discrepancy on self-concept was a significantly negative effect for physical appearance, emotional stability, verbal self-concept and general school self-concept. In addition, group was shown to have a significant negative effect on physical appearance, parental relations, emotional stability and self-esteem (as was previously found in Study 1 analyses, see chapter 5). This result indicates that for these domains of self-concept, clinical girls had significantly lower levels of self-concept in
comparison to the non-clinical adolescents. BMI was shown to have no significant effect on self-concept.

Evaluation of the interaction terms indicated that there was a marginally significant effect of ideal ratings x group. However, this effect was very small ($\beta = -0.09$). The [A-I] x group interaction was also shown to have a significant effect on physical appearance self-concept, indicating that for non-clinical girls, who had large discrepancies, physical appearance self-concept was low or alternatively, for clinical girls with a small discrepancy, physical appearance self-concept scores were higher. That is, as group increases from clinical to non-clinical, the larger the discrepancy, the lower the physical appearance score (see Figure 6.4). This interaction term however only accounted for 4% of the variance in physical appearance self-concept—hence, its effect on physical appearance is only small. All other interaction terms were shown to be non-significant (see Table 6.6).

![Figure 6.4: Interaction of [A-I]-by-group for physical appearance self-concept](image-url)
Table 6.6:
Path Coefficients for the Interaction MIMIC Model

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Phys</td>
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<td>.06</td>
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<td>-.09</td>
<td>-.06</td>
<td>-.00</td>
<td>-.00</td>
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<td>Appr</td>
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<td>-.18*</td>
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<td>.16*</td>
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<td>.05</td>
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<td>-.20*</td>
</tr>
<tr>
<td>Osex</td>
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<td>-.02</td>
<td>.04</td>
<td>-.02</td>
<td>.03</td>
<td>-.11</td>
<td>.05</td>
<td>-.02</td>
<td>-.11</td>
</tr>
<tr>
<td>Ssex</td>
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<td>-.02</td>
<td>-.05</td>
<td>.00</td>
<td>.04</td>
<td>-.07</td>
<td>.02</td>
<td>-.04</td>
<td>-.07</td>
</tr>
<tr>
<td>Prnt</td>
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<td>.07</td>
<td>.08</td>
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<tr>
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<td>-.04</td>
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<td>Emot</td>
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<td>.00</td>
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<td>-.19</td>
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<td>-.08</td>
<td>.01</td>
<td>.06</td>
<td>-.02</td>
<td>-.01</td>
</tr>
<tr>
<td>Verb</td>
<td>-.18*</td>
<td>-.01</td>
<td>-.10*</td>
<td>.06</td>
<td>.03</td>
<td>.06</td>
<td>-.01</td>
<td>-.03</td>
<td>-.14</td>
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<tr>
<td>Schl</td>
<td>-.22*</td>
<td>-.03</td>
<td>-.11*</td>
<td>-.02</td>
<td>-.08</td>
<td>.03</td>
<td>.06</td>
<td>-.01</td>
<td>-.08</td>
</tr>
<tr>
<td>SE</td>
<td>-.33*</td>
<td>.02</td>
<td>-.14*</td>
<td>.01</td>
<td>.16*</td>
<td>.03</td>
<td>.09</td>
<td>-.07</td>
<td>-.18</td>
</tr>
</tbody>
</table>

0 and non-clinical= 1. * = Significant path coefficients ($p < .05$). All parameter estimates (path coefficients) are presented in completely standardised form (see Byrne, 1998).

Further, subsequent evaluations of the chi-square differences between the models were conducted to determine whether the inclusion of the interaction terms significantly contributed to the model. The first interaction entered into the model was the group x absolute discrepancy interaction (as this was shown to have the largest significant effect on self-concept in the previous analysis). Chi square differences indicated that the inclusion of the interaction terms did not significantly improve the model (see Table 6.7), and hence, more support was provided for the simpler main effects model. Given this result, the interaction terms can be omitted from the model.

Table 6.7

<table>
<thead>
<tr>
<th>Model description</th>
<th>Chi square</th>
<th>DF</th>
<th>Δ Chi square</th>
<th>Δ DF</th>
</tr>
</thead>
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</tr>
<tr>
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<td>3508.08</td>
<td>1551</td>
<td>11.37</td>
<td>11</td>
</tr>
<tr>
<td>4 +3 interactions</td>
<td>3496.66</td>
<td>1540</td>
<td>11.42</td>
<td>11</td>
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<td>5 +4 interactions</td>
<td>3481.14</td>
<td>1529</td>
<td>15.52</td>
<td>11</td>
</tr>
</tbody>
</table>

Note: Main effects model= path model in which only Actual, Ideal, absolute discrepancy ([A-I]), group and BMI were included, +1 interaction = model with all main effects and the grpx[A-I] interaction term, +2 interactions= model with all main effects and 2 interaction terms (grpx[A-I] and grpxI), +3 interactions= model with all main effects and 3 interaction terms (grpx[A-I], grpxA and grpxI), +4 interactions= full interactions model with all main effects and 3 interaction terms (grpx[A-I], grpxA, grpxI and grpxBMI), DF= degrees of freedom, Δ Chi square= chi square difference, Δ DF= difference in degrees of freedom. All Chi square differences were shown to be insignificant at the $p = .05$ level.
Mediating Effects of Body Image Ratings on the Relations between Group and Self-concept

As low self-concept and distorted body image are cited as central characteristics of eating disorders, a path analysis was conducted to determine whether the previous effects of group (clinical versus non-clinical) on the multiple dimensions of self-concept are mediated by actual and ideal ratings of body image, and the absolute discrepancies between those ratings. According to Baron and Kenny (1986), there are several criteria for a mediating relationship between variables. Firstly, there should be a significant relationship between the independent and the outcome variable. Secondly, a significant relationship between the intervening variable and both the outcome and the independent variables should exist and thirdly, there is a non-significant (or substantially reduced) path from the independent variable to the outcome variable subsequent to the introduction of the mediating variable. Thus, to assess the mediating effect of silhouette matching task variables on the relationship between group and self-concept, two path models were examined. The first model (Model 1) assessed whether significant and strong paths existed between the independent variable and outcome constructs (see Figure 6.5 for a simplified representative diagram). These paths were then compared to those in the second model (Model 2) in which the intervening (or mediating) variables (silhouette matching task variables) were introduced. This second model was a partially mediating model and included both the indirect and direct paths from group to self-concept (see Figure 6.6 for a simplified representative diagram). In accordance with Baron and Kenny (1986), mediation required the paths from group to self-concept (as seen in Model 1) be reduced to non-significance (total mediation) or be substantially
reduced (partial mediation) with the introduction of the mediating silhouette matching task variables (Model 2).

![Figure 6.5.](image)

Representative diagram of Model 1 investigating the direct effect of group on self-concept (non-mediated model)

![Figure 6.6.](image)

Representative diagram of Model 2 investigating the partially mediated model

*Note: Body Image = Actual, Ideal and Absolute Discrepancies

**Model 1: The Direct Effect of Group on Self-concept**

To revise, in Study 1, analyses revealed that there was a significant effect of group on physical appearance ($\beta = .16, p < .05$), emotional stability ($\beta = .15, p < .05$), Math ($\beta = -.09, p < .05$), general school self-concept ($\beta = -.11, p < .05$) and self-esteem ($\beta = .13, p < .05$). These results suggested that there were significant differences between the two adolescent samples for various domains of self-concept with non-clinical girls scoring higher than clinical girls on physical appearance, emotional stability and self-esteem. Clinical girls however, were also shown to score significantly higher than their non-clinical peers on the academic scales of general school and math self-concept.
Model 2: The Partially Mediated Model

Model 2 assessed the direct and indirect effects of Group on self-concept domains, thus testing the mediating hypothesis. The goodness of fit indices for this model were shown to be well within the acceptable range, and indicated a good fit between the data and the model (Chi-square= 3272.71, DF= 1329, TLI= .97, CFI= .98, RMSEA= .041).

Analysis of the mediating model indicated that there were main direct effects of group on physical appearance, emotional stability, math and general school self-concept remained. However, when the silhouette matching task variables were entered into the model as mediating variables, the direct path from group to self-esteem became non-significant, suggesting that the group differences in self-esteem exist as a function of body image. Additionally, results indicated that the effect of group on verbal self-concept increased and became marginally significant, where the effect of group had not previously been significant. Further examination of the indirect effects, as recommended by Baron and Kenny (1986), indicated that the silhouette matching task variables mediated the relationship between group and verbal self-concept and self-esteem.

The Effect of Group on Actual, Ideal and Absolute Discrepancies

Examining the direct effects of group on the silhouette matching task variables (as a part of Model 2) indicated that there was a significant effect of group on actual ratings of body image, ideal ratings, and the absolute discrepancy between the ratings (see Table 6.8). These results indicated that the clinical group in fact rated themselves as being significantly fatter than non-clinical girls. Hence, although the invariance analysis indicated that there was invariance in the structure of the beta paths, this
analysis indicates that there is a difference in the mean ratings between the two groups.

Follow up regression plots further indicated that clinical girls thought that they were fatter than the non-clinical girls, even when they had equal BMIs (see Figure 6.7). This result echoes what much of the literature in the field has argued; that girls with anorexia do in fact see themselves as larger/heavier than they are and have distorted perceptions of what they look like. The plot also indicates that there is no interaction effect of group and BMI for actual body image ratings. The direct effects of group on ideal ratings also indicated that there was a significant effect of group, indicating that as predicted (see Hypothesis 2.2.1, see chapter 3), clinical girls had skinnier ideals than non-clinical girls. The regression plot (Figure 6.8) clearly shows this. This plot however, also demonstrates that there may be an interaction effect between group and BMI for ideal ratings of body image. Results of the mediating model also indicated that the level of discrepancy between the two ratings for the clinical sample was larger compared to the non-clinical sample, thus showing that there is a higher degree of body dissatisfaction amongst the clinical sample. The regression plot also confirmed that the clinical girls had larger discrepancies than non-clinical girls, and that there was no interaction effect between group and BMI (see Figure 6.9).
Figure 6.7.
Regression Plot: Actual ratings for clinical and non-clinical girls for equal points of BMI

Figure 6.8.
Regression Plot demonstrating Ideal ratings for clinical and non-clinical girls for equal points of BMI

Figure 6.9
Regression Plot demonstrating Absolute Discrepancy ratings for clinical and non-clinical girls for equal points of BMI
Table 6.8

*Path Coefficients for Group Effects Mediated by the silhouette matching task*

*Variables Model*

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<thead>
<tr>
<th>Variables</th>
<th>Model</th>
<th>Beta Coefficients</th>
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<tbody>
<tr>
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<td>Actual</td>
<td>Ideal</td>
</tr>
<tr>
<td>Phys</td>
<td>-.29*</td>
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</tr>
<tr>
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Summary

The primary aim of this study was to investigate the self-discrepancy model in different samples of adolescent girls. More specifically, this study attempted to determine whether the model could be applied to both clinical and non-clinical samples of adolescent girls, and thus investigated whether adolescents could differentially identify constructs such as actual, ideal and actual-ideal discrepancies. Furthermore, this study attempted to determine whether previous group effects on the various dimensions of self-concept could be mediated by the silhouette matching task variables and BMI.

Analyses of the effect of actual, ideal and discrepancies demonstrated that actual ratings of body image had the most significant effect on all domains of self-concept, as compared to ideal ratings and absolute discrepancies. These results indicated that the fatter girls thought their body actually was, the lower their self-evaluations on all facets of self-concept. Furthermore, analyses indicated that ideal ratings of body image alone did not significantly affect ten of the eleven self-concept dimensions. Analyses also indicated that absolute discrepancies had a significant effect on three of eleven self-concept domains, but that the effects were strongest for the domains of self-concept most logically related to body image (physical appearance, emotional stability, and global self-esteem). These results thus provide
support for the extended version of the self-discrepancy model as proposed by Marsh and Roche (1986) and Marsh (1999).

Furthermore, analyses investigating the mediating effect of the silhouette matching task variables for the relations between group and self-concept revealed that silhouette matching task had a significant mediating effect on the paths from group to verbal self-concept and self-esteem. In particular, the significant difference between groups in terms of global self-concept disappeared when the mediating effects of silhouette matching task ratings were controlled.

Analyses also showed that, as much of the literature suggests, clinical girls rated their actual body images as significantly fatter than their non-clinical peers who had the same levels of BMI. All girls indicated their ideal body image as thinner than their actual body image, but there was a larger discrepancy between the two ratings for clinical girls than for non-clinical girls. This has important clinical implications, as body image is often cited as a major factor in the development and maintenance of eating disorders, and the results of the current study have demonstrated that dissatisfaction (regardless of direction) and actual perceptions have more effect on self-concept than ideal ratings alone.
CHAPTER 7

FINDINGS 3: EXPERIENCES AND SUPPORT NEEDS OF ADOLESCENT GIRLS WITH ANOREXIA NERVOSA

Analysis of Questionnaire Responses

Introduction

Researchers have recognised the importance of exploring the experiences of sufferers of eating disorders to increase their understanding of these complex disorders (Haworth-Hoeppner, 2000; Hsu, 1992). To date however, much of the research investigating the experiences of eating disorder sufferers has involved adult patients, even though adolescent girls are the most affected population (see for example Hsu, 1992; Collins, 1998; Collins, 2000). Study 3 thus attempted to address this gap in the literature by exploring the experiences and support needs of adolescent girls who had been diagnosed with anorexia nervosa using a newly developed, vignette style questionnaire—the result of which is the Experiences and Support Needs Questionnaire.
for Young People with Eating Disorders (see Appendix 12). However, to reiterate, although this third study comprised three components, the first two components (analysis of the interview data and conceptual mapping of the literature) resulted in the development of the Experiences and Support Needs Questionnaire. Therefore, this chapter presents the findings of the analysis of the third and final component of the study: the administration and analysis of questionnaire responses. This chapter thus consists of two parts: first, the frequency analysis of the response data from the experiences and support needs questionnaire; and second, analysis of the open-ended responses. In part one of this chapter the patterns within the response data for 10 vignette themes are discussed separately. The analysis of open-ended responses exploring girls’ constructions and explanations of their experiences with anorexia will be presented in part two of this chapter.

Part One: Frequency Analysis

As discussed in chapter 4, responses from ten of the twenty-one vignettes were selected for analysis in this study. The vignettes and the frequencies of responses for each of the vignettes are presented in Table 7.1. The themes of the ten vignettes analysed comprised: how the eating disorder affected girls’ peer and family relationships (both within the clinic and outside the treatment environment); girls’ feelings about how the eating disorder affected their sense of control; and girls’ feelings about treatment (what helped them, what factors motivated them to recover, and what factors they felt did not help them). These ten vignettes were selected because they elucidate key aspects of the experiences and support needs of adolescent patients with eating disorders that have not been extensively explored in the literature. A frequency
analysis was not performed on the final item on the questionnaire, as it was an open-ended question, although subsequent content analyses were performed on the responses to this item (these are presented later in the current chapter).

The frequency analysis was based on a 3-point Likert scale indicating the degree of similarity between the vignette and girls’ experiences (i.e., ‘very much like what I have experienced’; ‘somewhat like I have experienced’; ‘not at all like what I have experienced’). Specific data filters were employed in the analysis to ascertain whether specific groups within the total sample responded differently to the various vignettes. A detailed description of the data filters used in the analysis was presented in chapter 4. Although the experiences of patients with bulimia nervosa is not a focus of this study, some responses from patients who had been diagnosed with bulimia were examined and reported to provide clarification of experiences for anorexic patients, or to highlight that certain experiences are exclusive to patients with anorexia.
Table 7.1

Frequencies for Analysed Vignettes and Emergent Themes

<table>
<thead>
<tr>
<th>Vignette number</th>
<th>Text</th>
<th>Recoded Emergent Themes</th>
<th>Sub-population description</th>
<th>Frequency for very much like</th>
<th>Frequency for somewhat like</th>
<th>Frequency for not at all like</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>I have lost a lot of friends through this. I just don’t feel like socialising and don’t feel that anyone including my friends really understands me anymore.</td>
<td>Social isolation and relationships with peers</td>
<td>Total 43.4</td>
<td>27.7</td>
<td>28.9</td>
<td></td>
</tr>
<tr>
<td></td>
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<td>I/P 39.1</td>
<td>BMI&lt;25 36.9</td>
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<td></td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>20&lt;BMI&lt;25 33.3</td>
<td>BMI&gt;25 75.0</td>
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<td>25.0</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Other girls can influence you a lot when you are a bit down. And sometimes they are really competitive in that they want to be the lightest and skinniest. Sometimes it seems that if you have put on some weight they think that you are weak and don’t want to talk to you. They try and teach you the tricks and stuff and then you just don’t get better.</td>
<td>Competition with other girls; Treatment environments</td>
<td>Total 34.1</td>
<td>30.5</td>
<td>35.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>I/P 43.5</td>
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<td></td>
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<td>41.7</td>
<td></td>
</tr>
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<td>27.9</td>
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<tr>
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<td></td>
<td>20&lt;BMI&lt;25 33.3</td>
<td>BMI&gt;25 50.0</td>
<td>25.0</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>My eating disorder sometimes makes me do things that I wouldn’t usually do, or don’t want to do. When the eating disorder is at its strongest, I don’t have any control over what I’m doing; it’s like having Control; Social</td>
<td>Total 69.9</td>
<td>24.1</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>I/P 69.6</td>
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<td>24.6</td>
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someone else controlling me. relationships;  

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ED having power and control;  

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ED as a part of them vs ED as separate identity  

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<tr>
<td>BN</td>
<td>25.0</td>
<td>41.7</td>
<td>33.3</td>
</tr>
</tbody>
</table>

6 I do not want to change and get better, but I’m scared that I will lose everything that I have worked so hard for, all the dieting all the exercising, I’m scared that all that effort will go to waste if I start to eat again.

<table>
<thead>
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<th>BMI&gt;25</th>
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<td>61.9</td>
<td>19.0</td>
<td>19.0</td>
</tr>
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</table>
7 My current psychiatrist/psychologist has time for me, and s/he puts in the effort. S/He understands me; I like that.

<table>
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</tr>
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<tr>
<td>BMI&gt;25</td>
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<td>25.0</td>
</tr>
</tbody>
</table>

9 The doctors don’t recognise that we are all different people, and that different things work for different people. They treat me like everyone else with an eating disorder and I get really upset about that, because I am not the same as them.

<table>
<thead>
<tr>
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<th>25.0</th>
<th>25.0</th>
<th>50.0</th>
</tr>
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<tr>
<td>AN</td>
<td>37.0</td>
<td>33.3</td>
<td>29.6</td>
</tr>
</tbody>
</table>
It doesn’t matter where you go for treatment, they set these goals for you, target weights and menu plans … but I need them to be a little bit more flexible, give me a bit of variety with meal plans and schedules, and give me options that I can choose from. I want to have some control over what is happening to me and I need realistic goals.

My relationship with my parents got worse because of the eating disorder. They didn’t understand what I was going through and didn’t know how hard it was for me. They thought that it would be simple to get better, because all I had to do was eat. They kept
saying, “All she needs to do is eat, just give her the food and make her eat it”. Like it was really easy for me. But later they went and got some books and talked to some friends about the disorder, and by finding out more about the disorder, it made it a lot easier for them and me because it helped them understand how difficult it was for me, even the little things, it seemed to make them more understanding and helpful.

I’m a bit worried about how my friends will treat me and how things will be at home. I know that everyone will be a bit more cautious around me, I just hope that they will accept me and that they will treat me the same. I just need them to be themselves and treat me the same as always.

<table>
<thead>
<tr>
<th>BMI</th>
<th>I/P</th>
<th>No I/P</th>
<th>AN</th>
<th>BN</th>
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<table>
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It’s not really about whether or not it’s your choice to have the illness, when it comes to getting better, it’s about being willing to get better. You can go to as many hospitals, psychiatrists and doctors as you like, but until you are ready to get better, nothing works. I don’t really know what it is, it’s just like you have to make the decision to get better; it’s a mental and emotional thing.

<table>
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</table>

Note. Total= total sample of respondents, Valid BMI= respondents who indicated their weight and height, BMI<25= those respondents who had a calculated BMI of less than the lower limit for overweight, I/P = respondents who have received inpatient treatment, No I/P = No inpatient treatment, AN = Anorexic respondents, BN = Bulimic patients, BMI<20= respondents who had a calculated BMI of below 20 kg/m2 (lower limit for healthy BMI), 20<BMI<25= respondents with calculated BMI within the healthy range, BMI>25= respondents with calculated BMI within the overweight range.
7.1.1 Vignette 3: Peer relationships (outside of the clinic with non-clinical peers)

This vignette was developed to reflect girls’ feelings and perceptions of social isolation. As shown in Table 7.1, 43.4% of the respondents indicated that they felt they had lost many of their friends whilst being ill. This result is reflective of some research in the eating disorders field. For example, in a survey style study, Swift et al. (1986) showed that social isolation throughout the illness trajectory increased for patients diagnosed with eating disorders. Furthermore, research has highlighted that there is a marked level of social insecurity amongst patients, in which sufferers tend to feel that their social relationships are disappointing and of poor quality. Reports have also indicated that patients have increased interpersonal distrust in which patients express feelings of social alienation and find it difficult to maintain and form close relationships (e.g., Bruch, 1957; Garner, 1991). Some authors have reasoned that this is because patients’ strict behaviours towards food and exercise often create a barrier between themselves and their peers, thus preventing social interaction and development (Crisp, 2005).

The pattern of responses given by girls who had received inpatient care and were thus physically separated from their friends, indicated that they felt more socially isolated and withdrawn from their friends, as compared to those girls who had not been treated in the inpatient facilities. This pattern of responses suggests that being confined as an inpatient can increase the isolation that is experienced by inpatients, by creating a further barrier between themselves and their peers. However, girls are admitted for inpatient care because they have more severe symptoms. Hence, greater levels of social isolation amongst this group may also be a consequence of the severity of their condition.
7.1.2 Vignette 4: Peer relationships (within the clinical setting)

This vignette explored girls’ relationships with their peers within the clinical setting, and the influence that other eating disordered patients may have on them with regard to putting on weight and utilising various tricks and strategies to keep their body weight low. The frequency analysis revealed that comparisons, and competition amongst peers to be the thinnest patient, occurred more frequently in the respondents who had received inpatient treatment (43.5%) than those who had received outpatient care (15.8%). 34.1% of respondents reported that there were instances where they felt that their peers negatively influenced them and tried to compete to be the patient who weighed the least. This pattern of responses has important implications for clinical practice because it suggests that the interactions that occur between girls within the inpatient environment encourage comparisons and competition, which can have a detrimental effect on recovery.

7.1.3 Vignette 5: Control and Eating disorders

This vignette describes one particular construction of eating disorders and the perceived control that it can exert over the patient and their behaviour. Regardless of the data filter employed, the pattern of responses indicated that the majority of the respondents felt that they had no control over their bodies and minds, and that they were controlled by their eating disorder (69.9% indicated that their experiences were very much like the experience described in the vignette, 24.1% indicated that their experiences were somewhat like that described in the vignette). For inpatients and those who have received psychological treatment, this pattern of results may be reflective of treatment, as it is common in psychological treatment to encourage patients to perceive the eating disorder as separate to the individual. However, the distribution of responses does indicate that this perception is not an experience that is
exclusive to anorexic patients or to inpatients. Alternatively, the pattern suggested that the recognition and identification of the eating disorder as a separate entity, provided patients with an avenue that makes it possible to blame something other than themselves for the things that they are doing and how they are behaving (Colton & Pistrang, 2004).

7.1.4 Vignette 6: Ambivalence and fear about changing and getting better

This vignette detailed the feelings that girls may have had about changing and improving their condition. It highlights the ‘effort’ that had been put into becoming eating disordered and becoming emaciated. Over half of the respondents who reported their BMI was within the healthy range indicated that they had felt ambivalent about changing to get better and reported feeling frightened that all of their efforts to lose weight would have gone to waste. This pattern of results is similar to the findings of a recent study by Colton and Pistrang (2004) exploring the experiences of patients. It also reflects the motivation to change literature (e.g. Ward et al., 1996) which indicates that patients often experience much conflict about recovery and, even when actively engaging in behaviours to improve their condition and wanting to recover, they tend to be anxious about letting their anorexia go.

Although the pattern of responses was less pronounced for respondents who had been diagnosed with bulimia, it does suggest that aspects of the vignette did apply to their experiences (41.7% indicated somewhat like). These patterns of results are important because they suggest that the ambivalence towards change may be a significant impediment to recovery and that impediment is not exclusive to anorexic patients, but also applies to bulimic patients.
7.1.5 Vignette 7: Girls’ views of Psychiatrists and Psychologists

This vignette described girls’ feelings about their psychiatrist/psychologist and some of the characteristics of therapists that girls perceive as helpful. The responses for girls who had been diagnosed with anorexia illustrated that they felt that their therapist understood them and that therapists put in the effort to interact with them (40.7% very much like, 29.6% somewhat like). The pattern of responses however, indicated that girls who had been diagnosed with bulimia (54.5%) did not feel that their therapists understood them or made attempts to interact with them. This pattern may be evident because psychological treatment is more common for anorexic patients and those who have received inpatient treatment. In these cases, patients would have had more time and opportunities to develop effective therapeutic relationships with their treating clinicians. Further, these results highlight the difficulty that patients and therapists have in trying to develop good and effective therapeutic relations. Responses thus indicate that clinical teams need to invest time and energy to establish rapport and respect with their patients so that their services can be considered more helpful.

7.1.6 Vignette 9: Doctors’ treatment of Patients

This vignette addressed the perception that doctors are unable to recognize that patients are all different and the importance of individualised treatment models. The pattern of responses indicated that although some patients perceive treatment as categorising, this was not the view of all patients. The response patterns were evenly distributed for the population of anorexic respondents, but responses of those diagnosed with bulimia nervosa were skewed towards somewhat like (41.7%) and not at all like (33.3%). This response pattern suggests that although girls diagnosed with anorexia might like their therapists and feel that they understand them more as
individuals (see 7.1.5) they believe a more individualised method of treatment would be desirable. This pattern of responses might be explained by the fact that treatment programs for anorexia often involve forced re-feeding, including strict high calorie meal plans or nasogastric feeding for all patients. Girls would thus perceive this as being a ‘one size fits all’ treatment model, regardless of the variations in the amount of food that each patient is prescribed.

7.1.7 Vignette 10: Menu plans and treatment goals for weight gain

This vignette explored girls’ thoughts and feelings regarding meal plans and target weights. Most of the respondents who had received inpatient treatment indicated that their menu plans needed to be more flexible and that their goals for weight gain needed to be more realistic (43.5% very much like and 37.0% somewhat like). The inverse trend was evident for those patients who had not received inpatient treatment (42.1% not at all like). As the primary aim of the hospitalization and thus inpatient care is to increase the patients’ weight and to stabilise the patients’ condition, it is expected that the menu plans and target weights might seem comparatively rigid to inpatients. Consequently, this pattern of responses may be an artefact of the treatment environment that respondents had been exposed to. Further, over half of the respondents who had a BMI below the minimum healthy range, indicated that the vignette was very much like their experience. It is likely that these participants had been exposed to more stringent treatment regimes because of their low body weight ratios, and thus the high percentage of respondents that indicated that their experience was very much like the vignette is not surprising. Although outpatient treatment also involves the provision of menu plans and target weights, patients are not under constant surveillance and consequently may feel that they have more freedom to choose what they are eating and the activities that they participate in.
7.1.8 Vignette 11: Parents’ understanding and reaction to the disorder

This vignette investigated girls’ perceptions of their parents’ understanding of their eating disorder and recovery at the initial stages of the disorder and throughout the illness trajectory. The pattern of responses indicated that in most cases, patients have felt that their parents have not understood the nature, magnitude or severity of the disorder. Additionally, many respondents felt that a part of their parents’ lack of knowledge and understanding about the disorder involved the belief that recovery was a simple process of eating.

Although there has been paucity in the research investigating parents’ understandings and experiences with their child’s eating disorder and other chronic illnesses, recent studies investigating the experiences of parents caring for eating disordered patients have detailed that many carers and parents underestimate the seriousness and the effect that the disorder has on the individual. Additionally, parents admit to not knowing much about the eating disorders themselves, to start with, and that the process of trying to find out more about the eating disorder influenced their coping strategies (Perkins, Winn, Murray, Murphy, & Schmidt, 2004). Furthermore, parents explained that they struggled trying to identify which of the behaviours that their child exhibited can be attributed to the eating disorder and which ones are normal teenage behaviours (e.g., Perkins et al., 2004).

Furthermore, as parents and the family are commonly involved in treatment for adolescent patients they are generally assigned the role of ensuring that all meals are sufficient and that their children are eating the meals that are provided (Cottee-Lane, Pistrang, & Bryant-Waugh, 2004). Given this role, it is plausible that girls may feel that their parents are focused more on the eating aspect of the disorder than any other aspect.
7.1.9 Vignette 14: Fear of peers’ reactions to the eating disorder

This vignette described girls’ anxieties about how peers, friends and family members might treat them upon diagnosis, and the possible change in these significant relationships as a consequence. The vignette also describes the desire for these relationships to remain the same despite the diagnosis of an eating disorder.

The majority of respondents who had received inpatient care indicated that they were concerned about how others would react to their absence and the reason for their absence (57.8% very much like). Researchers have highlighted that there is a social stigma associated with being diagnosed with a disorder such as anorexia nervosa, suggesting that peers may believe that the individual is restricting her eating as a cry for attention (e.g., Rich, 2003). Moreover, theories that attempt to explain the causal factors associated with the anorexia imply that a certain level of dysfunction is attributed to the individual and thus girls may feel anxious about being labelled as abnormal or dysfunctional (Rich, 2003).

The reverse pattern of responses was evident for outpatients (31.6% not at all like) and bulimic patients (45.5% not at all like). This may be because it is easier for bulimic patients to hide their bulimia from their friends and family because they are able to consume food with their family and friends. Further, because outpatients are not removed from their daily school and home environments, their fears may be centred on issues other than those of re-integration. This pattern of responses thus highlights that these feelings may be exclusive to those patients with anorexia nervosa or those who have received inpatient care and has clinical implications for the psychological support given to inpatients (see chapter 8 for a discussion of the clinical implications of these findings).
7.1.10 Vignette 16: Recovery as an individual psychological and emotional process

This vignette examined girls’ perceptions of recovery and the factors involved in the recovery process. The passage positions recovery as a psychological and emotional process that the individual must be ready to undertake.

The pattern of responses indicated that the majority of the participants felt that they had to be ready and motivated to change, for treatment to be effective (79.3% very much like). This pattern of responses has important clinical implications in that readiness and motivation to change appear to have a large impact on the efficacy of treatment, particularly in the minds of the patients. Previous literature has also emphasised that the patient needs to be ready to change and get better before treatment methods are effective (Reiger, Touyz, Schotte, Russel, Clarke, Kohn, & Griffiths, 2000; Jordan et al., 2003; Reiger et al., 2002). Furthermore, this pattern of responses highlights that it may be beneficial to employ the transtheoretical model of change when exploring the recovery process for anorexia nervosa. As the model explains, the participant undergoing the process of change must make a conscious decision to change their maladaptive behaviours and thus put in place the mechanisms to change their behaviours. If a person is not ready to change, is forced into changing their behaviours, and thus does not understand the need to change, then the chances of relapse and maintaining the maladaptive behaviours increase. However, if a patient is in a medically compromised state, issues regarding re-feeding and nutrition also need to be taken into account and thus, although patients may not be ready to recover and change their behaviours, it is also imperative to ensure that the patient is medically stable.
Part Two: Content Analysis of Open-ended Responses

The second part of the vignette questionnaire analysis involved a content analysis of the open-ended responses, in which respondents described their own experiences. The ten vignette items and the open-ended question were analysed and coded, as described in chapter 4, resulting in four main conceptual categories containing a number of sub-codes and that tracked the experiences and support needs of respondents throughout the illness trajectory: ‘being anorexic’; ‘treatment’; ‘recovery’, including the factors that girls found motivated them to get better, and what recovery actually means to them; and ‘relationships with peers and parents’, which included participant descriptions and perceptions of their relationships with others and in particular, how the eating disorder affected their relationships with their friends and family.

7.2.1 Being Anorexic

*Being anorexic* was a category of codes that emerged from the data containing descriptions of respondents’ experiences with anorexia, including their thoughts, understandings and feelings towards the disorder both during the illness trajectory and through the recovery process. Within the *being anorexic* category, there were two different sub-codes: definitions and constructions of anorexia; and fears and anxieties regarding others’ reactions to their girls’s eating disorders. The first sub-code described participants’ understandings and constructions of anorexia and how they defined the disorder to themselves and others; how these constructions affect their daily experiences and how they are defined by the disorder. The second sub-code included participants’ descriptions of their fears and concerns about how others would react to the disorder. These perceptions affect how girls express the disorder to others and their interaction with others whilst they are anorexic. As Goffman (1961; 1968)
suggests, when the reactions of others to an illness are internalised, these reactions can act to structure how an individual not only experiences the disorder, but also their identity as someone with the disorder.

7.2.1.1 Constructions and Definitions of Anorexia

Within the sub-category of constructions and definitions of anorexia, four different constructions of anorexia nervosa emerged from the participants’ responses: anorexia as part of the individuals’ identity; anorexia as an alternative identity; anorexia as a body issue; and anorexia as a battle for control over the body.

When describing what anorexia meant to them, some respondents conveyed that their anorexia was a part of their identity, saying that “it makes me, me”. This construction indicates that some participants did not see their anorexia as an illness that affected them, but as an entity that defined who and what they were as a person, that was an inseparable part of them.

Such a construction of anorexia as a defining characteristic coincides with cognitive theories on anorexia in which theorists (e.g., Selvini-Palazzoli, 1974; Orzolek-Kronner, 2002) argue that for some individuals the development of anorexia is a consequence of maladaptive identity development in which anorexia becomes their functional identity.

Family Systems theory contends that anorexia is a result of an individual’s attempt to establish a sense of control over their lives and to develop and maintain a separate identity from both their parents and their family (Bruch, 1977; Weinreich, Doherty & Harris, 1985; Wenschelblatt, Gurnick & Simon, 2000). Hence, anorexia is something that differentiates them from others, and a personal characteristic. If anorexia is separated from the person, then the individual feels that they do not have
an identity and loses their sense of worth, as one respondent highlighted: “I wont have anything, if I give up the eating disorder”.

The case in which an individual recognises their eating disorder as an aspect of their identity can be termed egosyntonicity (Tan et al., 2003). Most often, egosyntonicity is seen in patients who are in the more severe stages of the disorder (Beumont; Tan et al., 2003). Researchers have reasoned that these patients are often non-compliant because many clinicians adopt the narrative therapy approach to treatment, in which the patient and their family are encouraged to see the disorder and the person as separate entities (Lock, Epston & Maisel, 2004; Colton & Pistrang, 2004). This analysis has clinical implications, because patients who see the anorexia as a part of their identity may see the treatment as a rejection of themselves, or the eradication of a part of themselves.

Some participants identified their eating disorder as an alternative identity that they preferred to show to others to avoid revealing their true selves: “I am very scared of rejection and the best defence is to hide behind the disorder”. This construction suggests patients consider the identity which includes anorexia will be preferred by others or that the anorexia acts as a shield that protects and hides them from public scrutiny. This construction of anorexia suggests that the person has dual identities and may feel that they are not good enough without the anorexia.

The construction of anorexia as a separate identity that can act as a shield, has been documented in both aetiology and recovery literature, for example, Lamoureux and Bottorff (2005) identified that recovering patients are often overcome by feelings that they are not good enough without the anorexia (their ‘real selves’) and hence are reluctant to engage in any recovery processes. Furthermore, Strober (1997) theorised that anorexia can be seen as a security blanket for patients offering them a feeling of
protection from the world and from being exposed to failure and disappointment (see also Serpell, Treasure, Teasdale & Sullivan, 1999). Although research has indicated that this construction of anorexia is somewhat common, this research has been conducted in the adult population of patients. The current analysis indicates that the deployment of anorexia as an alternative identity is also evident amongst female adolescent patients.

The third construction of anorexia, ‘Anorexia as a body issue’ centred on appearance. Patients defined anorexia as a body issue, explaining that they have anorexia because they “want[ed] to be skinny” and because it allows them “to be attractive”. These definitions and explanations of anorexia coincide with many lay theories about anorexia and other eating disorders, which suggest that patients are victims of sociocultural influences and pressures that encourage them to be thin, and emphasise that being thin equates to being successful and attractive (see Serpell et al., 1999; Tiggemann, 1992).

Some patients constructed anorexia as an achievement. Participants highlighted that their pride at being anorexic meant that to recover would mean that they were failures: “… it feels like what I have done is the greatest achievement and eating again will make me the biggest failure”. Furthermore, participants indicated that the anorexia enhanced their identity and feelings of self-worth, explaining that “it felt like the new improved ‘me’, and if I ever stopped what I was doing, I’d be a failure”.

Feelings of achievement and pride can be related to the amount of control that patients feel they have over their bodies. For example, patients may feel empowered by the fact that they can ignore their bodily urges and believe that they can further control the environment around them (Serpell et al., 1999; Burns, 2004). Very little
research however, has thoroughly investigated the notion of pride and achievement within the adolescent population. This construction of anorexia highlights the issues that clinicians face when attempting to treat girls, as recovery from anorexia may be equated with failure to remain in control of the body and weight.

7.2.1.2 Impact of Anorexia

How anorexia impacts the individuals’ everyday life and interactions is an integral aspect of being anorexic. Part of girls’ constructions of being anorexic included descriptions of the control that the disorder had over various aspects of their emotional functioning, their minds, their bodies, and their interactions with others.

Girls illustrated that their emotional functioning was altered by their anorexia and that they became more emotional and upset more frequently: “… sometimes my ED [eating disorder] makes me get upset over things that wouldn’t normally upset someone”. They also reported emotional outbursts that were not characteristic of themselves: “… anorexia completely controlled me. It makes me violent towards my mum and I had no control over my body”.

Similar accounts of the influence of anorexia on emotional functioning have been described in the eating disorders literature, particularly in autobiographical writings (see for example Hughes & Hughes, 2004). More recent qualitative exploratory studies suggest that patients express confusion about the control that the anorexia exerts over their behaviour and emotional functioning, highlighting that patients can be unpredictable and beyond their own control (see Serpell et al., 1999; Colton & Pistrang, 2004).

Girls’s accounts, in which they attribute their negative behaviours to the eating disorder, highlight one commonality: externalising the anorexia from the self. These accounts provide some clarification on the findings from the frequency analysis, in
which the majority of the girls felt as though the eating disorder controlled them. Their descriptions suggest that the process by which patients can externalise the eating disorder provides them with an avenue to transfer the blame for their eating disordered and negative behaviours and actions to the anorexia:

Through various counselling sessions I was able to identify that it wasn’t really me doing the strange things that I was doing while I had my eating disorder. It was ‘miss anorexia’.

Another participant explained:

It’s out of my control most of the time. I just do what my voice tells me to do: ‘Ana’, I call her. She tells me what I have to do—and if I don’t follow orders—consequences have to be made—exercising, not eating for the rest of the day.

These accounts of being anorexic are integral to how patients may understand and construct their eating disorder as an identity that is separate from the ‘true’ self that controls their actions. Narrative therapy typically employs this method of externalisation so that clients can “escape their problem-saturated situation” (Lock, Epston, & Maisel, 2004, p. 279) and deal with their anorexia objectively as a separate entity rather than as an aspect of themselves (Lock, Epston, & Maisel, 2004).

In the cases where girls separated themselves from their anorexia, they referred to it as the negative or evil aspect of the self: “It is like someone else is controlling you. The ‘evil me’ as I referred to it, told me I was fat and that I was a failure as anorexic, which made me want to starve more”. Participants further
explained that having anorexia was like having a war within the self, a battle between the mind and the body:

I often described anorexia as a separate part of myself, there was me and then there was the anorexia. There was a constant battle between myself and the anorexia for power and control over my body.

This analysis suggests that patients may in fact understand their disorder differently, which may in turn affect the way that they respond to their treatment, and may impact the efficacy of various treatment methods. Clinicians and practitioners hence face the challenge of understanding the way that patients may construe and understand their disorder in order to develop effective programs for treatment.

7.2.1.3 Fears and Anxieties

Forming an integral part of their experiences of being anorexic, participants also highlighted their fears and concerns about how others would respond to their eating disorder, and how others would treat them. The reactions of others would influence how they might choose to express their disorder, and how they would interact with others. The responses given by participants illustrated that they wanted to be treated normally by their friends: “I was worried my friends were going to treat me as a freak—that they would act different because I now had a disease most people didn’t understand … ”

Although the participants indicated that their behaviours were affected by their anorexia and some felt their anorexia made them more attractive, girls emphasised that they did not want anyone to treat them differently. In their responses, participants expressed a degree of confusion and sadness regarding the change in the way that
others treat them. Girls’ descriptions revealed that they were aware that their peers may not understand their eating disorder and explained that people no longer know how to respond to them and how to treat them: “… people were weird, they didn’t know what to say or how to treat me”. Girls explained that they found it upsetting and frustrating when they were treated differently by their friends: “having them treat you differently is extremely upsetting and it makes it hard”.

Further emphasising how important it was to be treated normally, respondents indicated how lucky and thankful they were to have their friends and family treat them like they always had: “… they [friends] didn’t treat me any different from before. I was so lucky because it’s like there’s nothing wrong”.

These accounts offer some insight into the concerns and feelings that patients have regarding the anorexia and its impact on their interactions with others. It seems that respondents see the anorexia as a part of their identity and do not want friends and family to respond to it as a problem. These descriptions also offer some insight into the frequencies, which indicated that girls had concerns about others’ reactions to the disorder and the possible social stigma attached to their disorder (see Part 7.1.9).

7.2.2 Treatment

Anorexia nervosa is a complex and severe illness that is difficult to treat (Le Grange and Gelman, 1998). When a patient’s health is at risk or is unstable, they are often admitted into an inpatient hospital program in an attempt to stabilise the patient’s condition (Colton & Pistrang, 2004; Castro, Gila, Puig, Rodriguez, & Toro, 2004). Inpatient treatment often involves very intense surveillance, re-feeding regimes, and psychological and medical treatment, and requires a multidisciplinary team approach (Bravender, Robertson, Woods, Gordon, & Forman, 1999). When patients are admitted to hospital, they can be admitted to a ward that is specifically for
eating disorders, or alternatively placed on a ward surrounded by patients who have also been diagnosed with an eating disorder (anorexia, bulimia or binge-eating disorder). Patients with anorexia nervosa are often exposed to a multitude of treatment methods and approaches. Despite many studies investigating the efficacy of various treatment methods, very little is understood about the most effective methods, and very few studies have investigated patients’ perspectives of treatment or which aspects of the treatment they find helpful and supportive. This category comprised codes that described various aspects of treatment that the respondents had received throughout their illness trajectory.

It has been argued that having an eating disorders ward in which patients are able to support each other is beneficial for patients (see for example Colton & Pistrang, 2004). This assertion was supported by a small number of respondents in this study, who highlighted that being with people who could understand them, and understand the disorder that they had: “… you can relate to them …” Other participants highlighted that fellow patients were helpful and supportive in encouraging recovery and improvement, thus emphasising the benefits of having the support of others during the treatment period, people who understood what it meant to have to eat the meals:

… when I was in hospital all the girls in there really wanted to get better so we all supported and comforted each other and ate all meals together for encouragement.

However, although it is intuitively appealing to believe that the ward environment provides patients with social support, respondents illustrated that there was a great deal of competition between the girls, to be the skinniest patient: “I always want to be the skinniest at all costs”. Others explained: “… during hospital
[stays] we were always competing against each other about who is the sickest, skinniest, who eats less etc”.

Girls explained that this underlying competitiveness between patients affected how they interacted and socialised with each other: “There is an unspoken knowledge that each of you is aiming to be thinner than the rest … girls will be happy to converse with you if your weight makes them feel better about themselves”. Other girls explained that it was like a game that they or others wanted to win: “I found that if you put on weight they would actually like you more—because they were winning”. These accounts provide further explanations of the patterns that were evident in the frequency analysis presented earlier (see part 7.1.2).

The negative influence that the hospital environment and fellow patients may have was further emphasised by the suggestion that the patients would teach each other tricks to lose weight or fool the clinicians about their weight gain: “ … I learnt how to calorie count, water load, sneak out and exercise etc. from other eating disorder patients’ and ‘we would help each other get away with cans”. Many participants recognised that this competition with fellow patients however, hindered the recovery process: “I was taught tricks which slowed down my recovery—it was always the lighter you are the better you feel”

The competitiveness between the patients that has been indicated here is echoed in the eating disorders literature. For example, in investigating the experiences of adolescent inpatients with anorexia nervosa, Colton and Pistrang (2004) found that it was detrimental to be surrounded by people with the same condition because of the level of competition and comparisons between individuals. Hence, although the hospital environment may provide patients with some social support, particularly from other girls they can relate to, the inpatient environment can also reinforce eating
disordered behaviours and attitudes that hinder treatment and recovery. This description provides some explanation for the patterns of responses obtained in the frequency analysis, which suggested that most respondents regardless of diagnosis do experience some ambivalence towards recovery (see part 7.1.4).

Despite the competition and underlying desire to be the “best anorexic” it seems that not all patients are vulnerable to the negative influences of fellow inpatients. For example, some girls expressed a desire to get better and recover and thus resisted the pressure to continue to engage in the eating disordered behaviours:

I have been taught or told what I should eat by others (anorexia sufferers) but I didn’t listen to them, I didn’t care what they thought. I thought they were weird and all I wanted to was to be healthy and out of the hospital.

In contrast to those girls who did not like and tried to escape the hospital environment, inpatient treatment facilities sometimes offered patients a home away from home: “there was so much pressure/tension at home getting away (in hospital) was the best thing 4 me”. Others described that they were afraid of going home: “Going home was my biggest fear... I ended up wanting to go back to hospital, I became so institutionalised” and that the hospital provided them with somewhere safe to live: “The other girls and I became so close, I didn’t want to leave it because it was a safe world”. These statements illustrate that girls’ perceptions of the hospital environment vary and that patients who have been on eating disorders wards may become comfortable with the environment and subsequently develop a sense of security within the clinic. For these patients, once this sense of security has been
established, it can be difficult for patients to leave the hospital and go back to their homes and schools.

Castro et al. (2004) highlighted that intense inpatient treatment has the potential to disrupt the everyday social functioning of adolescents and thus lead to abnormal adjustment patterns in school, at home and in social situations. These excerpts highlight that this may be the case, and thus provide a rationale for shorter admissions for patients. A concern with shorter admissions however, is that it tends to increase the likelihood of readmission for anorexia during adolescents (Wickizer, Lessler & Travis, 1999), which may disrupt adolescent social functioning further. Two approaches for addressing this dilemma are to provide patients with more intense outpatient treatment as an alternative to inpatient treatment or to offer girls practical classes in interaction and how to go back into the world beyond the hospital.

Research to date has produced inconsistent results as to which therapeutic methods are effective for eating disordered patients, particularly adolescent sufferers (Colton & Pistrang, 2004; Hsu, 1992; 2001; Lemberg & May, 1991; le Grange & Gelman, 1998). Hence, eating disordered patients are often exposed to many different types of treatment, with varying degrees of efficacy. Respondents in this study identified two main types of treatment: one that centred on the body and eating; and the other focused on psychological, mental and emotional aspects of the eating disorder.

Commonly, treatment involves treating the physical aspects of the disorder and the unhealthy eating behaviours associated with the disorder. Many respondents identified that this sort of treatment was the main focus of hospital programs, particularly inpatient programs: “it [treatment] was mostly about eating and my behaviours towards eating”. Respondents emphasised that this sort of treatment was
generally not helpful because they would be forced to eat and gain weight in the clinic, and then once they left they would lose the weight again:

I was basically forced out of anorexia, as I was forced to eat, pressured and banned from exercise but what people don’t realise is gaining weight is not always the best answer, it does not mean I’m over it. I just developed other eating disorders.

The implication of this extract is that when girls are not ready to get better and are forced to gain weight, they may develop other, more harmful methods of weight loss to return to their emaciated state. Furthermore, responses highlight that girls not only recognise that there are multiple aspects of their eating disorder, the body aspect and the mental aspect, but also emphasise the importance of targeting the mental aspect in treatment. Girls explained that one of the benefits of working with the mental and emotional aspect of the disorder was that it targeted the mechanism that makes them want to lose the weight, rather than just treating the physical aspect of the disorder, which was understood by some as the outcome of the disorder:

not putting on weight but working with the ‘thinking’ part first was helpful because it makes you want to get better, not resent the fact that you shoved on weight and your thinking still says you need to lose

As a part of the emotional and mental treatment, respondents indicated that family therapy was beneficial and made them realise that they could not get better on their own:

The treatment that I found most helpful was the family sessions that we had with PR … he was really supportive and understanding. He helped
my family get through and was positively one of the best contributors to the recovery process … he helped to rebuild my self-esteem.

Other methods of targeting the mental and emotional aspects of the disorder included seeing counsellors/psychologists/psychiatrists. While some respondents indicated that this aspect of treatment was helpful: “[They] helped me find out why I have the disorder/why I was doing it”, and explained that they were able to talk about issues that were not related to the eating disorder: “[she] didn’t just talk about eating [she] talked about friends and family and my goals in life” and that they “ … removed the focus from my weight and focused on my day to day living and the development of strategies to cope with my ED (eating disorder)”, others indicated that they did not feel that psychologists/psychiatrists helped them at all: “They were no help. A complete waste of time. They actually made things worse”. These participants explained that they were unhelpful because the therapy sessions were just “text book psychology which seeks to categorise the individual” and explained that they either felt that their psychologist/psychiatrist or counsellor did not understand them, or they felt “intimidated by them”.

These accounts highlight the importance of conveying empathy to the patient, and also conveying an understanding of the difficulties that patients may experience in terms of changing and recovering. Further, they illustrate the importance of displaying some understanding of the person with the eating disorder and also suggest the therapist characteristics required to successfully engage the patient in treatment. These characteristics are reflective of the motivational approach to therapy (Vitousek, Watson and Wilson, 1998), which could be useful if employed within the clinical environment.
Amongst the array of mental and emotional forms of treatments received, girls also emphasised group therapy and art therapy as being helpful forms of treatment. Group therapy is a form of psychotherapy conducted with groups of individuals who suffer from common issues. According to respondents, group therapy allowed them to recognise that there were other people who experienced similar problems and issues and “helped to get my mind off my stay in hospital”. Girls also described art therapy as a therapeutic method that provided them with an “emotional outlet” and allowed them to express themselves without actually having to speak about what they were thinking and feeling. For some girls however, group therapy sessions encouraged girls to compare themselves to others, and thus reinforced the competitive aspect of the inpatient environment.

Although it is useful to understand the characteristics of treatment that is helpful for developing more effective treatment, it is equally useful to understand girls’ perspectives of negative forms of treatment. Participants highlighted that when clinicians and doctors have a negative attitude towards them as the patient, they feel that their recovery process is hindered:

I have to say that the doctors, hospital staff and some psychologists had such a negative outlook and made me look like a criminal … this certainly hindered my recovery process.

A particular challenge for clinicians trying to treat chronic illnesses is that patients will present with similar symptoms but some forms of treatment are more effective for some, than others, or girls may respond differently to different forms of treatment (e.g., Halse et al., 2005). Thus, clinicians need to decide whether to treat
patients with fundamentally similar programs, or develop individual programs for each patient. Many girls reported feeling like just another girl with anorexia and that their individual needs were not met as a patient: “[The doctors] put a label on us, we were all the same to them, just another anorexic”. In contrast, other girls highlighted that their treatment programs were different: “We were all on different programs for the one journey”, and emphasised that the clinicians were able to change the programs depending on whether certain aspects of treatment were working:

Treatment was fundamentally the same. Over time, they learnt what worked and what didn’t work, which limited the capacity of my eating disorder to succeed while I was in hospital.

Differences between treatment programs however, were not always seen as positive by patients: “I feel that doctors are unfair and when I was in hospital they picked on certain people and were harsh for some and not for others”.

Respondents reported that an essential part of treatment was to set goals and targets for weight gain and food consumption. When discussing the meal plans that they were given during treatment, some of the participants indicated that the clinicians and dieticians were flexible and allowed them to work at their own pace: “they work with me and let me work for what I want; if I don’t want to add more food to my meal plan then I don’t and they just try again next week”. This was not the case for all respondents however, who explained that their experiences with the prescribed meal plans were unrealistic and unattainable: “My meal plans were often unrealistic there was no way I would drink 9 cans of ensure a day, plus eat 6 small meals!”

Despite expressing that they had very little control over what they could and could not eat, respondents recognised the benefits of having the prescribed menu
plans, and recognised that they probably would not have eaten if they had the choice: “I always wanted more control. But I wouldn’t have eaten if that was given to me”.

Some girls recognised that not eating would have hindered their recovery process: “You need things to be regimented. I hated it then, but am eternally grateful now. If they allowed us to set our goals, menu plans and goal weights, if I’d had a say in them, I would be dead”.

Surveillance of eating and exercise behaviour is a key aspect of treatment and recovery both at home and within the hospital. Surveillance is most frequent around meal times and during the periods prior to and after meal times, and is usually performed by parents and family members: “Mum, dad, my sisters and friends always watched me while I ate meals (they still do) to make sure I ate everything …”

Generally, within the hospital and inpatient facilities, it is mostly nurses or the treating clinicians who perform surveillance. Although many participants acknowledged the benefit of having someone watch them, being watched was very frustrating and difficult for them: “It’s [being watched] frustrating and very annoying” and made them more hesitant about eating: “ … it makes me paranoid and uncomfortable. It makes me scared to eat … ” This was particularly true for girls who were ambivalent about the recovery process: “This [surveillance] is the most difficult part. You’re trying to convince yourself to eat or not to, and there is the outsider pressures of force feeding, guilt trips and isolation”. For some girls however, being watched encouraged them to retaliate and rebel against surveillance and treatment: “If they were [watching], I couldn’t stand it, I would try and hide as much as I could and put up a fight”.

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7.2.3 Processes of Recovery

Research has revealed that the cause of eating disorders is multifactorial and complex (Polivy & Herman, 2002) and thus, recovery is often a very long, complicated and expensive process for girls and their families. Only fifty percent of patients fully recover from eating disorders (Gowers et al., 2000) and, even after 21 years some patients still meet the diagnostic criteria for the disorder (Lowe et al., 2001). Further, the average length of illness has been estimated at 6 to 8 years (Herzog et al., 1997).

When asked about recovery, girls highlighted various constructions of what recovery was and what it meant for them. Some of the respondents defined recovery as a process, beginning with the decision to get better: “It wasn’t until I woke up one day thinking ‘I’m over this’. But that wasn’t the end, there were still many stepping stones to good health”. Respondents highlighted that recovery was not an easy process: “Everyday is a struggle” and that it did not just involve weight gain and maintenance at a physical level but also required mental and emotional recovery:

I am physically healthy at a fine weight-a 21 BMI, but the mindset is still there. I still have to debate my thoughts and figure out the underlying reason for my feelings …

These data are consistent with recent investigations into recovery from anorexia, which have revealed similar constructions of recovery in adult patients, who described recovery as a hard process that is often hindered by unexpected obstacles that the individual has to deal with (see Lamoureux & Bottorff, 2005).

For some participants however, recovery was described as a waste of effort:
“… if I gave it [anorexia] up now, it feels like it would have been more pointless—it would have been for nothing” and all the hard work that they had put into getting their bodies into the condition that they were in:

I have worked so hard to get pretty sick and hospitalised more than once. I do think it’s all gone away and it was all for nothing. It’s scary to be eating again cause I worked so hard to get where I was.

Further, girls indicated that they believed recovering would mean that they would lose control: “If you have put yourself through so much pain to be so skinny the last thing you want is to have the one thing you can control, your weight, taken from you” and lose the influence that they had on others: “I spent 4 months in an inpatient facility dreading the slightest weight gain would lose me the influence I had on my family and future life”.

For other participants, recovery meant that they needed to eat, which they equated with being fat and obese: “I guess I was just scared of putting on weight again—that I’d look in the mirror and still see and feel as though I was fat”. Such perspectives echo the clinical literature that asserts patients with anorexia have marked body image distortion, irregular perceptions of what is fat, and a morbid fear of fatness (Garner, 1991). These statements also illustrate the body issues central to the disorder and the struggle that patients may face once they begin to eat again: “I just found it hard to realise that I wasn’t fat and that if I did eat more, then I wouldn’t become overweight”.

Despite the plethora of research conducted in the eating disorders field, the question still remains as to what makes patients decide to recover and what factors are integral in the recovery process. Respondents identified several extrinsic factors that
influenced their recovery in terms of motivation to change and support during the recovery process. One of these factors included support from significant others, such as boyfriends: “I found it easier with the support of my boyfriend he makes me realise that the change is for the best and helped me out a lot”. Many participants explained that family helped them a great deal, making them realise that they were not alone, and that they were loved. Furthermore, participants highlighted that watching their families and friends living normal lives made them realise what they were missing out on: “I just got fed up with the ‘bad days’ and watching while the world went on, my friends having fun … I wanted that fun … I wanted to get better” and who they were hurting by maintaining their anorexia: “ … I realised that I was hurting those around me who cared about me and loved me … ”

Other respondents explained that their motivation to recover came from gaining more knowledge about the benefits of recovery: “I didn’t want to get better at all but at … [hospital] they showed the benefits of getting better” and about the damage that they were doing to themselves by maintaining the anorexia: “the things that influenced my recovery were many family sessions … and education that I received on the negative impacts of the disorder having on my body … ”

Those who have written about the influence of spirituality and religion in chronic illnesses have argued that faith helps patients cope with their condition and their situations and may even provide patients with an avenue for support and comfort (Burker, Evon, Sedway, & Thomas, 2004; Saleh & Brockopp, 2001; Pargament, 1997). Some respondents supported this assertion, emphasising that religion and faith provided them much support throughout the recovery process: “God—my support and guidance forever couldn’t have done it without him. Because God will always be
there and I know I can trust him and he’ll provide and I had this illness for a reason; so I could help others and become closer to him and for my faith to grow stronger”.

A persistent thread throughout the responses was the idea that no amount of treatment or education would influence recovery, unless they were ready and motivated to recover from their illness. Girls stressed that it was their choice to get better: “you get better when YOU feel like you’re ready to! Not when your stupid parents are forcing you to do it or the doctors … ” and that no one else could do it for them: “For years I have been waiting for someone to step in and make me better and I didn’t realise that it is me and only me that can do it”. Such statements support current research findings using the transtheoretical model of change and also provide further explanation of the frequencies discussed earlier (see part 7.1.10).

However, many respondents highlighted that the decision to get better is not straightforward and that they can have mixed feelings about changing and recovering: “ … I didn’t want to get better, but I didn’t want to die either so I was stuck” or are currently ambivalent about recovery: “I certainly would love to be free from my eating disorder, but at the same time I don’t know what I would do without it”.

These statements reflect the assertion that individuals may undergo another identity formation stage during the recovery process, developing a new sense of self worth without their eating disorder (see Lamoureux and Botorff, 2005). This is often a difficult period that patients struggle with: “I feel like a failure, I look at normal people and want to be like that again and then I look at skinny people and want to be like that”.

These feelings of ambivalence towards recovery and the questions that girls have about their identity once they have recovered from their illness have important clinical implications. Specifically, they illustrate the need for clinicians to address
identity throughout treatment, as it appears that girls undergo various stages in which they are required to assess and reassess their identities and self-worth.

7.2.4 Relationships with Others throughout the Illness Trajectory

Given that the family unit is typically the primary source of care for patients with anorexia nervosa throughout the illness trajectory, it has been suggested that anorexia places enormous strain on family coping and support resources (Perkins, Winn, Murray, Murphy & Schmidt, 2004). Further, researchers have emphasised the importance of social networks and social support for psychological well-being and coping and argue that these social networks of peers and family change throughout adolescence (e.g. Frey & Rothlisberger, 1996).

Participants reported that relationships with their parents were impacted by their parents’ level of understanding and willingness to learn about the disorder. While a few participants indicated that they became closer with their parents, they explained that this was a result of an increase in the level of understanding:

I found that my relationship with my parents became closer. They understood what I was going through and realised my difficulties in eating food. They always seemed open to learning about the disorder so that they could find a way to get out on the other side.

… at first it was difficult. But once they really knew how hard it was for me they helped me out … I opened up to my parents and they realised more, and they were more helpful after that.

However, many indicated that their parents, or at least one of their parents, did not understand the disorder or the effect that the disorder had on them: “My mum still
to this day does not understand the impact weight and food has on my life. It makes it very hard for us to get along or for me to get better and stop hating myself” or even try to understand that anorexia nervosa was about more than just eating, which in turn affected their relationship with their parents:

I found it difficult to communicate with my parents because they didn’t understand what was happening to me. They thought I would get better on my own, but it was hard. We were always arguing and getting angry at each other …

Additionally, girls reported that when their parents learnt more about anorexia, their main sources of information came from books, support groups, other parents who had children with eating disorders, friends, other family members, and doctors:

When I was admitted to hospital they kept trying to get me to eat, they did not understand but then they spoke to other mothers and fathers and spoke to the doctors they understood and then worked with me to try and get better.

Therapy that involves the parental unit, such as family therapy, emphasises that parents need to take control and oversee the amount and type of food that their daughter is consuming. Responses illustrated that parental control may be met with anger and frustration:

They [parents] are control freak FU*KHEADS!! Who want me to hurry up and get over it and their answer being fat heavy weight goals and food! NOT GOOD! This makes me more angry.
From the responses provided, it seems that anger and frustration are not uncommon responses to parental control.

Some of the respondents highlighted that they felt that one particular member of the family understood them better and provided more support than others. In most cases, girls expressed the view that their mothers understood them and their illness better: “Dad never understood. He always got angry because he didn’t know how to handle me, mum was always more patient” and further illustrated that different members of the family dealt with and understood the eating disorder differently:

My dad thought that ‘just get over it’. Mum understood totally as she kinda went through it too when she was younger. My elder sister thought I was being selfish just thinking about myself and not care what it was doing to my family.

Such statements underline the importance of parental understanding and support throughout the illness trajectory and how important it is for parents to realise that recovery from anorexia is not just about consuming more food. Although support groups for parents are beneficial in terms of gaining support (Cottee-Lane et al., 2004), these statements emphasise that the value of support groups and educational sessions for parents is not limited to educating parents but can also assist in strengthening the relationships between the patient and their parents.

Although most girls found that education and support groups helped increase their parents’ level of understanding of the disorder, and somewhat improved their relationships, others explained that their parents did not attempt to learn about them or their disorder: “Mother read books, except the ones she chose involved The Lord.
Fuck the lord. Father read shit all”. This statement perhaps highlights that parents may also turn to religion for support during their daughters’ illness, although girls did not necessarily perceive this as helping the parent-child relationship.

In the frequency analysis, respondents highlighted that their eating disorder increased their level of social isolation (see part 7.1.1). In their open-ended responses, girls reported that being understood was important in their peer relationships. Many explained that they became more withdrawn from their friends because they just didn’t feel like socialising anymore: “When I had my eating disorder I felt like I really didn’t want to go out much or socialise with my friends”, and because they were unsure as to whether their peers understood them and their illness: “… I didn’t feel like socialising that much anymore. I felt that no-one really understood what I was going through … I don’t think people can thoroughly understand, unless they have gone through it themselves”. Others explained that they felt that their family and friends could not help them: “I felt as though no one could help me through this problem, so I would lock myself in the room and not talk to my family or friends”. However, many respondents indicated that the loss or deterioration of friendships was because friends lost patience with them, or became frustrated with them and their eating disordered behaviours: “My friends gave up asking me out and got annoyed with my obsessions”.

Other participants reasoned that they withdrew from their friends because socialising conflicted with their eating disorder: “I cut myself off from my friends and withdrew inside myself. I didn’t go out because my eating disorder was my life. Nothing else mattered”, and that they were afraid that their friends would attempt to influence them to eat: “… I don’t want them taking me off my diet or making me slip up, so I just go to the gym, work and stay at home”. Girls also highlighted that if they
had not socially withdrawn, their strict regimes would be interrupted: “I didn’t have time for friends because they conflicted with my exercise, OCD and eating behaviours”. These explanations illustrate that the increased social isolation that occurs during the illness trajectory may be a strategy employed by patients to maintain their eating disorder, as opposed to occurring as a result of the eating disorder itself.

Some girls however, kept their eating disorder a secret from their friends, perhaps in fear that their friends would not understand them and the disorder and not want to be friends anymore: “I feel as though if I told my friends, they would think of me as being weird” or because they felt as though they did not need the sympathy from others: “ … my issue was very personal to me and I did not need sympathy from my friends for it”.

The characteristics that girls used to describe those individuals that remained their friends included being understanding, supportive, caring, mature and open. They further explained that although their friends may not have understood their experiences, they were there to support them and talk to them: “throughout my whole experience and after I have had an amazing amount of support from my friends, although they do not really know what it is like, they are always there to talk to …”

Key Findings

In recent years, researchers have recognised the importance of exploring the experiences of patients with mental and chronic illnesses, to further understand the complex nature of the illnesses and the impact that they have on the patient. Despite this, much of the research in the field of eating disorders has focused on aetiology, treatment efficacy and outcomes, with very little research into the experiences of patients with eating disorders. Of the few studies that exist in the area, these have
focused on the adult experience of eating disorders, and thus very little are known about the experiences of the adolescent patient. This study attempted to bridge this gap in the literature by investigating the experiences of adolescent sufferers of anorexia nervosa, using a newly developed vignette style questionnaire and allowing the respondents to explain their own experiences.

Although many researchers have argued that patients with eating disorders become more socially isolated during their eating disorder, an assertion which was supported by the frequency analysis, very little research has investigated the reasons why girls may withdraw themselves from social interactions and situations. The frequency analysis indicated that for girls who had received inpatient care, social isolation was common. Analysis of the open-ended responses regarding peer relations offered more explanation for the patterns of responses. According to the data, there are several explanations for the social withdrawal that is often described by authors. Girls suggested that they became socially isolated because firstly they did not feel that their friends understood them or their disorder and further because the social interaction would disrupt their exercise and eating regimes. This suggests that isolation is a strategy that could be employed by patients to preserve and maintain their disorder. Generally, girls who have more severe symptoms are admitted into inpatient programs and thus have stricter regimes. Given these explanations and the physical and mental status of the inpatients, the general pattern of frequencies for inpatients and outpatients is not surprising. Furthermore, girls’ responses revealed that having parents and friends understand them and their disorder was important for the maintenance of social relationships.

When describing peer relationships in terms of competition and comparisons with others, descriptions and frequencies support the notion that although the inpatient
environment can be supportive, there are negative aspects such as competition to be the thinnest. In their open-ended responses, respondents indicated that being surrounded by others with eating disorders may hinder the recovery process because their interactions encourage them to compete with each other, and can also learn various tricks and strategies from each other. This has important clinical implications, because it is unclear whether the benefits of the support provided by other patients outweigh the negative influence they may have on each other. For outpatients, such competition was less apparent because they have limited contact with the other patients.

Although the frequency analysis indicated that the majority of respondents separated the anorexia from the self, in terms of control of behaviour and emotion, the open-ended responses showed that when the anorexia was separated from the self, descriptions contained negative behaviours and attitudes, or indicated that the anorexia provided them with protection from public scrutiny. Many respondents also described their anorexia as a part of their identity, thus illustrating that patients may understand and construe their disorder differently. Furthermore, analysis indicated that the separation of the self from the eating disorder was not exclusive to patients who had been diagnosed with anorexia nervosa. This has clinical implications, as the way that individuals understand the eating disorder is crucial to both the treatment and recovery process.

Girls’ accounts offered insight into the concerns and fears about the effect anorexia has on their relationships with friends and family, and how these individuals may react in response to the eating disorder. Open-ended responses demonstrated that girls were mostly concerned about how their peers and family would respond to their illness and further, how they could integrate back into their ‘normal’ social lives.
Girls also indicated their desire to be treated normally despite their diagnosis. Although this was seen to apply for most of the respondents, the pattern of responses indicated that this experience was more common in girls with anorexia nervosa.

Overwhelmingly, respondents indicated that parental and peer understanding was essential for support and recovery. Parental knowledge about the disorder and the difficulty of recovery was also highlighted as an important characteristic for support. Girls emphasised that their parents did not have much knowledge about the disorder initially (as shown in the frequency analysis) and further explained that lack of understanding and knowledge about the disorder was detrimental to their relationships with their parents. It was also indicated that when parents gained more knowledge about the disorder through books and support groups, they were more likely to be able to maintain positive relationships with their child.

Girls also indicated that the different treatment methods they had been exposed to during their illness trajectory had varying levels of efficacy and helpfulness, and that there are certain clinician and therapist characteristics that are more helpful for them, such as putting in effort to interact with the patient, empathise with them, and also have the ability to talk to them about other issues that concern them. Understanding and flexibility were two of the common characteristics that girls highlighted as being helpful in treatment models and practitioners, although the frequency analysis revealed that this was more the case for girls with anorexia as compared to those who had been diagnosed with bulimia nervosa.

Further, girls recognised that there are two distinct aspects of treatment, one for the mind and one for the body, and suggested that both the mind and the body needed to be addressed in treatment. According to girls’ accounts, many treatment programs neglect to address the mental aspect of the disorder, and attempt to re-feed
them to get them better. Girls argue however, that for treatment to be effective in the long term, practitioners need to address the eating disordered thoughts and attitudes, and not just the behaviours.

Frequency analyses indicated that girls, regardless of diagnosis, felt a degree of ambivalence towards recovery and further indicated that recovery would only occur if and when the individual chose to recover. Open-ended responses echoed this analysis and depicted recovery as a process that participants perceived was something that they had to be ready to do rather than being forced to do, echoing the transtheoretical model of change literature, which asserts that motivation to change is dependent on an individual’s readiness to change.

These findings highlight the various understandings that girls have of their disorder but also provide some understanding and insight into their experiences with anorexia, fears and anxieties about their friends and their families. The findings highlight that there is a lack of conformity and consistency between respondents in terms of their experiences or constructions of anorexia, and this has clinical implications. The significant clinical implications of these findings are discussed in chapter 8.
CHAPTER 8
DISCUSSION AND CLINICAL IMPLICATIONS OF FINDINGS

Introduction

Throughout this thesis, the importance of gaining a clearer and more in depth understanding of the factors that are associated with the onset and maintenance of adolescent anorexia has been emphasised. Despite the proliferation of research into eating disorders such as anorexia nervosa over the last several decades, questions regarding the aetiology and treatment of the disorder still remain. This thesis addressed key gaps in the eating disorder literature concerning self-concept, body image, support needs and experiences of adolescent girls with anorexia nervosa.

The purpose of this chapter then, is to discuss the results obtained from Studies 1, 2 and 3 in light of the current body of literature, the aims of the present study and in relation to the original objectives of the study. The key findings will also be discussed relative to clinical and practical implications, and finally, the strengths and limitations of the study will be discussed with reference to future research directions.

Overview of Primary Aims, Objectives, and Methods of Thesis

Anorexia Nervosa is a very serious and chronic mental illness that is often associated with long and complex treatment regimes, and sometimes fatal outcomes
(Becker, Grinspoon, Klibanski, Herzog, 1999; Bryant-Waugh, 1993). Unfortunately, the prevalence and incidence of this psychiatric illness has continued to increase over the last several decades. What is even more concerning is the increasing level of disturbed eating attitudes and behaviours in normative samples, despite attempts to develop and implement prevention and education programs in at risk populations. Much of the literature in the field has investigated aetiology and treatment models based on the presentation of the disorder in adult women; however, the disorder does not exclusively affect adult women. As the adolescent population is most vulnerable and most affected by the disorder, the current study attempted to address this limitation in the current body of literature by examining anorexia nervosa in an adolescent population of girls.

Given the complex nature of the disorder, it is not surprising that there are still questions that remain unanswered concerning the factors and the interactions between factors that are involved in the onset and maintenance of anorexia nervosa. Researchers and clinicians throughout history have proposed a number of aetiology models and treatment models which have included a myriad of constructs. This study focused on two of the most frequently cited factors associated with development, maintenance and treatment of anorexia nervosa and other eating disorders: self-concept and body image. Moreover, this study involved a series of studies that attempted to investigate models of self-concept and body image that have rarely been explored within mental health, and more specifically eating disorders research.

Despite the advances that have been made in other fields of psychology by adopting the multidimensional approach to self-concept, the mental health sector is yet to adopt the more descriptive model in research and clinical practice. Study 1 sought to bridge this gap in the literature by assessing the generalisability of the
multidimensional model of self-concept as measured by the SDQII-S, in a clinical population of adolescent girls with anorexia nervosa. In doing this, the factor structure of the SDQII-S was assessed in both the clinical and the non-clinical samples of adolescent girls using multigroup factorial analysis. Following this, further analyses were conducted using MIMIC methods to determine firstly whether there were significant differences between the two adolescent groups on the various dimensions of self-concept. Secondly, a MIMIC model was evaluated to determine whether any group differences in self-concept existed above and beyond the effects of self-esteem.

Although the EDI-2 is frequently used in eating disorders literature, very little of the more recent literature has assessed the psychometric properties of the instrument in clinical and non-clinical adolescents in Australia. In addition, more advanced statistical methods such as SEM and MIMIC have not been utilised within the field to assess differences between clinical and non-clinical samples. Using SEM and MIMIC, these issues were also addressed in Study 1. Further analyses were conducted to determine whether any group differences between the two samples in terms of eating disorder symptomatology existed, even when differences in self-esteem were controlled for.

As previously highlighted, much of the research (see chapter 2) regarding the self-discrepancy theory has assessed the model on the basis of whether actual and ideal discrepancies are related to self-esteem. However, researchers have neglected to determine whether the discrepancy has more predictive power than actual and ideal ratings alone. Furthermore, although the self-discrepancy theory can be intuitively applied to body image, very few researchers have applied the model to body image, particularly within the field of eating disorders. In addressing various methodological limitations of previous research, Study 2 attempted to evaluate the self-discrepancy
theory for body image. Using a series of 12 silhouettes ranging from very thin to obese, the actual, ideal and discrepancies were assessed in clinical and non-clinical samples.

Of late, researchers and clinicians have identified the importance of understanding the everyday experiences of patients diagnosed with chronic illnesses. Gaining an understanding of how patients experience their illness, their perceptions of treatment, recovery and the meaning of their illness is imperative for the development of prevention and treatment models. Furthermore, understanding patients’ concerns and fears about the recovery process can elucidate the issues that can assist and help patients with treatment and general support needs. In eating disorders literature, there is paucity in the research exploring the experiences and support needs of patients with anorexia, particularly when the patients are adolescents. Study 3 of this thesis therefore attempted to address this gap in the literature. A new vignette style questionnaire was developed on the basis of in depth interviews with adolescent inpatients and then administered to a wider population of young people who had been diagnosed with an eating disorder. It was hoped that some knowledge regarding the generalisability of experiences and support needs would be gained through the qualitative analysis of the vignette questionnaire.

**Summary of Findings: Study 1**

*Psychometric Properties of the SDQII-S: Reliability*

Many researchers neglect to evaluate the psychometric properties of the instruments that they employ in their research, instead assuming that the instruments will be equally applicable for all of the samples that they are testing. Given that the SDQII-S has not been used in a clinical sample of adolescents, it was important to establish that the psychometric properties of the instrument remained strong for the
clinical sample. Reliability analyses conducted for each of the SDQII-S scales for each of the two adolescent samples indicated that as predicted, the SDQII-S was a reliable measure of multidimensional self-concept.

Reliability estimates for both the clinical and the non-clinical adolescents reflected previous published estimates (Marsh et al., 2004). Interestingly, although reliability estimates were shown to be well above the acceptable levels, estimates were slightly better for the clinical sample as compared to the non-clinical. This result may be a reflection of the questionnaire administration process. That is, questionnaires tended to be administered on a one on one basis with the clinical sample, whereas group administration processes were employed for the non-clinical sample. Therefore, in the case of the clinical sample, girls were able to ask questions and go at their own pace when completing the questionnaire. Within group administration environments, students may have been less willing to ask questions when they were unsure about items. Further, within the group environment, students may have wanted to keep pace with their peers and thus not taken the necessary time to process items and their own personal responses.

Consistently with previous SDQII-S research (Marsh et al., 2004; Marsh et al., in review), analyses provided clear evidence of the 11-factor structure at the total group and individual sample levels, with items loading highly on the factors that they were designed to measure. As previously highlighted, much of the research into the self-concept in various fields of psychology, health and education has compared self-concept levels between groups. In doing this, researchers have compared groups on the basis of their mean self-concept scores. However, researchers have rarely investigated whether there is factorial invariance for the instruments between samples. As a result, very few authors can identify whether the instruments that they are
comparing groups with are equally valid for the populations they have tested. It is important to establish whether the instruments are equally valid for the samples before comparing them to determine whether the same constructs are being measured by the instrument. To address this, multigroup invariance analyses were conducted to determine whether the factorial structure of the multidimensional model of self-concept as measured by the SDQII-S was consistent for both the clinical and non-clinical samples of adolescent girls. Results indicated that the SDQII-S was structurally equivalent for both samples and thus could be employed to assess the various domains of self-concept for both clinical and non-clinical samples.

*Psychometric Properties of the EDI-2: Reliability*

As with the SDQII-S, analyses were conducted to determine whether the EDI-2 was a reliable instrument to assess eating disorder symptomatology for both clinical and non-clinical populations. Further, multigroup factorial invariance analyses were also conducted to determine whether there was structural equivalence for the instrument. Based on previous research (see Garner, 1991; Shore & Porter, 1990; Vanderheyden, 1987), it was predicted that the EDI-2 would have strong psychometric properties and that the structure of the EDI-2 would apply for both the adolescent samples.

Results of the reliability analyses for the clinical sample were comparable to previous published estimates (Garner, 1991). However, the asceticism and bulimia scales of the EDI-2 for the non-clinical sample were shown to be below the clinically acceptable range for reliability, hence raising questions about the usefulness of the instrument in non-clinical adolescent samples. If non-clinical adolescent girls are unable to reliably respond to the items on these two particular scales, as the results suggest, perhaps the non-clinical adolescents are unable to differentiate the items
across the various factors, and hence girls may not have a clear and defined concept of eating disorder symptomatology (particularly with regard to these scales). Alternatively, these results could suggest that the relevance of these scales for non-eating disordered populations is limited.

Reliability analyses were conducted using both the truncated scoring system (as specified by the manual for the EDI-2) and a continuous scoring system (as responses were given on a scale of 1 to 6, scale scores were calculated on the basis of this 1 to 6 scale). Results for these analyses indicated that the continuous scoring system was more reliable in analyses in comparison to the truncated system. This raises questions regarding the usefulness of the truncated system for research purposes. Although, intuitively the truncated system is appealing and relatively more straightforward, as it allows clinicians and researchers to determine whether individuals are symptomatic, authors (e.g. MacCallum et al., 2002) have argued that by truncating the scores, administrators are dichotomising the variables of interest. Thus, instead of having a continuum in which symptoms are present, individuals are either symptomatic or not. Further, truncating scores, researchers are decreasing statistical power, and decreasing the range of statistical analyses that can be performed. Many of the statistical analyses that are conducted rely on the assumption that the data being analysed are normally distributed; truncating scores increase the likelihood of data being bimodal and hence decrease the number of analyses that can potentially be performed to better understand the phenomenon that is being studied.

CFAs were also conducted for the EDI-2 at the total sample, clinical and non-clinical levels to establish whether the factor structure held for each of the individual samples. Results indicated that factor loadings were consistently high and that there was clear evidence of the 11-factor structure proposed by Garner et al., (1992) for
both the clinical and non-clinical samples. Multigroup factorial invariance analyses also confirmed that the factorial structure of the EDI-2 could be applied to both the clinical and non-clinical girls in this investigation, despite the low reliability estimates for two of the provisional scales.

**Summary of the Psychometric Properties of the SDQII-S and EDI-2: Factor Structure and Invariance**

An important aspect of Study 1 was to investigate the psychometric properties of the measures utilised in this study. Many researchers, particularly within the field of psychology and education, neglect to assess the psychometric properties of instruments and hence have little indication as to whether they can be validly used for various populations in school contexts and within clinical contexts. The individual analysis of each of the instruments indicated that there was strong support for the psychometric properties (notwithstanding some of the reliability results for the EDI-2). After each of the instruments was assessed individually, a final CFA which included both the scales was conducted to determine the level of discrimination between the scales. The fit indices indicated that there was a good fit between the data and the 22-factor model. The results of the CFA further indicated that factor correlations demonstrated satisfactory discrimination between the scales, hence providing strong support for the discriminant validity of the scales employed in the current thesis. In addition the interrelations amongst the factors highlighted the multidimensionality of self-concept, indicating that there were differential relations between self-concept and eating disorder symptomatology. More specifically, academic scales of the SDQII-S were not as highly correlated to any of the EDI-2 scales, whereas the physical appearance scale was shown to be highly correlated with most scales of the EDI-2. As expected, the self-esteem scale was also shown to be
strongly associated with all scales of the EDI-2, particularly the ineffectiveness scale, which is most logically related to esteem.

The findings of this section of Study 1 have important implications for further research and clinical practice in that it ensures that researchers and practitioners can confidently utilise these instruments to evaluate outcomes such as self-concept and eating disorders symptomatology with adolescent girls, within the clinical context and also within a school context. Furthermore, the results highlight the multidimensionality of self-concept and the usefulness of considering self-concept as a multidimensional construct.

The Effect of Group, Age and BMI on Self-concept

Group Effects

MIMIC approaches to data analysis allow for the examination of the independent effects of latent observed variables. As highlighted earlier, although many authors have used alternative multivariate analyses to examine group effects and differences, the advantage of MIMIC and SEM models is that the analyses are conducted on the basis of underlying factor structures and hence effects and differences are not reliant on calculated scale scores.

One of the models evaluated the theory that group membership would affect self-concept. It was predicted that there would be significant group effects on self-concept domains, coinciding with the literature in the field (i.e., that there would be an effect of group of physical appearance and self-esteem). Analysis indicated that diagnostic group had a significant effect on five of the 11 self-concept dimensions even after controlling for the effects of age and BMI. More specifically, results indicated that girls with anorexia scored lower than non-clinical girls on physical
appearance self-concept, emotional stability self-concept and self-esteem. This result is in accordance with much of the literature in the eating disorders field which suggests that low self-esteem (e.g. Griffiths et al., 1999; Silverstone, 1990; Williams et al., 1993) and body esteem (e.g. Beumont, Russell, & Touyz, 1995; Cash & Deagle, 1997; Striegel-Moore et al., 1989) is common in patients with eating disorders in comparison to normative samples.

Throughout the illness trajectory, feelings of loneliness, nervousness, agitation, and inability to recognise various emotional states (emotional instability) are common (Zonnevijlle-Bendek, van Goozen, Cohen-Kettenis, van Elburg, & van Engeland, 2002; 2004; Zonnevijlle-Bendek, van Goozen, Cohen-Kettenis, van Elburg, de Wildt, Stevelmans, & van Engeland, 2004). Hence, the finding that clinical girls evaluate their emotional stability more negatively is not surprising.

Girls with anorexia nervosa were also shown to evaluate themselves more positively on two of the three domains of academic self-concept. Although there has been very little research into this aspect of self-concept for anorexia nervosa patients, there is limited research into the academic achievement and motivation of patients with anorexia nervosa. This research has suggested that patients’ motivation to strive for perfectionism may extend from weight and eating to academia and academic achievement (e.g. Dura & Bornstein, 1989). Further there is some evidence that girls with an eating disorder have higher academic related adjustment (e.g. Swift et al., 1996), high verbal intellectual functioning, achievement (Dura & Bornstein, 1989) and higher IQ levels in comparison to other clinical samples (Blanz, Dtzner, Lay, Rose, & Schmidt, 1997). Given that there is some evidence to suggest that their achievement is high, it is plausible to suggest that, based on research within the
education field, self-concept levels are high due to high academic achievement (Marsh, Trautwein, Koller, & Baumert, 2005).

It is interesting to note however, that although there was a significant effect of group on math and general school self-concept, group did not significantly affect verbal self-concept. Whereas general school self-concept is a global domain that assesses the respondents’ general feelings towards their academic abilities and confidence, math and verbal self-concept are more specific subject-related evaluations. As a result of the lack of research concerning the multiple dimensions of self-concept, there is not a clear rationale as to why clinical girls did not score any differently to non-clinical girls on verbal self-concept, but scored significantly higher on the other scales of academic self-concept.

**BMI Effects**

Analyses revealed that BMI had little significant independent effect on the multiple dimensions of self-concept. To some extent it could be thought that BMI was reflective of group, and hence the group effect may have accounted for any BMI effects on self-concept domains. Although it might be intuitively appealing to think that BMI would have had a significant effect on at least the physical appearance domain of self-concept, this result perhaps indicates that there is a difference between objective measures of physical appearance (such as body mass) and affective measures, and that one does not necessarily have an effect on the other. Thus, how one might feel about their physical appearance might be somewhat independent of how much one weighs, and hence physical appearance is a broader concept than body mass alone.
Age Effects

Although not a central focus of this study, it was necessary to examine the effects of age on self-concept, particularly given that the sample considered in this thesis has been one that is associated with significant changes in both cognition and physical development. Adolescence has been termed as a period of storm and turmoil, a period in which individuals go through cognitive and emotional changes to accommodate the physiological changes that occur (Arnett, 2004). Although girls and boys go through physical changes, girls in particular go through very obvious changes in the way that they look; their hips become rounder in preparation for reproduction, they develop breasts and develop more fatty tissue to protect their newly active reproductive system (Weiten, 2002). Self-concept researchers throughout history have proposed that as a result of the changes that occur during the adolescent period, individuals’ self-concept will fluctuate with age (Marsh & Ayotte, 2003). The current results are in line with these results showing the significance of age as a predictor of self-concept.

Results suggested that the older the girls got, the more negatively they perceived their relationships with their parents (age was shown to be the only predictor of parent relations, and of all self-concept domains, age affected parent relations the most). This provides some support for the literature in the field regarding the changes that occur in the relationships between parents and their children during adolescence. That is, some researchers have conceptualised significant relationships along the lines of a circle that surrounds the individual. In this case, through the early stages of development when children are highly dependent on their parents and are modelling their behaviour on their parents’ actions, parents are conceptualised within the inner circle of significant relationships. Peers and friends, who at this stage have
minimal effect on the child and their behaviour are conceptualised on the edge of the inner circle of relationships. During adolescence it has been argued that peers and friends have a larger influence on individuals as parents have less influence. Thus, parents become less influential in structuring the identities of individuals. Hence, as a result of children attempting to establish their own independence and identities, parent-child relationships may become more strained. It is thus not surprising that the results here indicated that as girls became older, their perceptions of their relationships with their parents became more negative.

The results also provide evidence for the body image research highlighted earlier in Chapter 2. Numerous researchers have explained that as girls become older throughout the adolescent period, their awareness of the societal pressures for thinness increases and they more readily internalise and accept the thin ideal (e.g. Kelly et al., 1999; Stice, 2002). Much of this leads girls to develop increased levels of body image dissatisfaction and more concerns about body shape and weight. Hence, it is not surprising that older girls have lower physical appearance self-concept scores. Although societal pressures were not directly assessed in this study, the negative effect of age on physical appearance self-concept may be reflective of these processes.

Although the significance of age is generally in line with past research, previous research (e.g. Marsh, 1989; Marsh et al., 1985) has indicated that although there are declines in self-concept during pre and early adolescence from childhood, during the adolescent period, self-concept is highest during the early years of adolescence self-concept, and lowest during the middle stages of adolescence. During the late stages of adolescence and towards adulthood however, research has indicated that self-concept levels tend to increase again, thus suggesting that there is a
curvilinear pattern development of self-concept with age. As age was not a primary focus of the current study, the curvilinear effect of age on self-concept was not examined.

**Differences in Self-esteem**

Self-esteem was substantially related to all the other self-concept domains. Although this highlights the importance of the self-esteem construct as a predictor variable for self-concept, the results also indicated that, when the effects of self-esteem were controlled, group still had a significant effect on various domains of self-concept. More specifically, the results indicated that even when the effect of self-esteem was partialled out and controlled for, group differences were statistically significant for six of the other 10 self-concept domains. This is an interesting finding as direct group effects on self-concept without controlling for self-esteem indicated that there were only five significant paths (one of which included self-esteem). The two additional significant paths were from group to physical ability and from group to verbal self-concept. This increase in the significant pathways from group to physical ability and verbal self-concept could perhaps be a consequence of shifting variance and covariance between the variables when placing self-esteem in different parts of the model. More specifically, when self-esteem was considered in the model as an outcome, the variances amongst the outcome variables were allowed to covary, whereas, when self-esteem was considered as a predictor (as it was in this model), group and self-esteem were allowed to correlate and hence the balance of variance is shifted within the model.

These results thus demonstrate the generalisability of the multidimensional model of self-concept and the importance of a multidimensional perspective of self-concept, rather than the unidimensional perspective (focusing on self-esteem as the
only component of self-concept). This support for the multidimensional approach further indicates that the more descriptive method for assessing self perceptions allows researchers and clinicians to determine where girls with anorexia nervosa have deficits in their self-concept. Clearly, there are some areas of self-concept where girls with anorexia nervosa have equivalent levels of self-concept and other areas in which girls with anorexia nervosa in fact have higher self-concepts than non-eating disordered girls. These findings suggest that it might be useful for clinicians and practitioners to develop treatment programs to address specific deficits and sustain any strengths, rather than target the overall global sense of self-worth, which approach has been shown to be ineffective.

*The Effect of Group, Age and BMI on Eating Disorder Symptomatology*

To evaluate the predictive ability of group on eating disorders symptomatology, a parallel series of analyses were conducted with the EDI-2. These analyses involved a series of MIMIC models that could assess the independent effects of group membership, age and BMI on symptomatology.

*Group Effects*

The results indicated that there were significant group differences for 9 of the 11 EDI-2 factors, and that clinical girls scored higher on drive for thinness, body dissatisfaction, ineffectiveness, perfectionism, interoceptive awareness, maturity fears, asceticism, impulse regulation and social insecurity. Results of the current study indicated that group was not predictive of bulimia. This result however is not too surprising, given that the clinical group of adolescents had been diagnosed with anorexia nervosa and given that the scale was designed to differentiate between patients with various subtype diagnoses.
Given that body image dissatisfaction has been considered as one of the most robust and consistent risk factors for anorexia nervosa and other eating disorders, it is not surprising that group was found to have a significant effect on scores on body image dissatisfaction. More specifically, the results indicated that the clinical sample scored higher than the non-clinical sample on body image dissatisfaction. This result is very much in line with the physical appearance self-concept results and supports much of the literature in the field of eating disorders (see Chapter 2). Clinicians and researchers have suggested that high levels of body image dissatisfaction and high drives for thinness characterise patients with anorexia nervosa (Bruch, 1973). The results of this study provide support for this assertion, suggesting that girls with anorexia nervosa have a higher drive for thinness in comparison to adolescent girls without anorexia nervosa, and hence have a higher level of motivation to achieve thinness.

As expected, group significantly predicted ineffectiveness, suggesting that girls with anorexia nervosa scored higher than non-clinical girls and had higher feelings of ineffectiveness. Given that this scale is conceptually similar to that of self-esteem, it is not surprising that clinical girls scored higher, as group significantly predicted self-esteem in previous analyses. This result thus provides evidence for Bruch’s original report that patients suffer from an intense and debilitating sense of ineffectiveness. Garner (1991) designed this particular factor to be closely related to self-esteem, but also included constructs such as loneliness and feelings of emptiness. As ineffectiveness appears to be a global measure, in terms of clinical practice, given the knowledge that girls with anorexia nervosa have higher scores on ineffectiveness, it may be more useful to attend to the specific areas of life and everyday experiences in which girls feel ineffective.
Researchers within the eating disorders field have argued that high levels of perfectionism are integral in explaining patients’ high drive for thinness and the strong motivation to maintain their eating disorder (Bastiani et al., 1995; Bruch, 1973). Analyses in the current study indicated that group could significantly predict perfectionism, and that girls with anorexia nervosa did in fact score higher than girls who had not been diagnosed with anorexia nervosa. Further, of all the predictor variables, group had the highest predictive ability for perfectionism scores as compared to age and BMI. Previously, researchers have suggested that perfectionism in all areas of life, particularly academia and scholastic performance, was a characteristic of anorexia nervosa. For example, previous research by Eisele et al. (1986) indicated that perfectionism was significantly related to Grade Point Average, which could perhaps explain the group differences in academic scales of self-concept.

Some theorists have proposed models that configure adolescent anorexia as a response to the pubertal changes that occur during adolescence, and that girls starve themselves and strive for thinness in an attempt to avoid becoming adults, assuming reproductive responsibilities and accommodating the pubertal changes that accompany maturation (see Crisp, 1980; Garner, 1991). The results of the current analysis indicated that group significantly predicted maturity fears and was the only predictor of maturity fears. These results suggested that girls with anorexia had higher levels of fear associated with growing up and becoming an adult than the non-clinical sample, although there have been proposals that maturity fears are associated with the physical changes that occur to the body during puberty. If this was the case, it may be plausible to suggest that maturity fears would be associated with body dissatisfaction. However, analyses indicated that there was a small (and moderate at best) correlation between the two factors. Closer inspection of the items within the scale indicates that
maturity fears are a scale that are more about the increased responsibility associated with adulthood and maturity rather than the physical aspects associated with growing up.

The results of the current study also indicated that there was a significant group difference for asceticism. Again, for this factor, group was the only significant predictor for asceticism. This scale is one that focuses on the tendency to restrain from eating for spiritual and self-disciplining reasons. Although these motivations were common in early depictions of eating disorders and more commonly anorexia nervosa, cases that exist on this basis are not very common today (Garner, 1991), although, what may be common in patients is the gratitude and feeling of pleasure when they are able to control their urge to eat. The results for this scale however need to be interpreted with a degree of caution, as the reliability of responses for this scale was shown to be low for the non-clinical sample. This raises questions about the relative importance of including BMI in diagnostic criteria for eating disorders, particularly given its limited effect and predictive ability on eating disorder symptomatology.

**BMI Effects**

Much like the analysis for the SDQII-S, BMI was shown to have very little independent effect on eating disorder symptomatology. BMI was shown however to have predictive ability for drive for thinness, bulimia and body dissatisfaction scales. The results suggest that as BMI increases, body dissatisfaction, drive for thinness and bulimic tendencies also increase. Although these results are not surprising, it is interesting that BMI is not a stronger predictor of these three factors. Furthermore, given the importance of BMI in the clinical diagnosis of eating disorders, it is disappointing that it is not more strongly related to the EDI scores.
**Age Effects**

Age was shown to have strong predictive ability for 8 of the 11 EDI-2 factors, and was shown to have the strongest predictive ability for 3 factors including body dissatisfaction, interpersonal distrust and social insecurity. All three of these results are very interesting in that they suggest that as girls get older, they become more insecure and untrusting within their social interactions. Perhaps these findings reflect the changes that occur during the adolescent period in terms of their social relationships, as they become more frequently exposed to extra-familial relationships, they become unsure about their relationships with others and the quality of the relationships that they have with others.

The findings suggested that age was the best predictor of body dissatisfaction, suggesting that younger girls had lower body dissatisfaction than the older girls, which is not surprising. This result is in line with the assertions that suggest that as girls move through the adolescent period, their bodies change and move further away from societal ideals and girls become more aware of their weight and shape (Stice, 2002). However, although researchers have demonstrated that body image dissatisfaction is rife within the adolescent population, very few researchers have investigated the fluctuations that occur during adolescence. Although this result is not surprising, given that researchers have previously argued that during adolescence, as age increases, individuals become more critical of their physical appearance and become more dissatisfied with their body, it is interesting that body dissatisfaction is more strongly related to age than to height and weight ratios and eating disorder status. This result however does suggest that body dissatisfaction is more or less a perceptual and psychological construct rather than something that can be assessed in terms of objective height and weight measures, thus supporting assertions by Striegel-
Moore, McAvay, and Rodin (1986; see also Tiggemann, 1996), who suggest feeling fat can be differentiated from objectively being fat. In terms of clinical practice this result thus indicates that there are several components for the treatment of body image (if patients have body image distortion and disturbance); the body and objective aspects, and the psychological and emotional aspects. Furthermore, this result suggests that for clinicians and health practitioners, treating eating disorders in adolescence can be more complex than in adulthood, as symptoms may be compounded by the developmental changes that occur during the adolescent period.

**Self-esteem Differences**

Given that self-esteem is one of the robust and consistent predictors of eating disorders symptomatology, and because self-esteem is one of the primary characteristics of eating disordered populations, a model was evaluated to assess the effect of group on the various scales of the EDI-2 above and beyond the effects of self-esteem. The results of this analysis supported much of the literature, in that self-esteem could predict eating disorder symptomatology above and beyond diagnostic group. In fact, self-esteem was shown to be a stronger predictor of eating disorder symptomatology than diagnostic group.

Once self-esteem was included in the model, the effects of group were diminished, indicating that self-esteem in fact accounted for much of the group variance in eating disorder symptomatology. For example, once self-esteem was included, the significant effect of group of body dissatisfaction and interpersonal distrust became non-significant. This has very important clinical and practical implications in that it seems that this instrument may not be able to differentiate between clinical groups as well as it should, once the differences in self-esteem are accounted for. This result thus suggests that perhaps measures of self-concept should
be also included within assessments to increase differentiation between groups. Additionally, this finding gives some indication of how strong the global measure of self-esteem is.

**Significant Findings for Study 1**

*The Multidimensionality of Self-Concept*

Although there has been a recent surge in the research emphasising the usefulness of adopting the multidimensional perspective of self-concept (see chapter 2), the unidimensional approach to self-concept still dominates much of the research into self-evaluations, particularly in fields such as mental health. Researchers who have taken a unidimensional approach to self-concept, understand that self-concept can be understood in terms of a global measure (e.g. self-esteem) rather than in terms of evaluations of the self across various different domains (as is the case for the multidimensional approach to self-concept).

The results of the current study highlight the importance of considering the multiple dimensions of self-concept and hence demonstrate that self-esteem does not allow researchers and clinicians to examine the complex interrelations that exist between self-concept and various other psychological outcomes, such as eating disorder symptomatology. However, in accordance with recent suggestions, despite the benefits and importance of the multidimensional approach, the results of the current study and the theoretical underpinnings of the model itself, do not discount the importance of including self-esteem within analyses of the multiple dimensions of self-concept. Instead, the model itself emphasises that self-esteem should be included as one of the multiple domains of self-concept (see Marsh et al., 2004).
Summary of Findings: Study 2

It will be recalled that previous research in the field of body image and eating disorders has revealed inconsistent results, as highlighted previously in chapter 2. Reviews of the current literature have indicated that the largest effect sizes when looking at body image in clinical and non-clinical populations can be obtained by the use of attitudinal and affective measures of body image, rather than perceptual measures of body image (e.g. Cash & Deagle, 1997). One of the most favoured measures used in the field of body image is the silhouette matching task (and variations of the silhouette matching task). Most researchers have however only investigated the actual ratings and discrepancies (as an indication of body dissatisfaction), and very few have associated these measures to other outcome measures such as self-concept and self-esteem. For this study, the self-discrepancy theory for body image was adopted in an attempt to address the current limitations in the research.

Evaluation of the Self-discrepancy Model

Despite the preliminary support for the self-discrepancy theory based on factor correlations (obtained in preliminary CFAs; see chapter 6), the critical issue in this study was whether the discrepancy between actual and ideal ratings contributed to self-concept above and beyond actual and ideal ratings. In support of the self-discrepancy theory, path analyses revealed that actual ratings of body image had high predictive ability on all 11 domains of self-concept, and further demonstrated that the larger the actual rating, the lower the self-concept score. However, analysis of a path model in which actual and ideal ratings were predicting self-concept (the optimal assessment of the traditional form of the discrepancy model) indicated that although the effect of actual ratings remained consistent with the self-discrepancy theory, ideal
effects provided very little support for the traditional model for self-discrepancy. That is, the self-discrepancy theory assumes that when in the same model, actual ratings should have negative effects on self-concept (the larger I am, the lower my self-concept), whereas ideal ratings of body image should have positive effects on self-concept (the smaller my ideal is, the lower my self-concept). Results however, indicated that ideal ratings had variable effects on self-concept, 10 of which were insignificant. The results of this model thus indicate that actual ratings of body image in fact account for most of the variance in self-concept domains in comparison to ideal ratings. These results have important clinical and practical implications, as although there have been some suggestions that unrealistic ideal ratings may explain the body image issues associated with eating disorders, particularly within research that highlights the role of socio-cultural factors, these results indicate that they have little bearing on how girls see themselves.

The third model evaluated elaborated model of self-discrepancy theory, hence assessing whether absolute discrepancies could predict self-concept better than actual and ideal ratings. Results provided some support for the self-discrepancy model in that discrepancies were shown to significantly predict three dimensions of self-concept: self-esteem, physical appearance self-concept and emotional stability self-concept—the three scales of the SDQII-S that are most logically related to eating disorders. This result provides some support for the literature in that researchers have indicated that body dissatisfaction (which can be measured by the discrepancy between actual and ideal ratings) is highly associated with self-esteem. This particular result however, adds to the literature and current research, as the absolute discrepancy has been examined, hence indicating that discrepancies both positive and negative, negatively impact overall judgements of the self. Further, the results indicated that
discrepancies had a significant effect on evaluations of overall physical appearance. This is not surprising, given that body image ratings should reflect physical appearance ratings overall. Some research into the self-discrepancy theory for body image has indicated that discrepancies between actual and ideal ratings can lead to feelings of dissatisfaction and negative emotional responses (see Strauman et al., 1991). Given these results, it is not surprising that the absolute discrepancy was shown to have a negative effect on emotional stability self-concept.

Subsequent factorial invariance analyses indicated that there was invariance in the model between the two samples and hence, the structure of the model is reasonably similar for the clinical and non-clinical samples. In practical terms, this result indicates that although the pattern of relations and the strength of predictive ability may differ between the two groups, the structural nature of the model is equivalent, and hence can be compared.

*Group Effects on Actual, Ideal and Discrepancies*

Many researchers have argued that patients with eating disorders have distorted body images, implying that patients think that they are heavier than they actually are and that they have higher levels of body dissatisfaction (Garner & Garfinkel, 1997; Geller et al., 1998). However, as previously highlighted there has been some inconsistency in the research findings regarding body image (see Cash & Deagle, 1997). However, based on the traditional notion that anorexia nervosa patients would have body image distortion, it was expected that there would be significant group effects on actual and the discrepancies between the two ratings. Results suggested that as expected, clinical girls with anorexia nervosa rated their actual body image as larger than non-clinical girls. Subsequent regression plots indicated that even when BMI was equal, girls with anorexia nervosa rated
themselves as being heavier in comparison to the non-clinical sample of adolescent girls. This result thus provides some evidence to suggest that at least at a cognitive level, girls with anorexia nervosa have a distorted body image.

The effect of group was shown to be significant for ideal body image, suggesting that girls with anorexia nervosa had smaller and thinner ideals than their non-clinical peers. Subsequent regression plots of the ideal ratings clearly indicated that for the most part, girls with anorexia have smaller and skinnier ideals than non-clinical girls who have the same height and weight ratios. This result is interesting, as the ideal ratings could perhaps provide some insight into the drive for thinness that is characteristic of anorexia nervosa patients. Given that the effect of ideal on self-concept was insignificant, but the effect of the absolute discrepancy was significant, it would be interesting to assess what the difference between groups would be for opinions of attractiveness and assessments of what is too fat or too thin, and further, whether these ratings would differ for perceptions of others, as opposed to themselves. These evaluations would provide firstly, an indication of whether judgements of attractiveness would drive their motivation to be thinner, and their ideal ratings, and whether their perceptions of body image extend to others. These aspects of body image (meta evaluations and self evaluations) have not yet been examined in the literature, particularly within clinical samples, and hence may provide valuable insight into body image and the perception of body image. Hence future research should investigate these evaluations.

Study 2 also provided support for the assertion that girls with anorexia nervosa would have higher body dissatisfaction, as indicated by a discrepancy between actual and ideal ratings. Further, the regression plots indicated that the current clinical population of girls had higher levels of discrepancies than the normative sample,
despite having equal BMI ratios. Again, this result could provide further insight into the high levels of drive for thinness that is characteristic of anorexia nervosa girls, because if restricted eating behaviours are driven by the motivation to achieve the ideal body image, the larger the discrepancy, the higher the drive for thinness should be. This particular hypothesis however, was not assessed in the current study and should be evaluated further in future research regarding body image in eating disorders.

**Mediating Effects of Body Image on Relations between Group and Self-concept**

Mental health literature in the past has been somewhat limited, in that many researchers have concentrated on direct effects and mean differences between groups and have neglected to consider mediating relations between variables. Examining mediational relations within mental health could provide clinicians and researchers with a clearer indication how variables can both directly and indirectly affect others, which may have important clinical implications. In eating disorders, researchers have demonstrated that in university students, the association between self-esteem and dietary restraint/controlled eating was mediated by shape and weight concerns (Ross & Wade, 2004).

The current analysis evaluated the proposal that the relations between group (anorexia versus non-clinical) and various domains of self-concept would be mediated by measures of body image. Analysis revealed that the direct effects of group on physical appearance self-concept, emotional stability, math and general school self-concept were not affected by actual, ideal ratings or discrepancies. These results hence indicate that any differences between groups on these dimensions of self-concept are independent of the silhouette matching task variables and hence body image. For the physical appearance self-concept, this result is surprising, as it seems
logical that group differences in the evaluations of physical appearance would be more strongly related to body image ratings (actual and ideal ratings) and the discrepancy between what actual and ideal ratings.

However, the results did indicate that the effect of group on self-esteem was almost completely mediated by the silhouette matching task variables. This result suggests then, that any group differences in self-esteem levels are a function of body image variables as measured by the silhouette matching task. This emphasises that body image is a very important component for overall assessment of the self, particularly with reference to using self-esteem as a characteristic that differentiates anorexic girls from non-clinical girls (APA, 1994; Geller, Srikameswaran, Cockell, & Aitsoff, 2000).

**Significant Findings for Study 2**

The results of Study 2 did not provide support for the traditional self-discrepancy model of body image, which emphasises the signed discrepancy between actual and ideal ratings, but did provide support for the elaborated model proposed by Marsh and Roche (1996; see also Marsh, 1999; Marsh et al., 2005). Further, the results indicated that this elaborated model for self-discrepancy was applicable and generalisable to both clinical and non-clinical adolescent populations. More importantly, the results of Study 2 highlighted that the actual, ideal and discrepancies have differing effects on the various domains of self-concept, including self-esteem, and have a mediating effect on the association between group and self-esteem. These results have clinical and research implications, as very few researchers have employed this theoretical model to explain the role of body image and self-concept in eating disorder populations. Given that the self-concept profiles of girls with anorexia nervosa were shown to differ in comparison to non-clinical populations (as shown in
Study 1), this study indicated that the body image can account for the differences in self-esteem level, therefore emphasising the importance of body image in self-esteem.

Summary of Findings and Clinical Implications: Study 3

Utilising qualitative data analysis techniques, Study 3 addressed current limitations in the existing body of literature regarding the experiences and support needs of patients with chronic illnesses. More specifically, Study 3 explored the experiences and support needs of adolescents who had been diagnosed with eating disorders, who were at various stages of the illness trajectory. The study comprised three stages of analysis, the first of which included the analysis of in-depth interviews with adolescent inpatients and the existing body of eating disorders literature. Given that the instrument was not designed as a diagnostic tool for clinicians, but was developed as a tool that could be used within the clinical environment to perhaps increase rapport and feelings of connectedness between clinician and client, it was important that there not be an overlap between medical and psychological constructs that are adequately examined in assessment and diagnostic instruments. Hence, themes for the questionnaire were chosen based on the significant gaps within the literature and existing assessment tools, regarding the experiences and support needs of adolescent patients.

The second stage involved development and administration of a newly developed vignette style questionnaire that was based on the prior analyses of the interviews and literature. The themes that were selected for the instrument included aspects of treatment and experience with treatment, relationships with peers and parents, fears and anxieties associated with the disorder, recovery and perceptions of the disorder. The questionnaire was designed for respondents to openly respond to items with their own thoughts, feelings and experiences.
The third and final stage of this study involved analysis of the responses to the questionnaire to determine the commonality of experiences and support needs. Findings from both the frequency analysis and the analysis of the open ended responses highlighted that many patients (both present and former) may actually construct and understand their disorder in different ways. For example, some of the participants described the eating disorder as a part of their personality and identity. Understanding how patients see their eating disorder could have very important implications for treatment and provide information concerning factors that may affect patient acceptance, resistance and satisfaction with treatment. For example, that many of the patients who understand their eating disorder as something that defines them and is an aspect of who they are, illustrates the extent to which the patients value their eating disorder and hence, it would not be unexpected that they would be resistant to various treatment methods. Furthermore, this raises ethical and legal questions about involuntary treatment (see Halse et al., 2005; Tan et al., 2003). It is plausible that they would see the treatment as a method in which doctors and clinicians were attempting to take away an aspect of them. This is however, not to say that treatment should not occur, it simply raises questions about which methods would be most appropriate for these patients, and how clinicians should approach treatment for these individuals. As highlighted earlier, various authors (see chapter 2) emphasised the ethical dilemmas that clinicians may face in situations such as these—particularly when forced treatment is required for the safety and well-being of the patient.

For other respondents, the eating disorder was seen as external to the self, something that either protected them from the possible rejection that they might experience in their social interactions, or as something that controlled their behaviours and emotions. These descriptions and understandings of the disorder are very much in
line with Bruch’s (1973) assertion that patients had a tendency to “believe that neither their bodies’ nor their actions are self-directed, or not even their own” (p. 39). Moreover, the construction and understanding that anorexia nervosa controls behavioural and emotional responses is an established notion in narrative therapy (see Halse & Honey, 2004). Like the previous construction of eating disorders, these constructions also have important implications for treatment. Considering patients do not see the eating disorder as a part of themselves but rather as something that can be blamed for negative behaviours, clinicians may be able to adopt the narrative therapy approach and thus encourage patients to take control of their own actions, emotions and thoughts. In this process, patients are encouraged to externalise eating disordered behaviours, hence minimising the damaging effect that treatment might have on identity when undergoing treatment. It is clear then that clinicians at least need to be aware of how patients construct their eating disorder, and ideally would also develop and adopt treatment approaches that address these constructions (Lock et al., 2004).

Authors have indicated that patients with eating disorders become socially withdrawn throughout the illness trajectory (e.g. Garner, 1991; Crisp, 2005). Results from the current study also highlight this; however, the analysis elucidated some of the reasons for the social withdrawal and feelings of social isolation. Many of these reasons centred on the perception that others did not understand them and the fact that they preferred not to socialise with others. Open ended responses suggested that some of the respondents may have used social isolation and withdrawal methods to maintain and preserve their eating disorder. For example, some girls explained that they would become withdrawn because they were aware that friends would try to influence her and get her to eat. Hence, to avoid this, they would not go out and socialise with their friends.
Perceptions of socialising and peer relationships within the hospital however were shown to vary substantially. Some of the respondents indicated that other eating disordered patients provided a source of understanding and support, whereas others highlighted a concerning aspect of the treatment environment in which eating disordered patients are surrounded by other eating disordered patients. Respondents emphasised the negative influence that other patients could have on their motivation to change and the overall recovery process, through competition and comparisons which reinforced the eating disordered behaviours. These findings echo other investigations of the experience of eating disordered populations in inpatient treatment environments (e.g. Colton & Pistrang, 2004), and thus raise important clinical questions regarding whether patients in different stages of the illness trajectory should be placed together where close contact is inevitable and may have detrimental and deleterious effects on the progression toward improvement and recovery, or whether patients should be placed on general wards. Although it is intuitively appealing to think that patients should be separated from each other, separating chronic patients from patients who are motivated to recover could also have detrimental effects. Additionally, there may be negative outcomes of placing patients on general wards, as one participant implied; in her responses, she had learnt how to be eating disordered after spending time with eating disordered girls.

A prominent theme in the analysis was treatment and experiences with treatment. Respondents identified the existence and importance of two different streams of treatment, one for the psychological and mental aspect of the disorder, and one that focused on the body and gaining weight. The primary goal for the treatment of anorexia nervosa and other eating disorders, particularly within the inpatient environment, is to restore weight to avoid clinical compromise and long-term physical
complications (Halse et al., 2005). Although there is a variety of methods that clinicians can employ to achieve this, most involve strict menu plans and weight targets (Foreyt, Poston, Winebarger, & McGavin, 1998). The respondents in this study indicated that although clinicians address this component within the treatment models, consistently with findings from other studies (e.g. Colton & Pistrang, 2004), respondents emphasised the need and importance for psychological treatment to assist them in understanding their disorder, their emotions, and how to cope with the weight that they are expected to gain, hence lending support for the use of cognitive behavioural and emotive therapy techniques to assist patients develop skills to be able to cope with food and weight. These findings are very much in line with those of Halse et al. (2005) who indicated that patients with anorexia nervosa were more likely to accept and respond positively when they understood the treatment and the reason behind the treatment that they were receiving.

Flexibility and collaboration, particularly in terms of weight goals and menu plans, were aspects of treatment that respondents indicated that they wanted and valued. However, several respondents indicated that during the illness trajectory, there are times when flexibility and collaboration should not be an option as it would be detrimental to the recovery and treatment process. The dilemma here for clinicians is that if patients have some collaborative control over their treatment, they might well be more cooperative with treatment. However, progression towards recovery may not be satisfactory or patients may use this as a method by which they can maintain their disorder for longer. Whereas, when the treatment and treatment environment is seen as one in which patients have no input, patients may reject the treatment and rebel against the treatment. This was further emphasised by respondents who described family therapy and the control that they felt that their parents had. Although some
participants recognised the benefit of having the strict eating regimes and no input in treatment, most of these respondents highlighted that they only recognised this in retrospect. Hence, the extent to which patients value collaboration and control over treatment may be a reflection of their motivation to get better or maintain their disorder.

For all respondents, recovery was described as a process in which the individual needed to recognize that they needed to get better. The analysis of responses clearly indicated that in accordance with the transtheoretical model of change (see Prochaska & DiClemente, 1983), respondents recognised that they needed to be ready and motivated to change for any form of treatment to be effective. Further, much as the model of change stipulates, respondents highlighted that at various stages throughout the illness trajectory, they were ambivalent about change and recovery. This finding in the analysis of responses is also in line with those of Colton and Pistrang (2004) and Jordan et al (2003); however, it seems that ambivalence towards change is not exclusive to anorexia nervosa and applies to bulimia nervosa also. This finding has important clinical implications in that it suggests that motivation to change and recover may fluctuate throughout the trajectory, and hence patients might be more receptive to treatment depending on which stage they are at.

These results indicate that there is no real consistency in the way that anorexia nervosa and other eating disorders are experienced. The ways that the individual construes the disorder that they have been diagnosed with varies, which may inevitably affect the individuals’ response to the various treatment methods. Further, although research has highlighted that satisfaction and effectiveness of treatment varies between individuals, these findings suggest that responsiveness to treatment,
and experience with treatment, may be dependent on the level of motivation to maintain the disorder. The lack of consistency in the experiences and attitudes towards the eating disorder and the treatment that patients receive, raises questions about the generalisability of various treatment methods that are utilised in eating disorders, and encourages clinicians to integrate and merge various forms of treatment to address the issues and concerns that patients may have. Furthermore, as highlighted by Kordy, Haug and Percevic (2006), the current research emphasises the need to individually tailor treatment to match the patient and their needs. Furthermore, it emphasises the need and importance of developing cohesive multidisciplinary treatment teams and programs so as to target the various aspects of anorexia nervosa.

The current research thus provides some insight into the thoughts and feelings of individuals who have been diagnosed with anorexia nervosa or other eating disorders. Findings of particular note are the explanations and understandings that individuals have of their eating disorder, what it provides them with, and hence, what it would mean for them to be treated for the eating disorder. Having an increased understanding of what the eating disorder means to the patient not only elucidates the individual’s reasons for wanting to maintain the disorder but also gives the treating clinician a chance to develop a treatment strategy that addresses the eating disorder in the appropriate way.

**Theoretical, Clinical and Practical Implications**

The results of the present series of studies have advanced our understanding not only of the structure and nature of self-concept and body image in adolescents with and without anorexia nervosa, but also provided important and significant insight into the experiences of young people with an eating disorder. The current research
will hopefully also act as a basis for ongoing research within the field of eating disorders.

First and foremost, it is evident from the current findings that researchers and clinicians need to recognise the multidimensionality of self-concept in future research and clinical practice. Adopting the multidimensional approach to self-concept enables both researchers and clinicians to gain a more in depth understanding of how the self is related to other outcome variables such as eating disorders and eating disorder symptomatology. The results clearly demonstrate that the model is applicable to clinical populations and hence, both clinicians and researchers need to account for the multiple dimensions of self-concept, both in treatment and in promotion and enhancement programs. Furthermore, the current findings provide strong support for the use of the SDQII-S as an instrument that is able to reliably assess the various dimensions of self-concept in adolescent girls.

The more specific comparison of the self-concept profiles of clinical and non-clinical populations indicates that although there is evidence to suggest that self-esteem is lower for clinical girls (as suggested in the current body of literature), there are other domains of the self that also differ, indicating that clinical girls have deficits in specific areas of the self. Given the specificity of the deficits, clinicians need to account for these areas when they are developing programs for enhancement so as to specifically target areas of the self. Hence, although many treating clinicians adopt treatment and enhancement programs that target the overall and global sense of self, the current research results highlight that perhaps it is more effective and beneficial to target the various domains of the self, depending on what the desired outcome is. From a clinical perspective it is also important to emphasise that there are some areas in which the self-concepts of the clinical sample are as high or even higher than the
normative sample. Understanding of the complex profile of differences could provide clinicians with insights into how to reinforce positive feelings that girls in the clinical sample have, as a way to enhance self-perceptions more generally. Further endorsing the benefit of adopting the multidimensional approach both in theory and in practice, Lamourex and Bottorff (2005) argue that a central ingredient in supporting the recovery of anorexia nervosa is to help patients understand and recognise the limitations of seeing themselves as unidimensional beings and assist them in progressing their cognitions to recognise that they are multidimensional beings. Hence, if clinicians are to encourage patients to see themselves as multidimensional, clinicians need to recognise the multidimensionality of the self.

In terms of body image research and practice, the present findings add to the existing body of knowledge in that they provide evidence for a model that has seldom been used within the eating disorders field, and highlights the benefits of understanding body image in terms of actual, ideal and discrepancies between the actual and ideal ratings. Conceptualising body image in terms of actual and ideal ratings allows both researchers and clinicians to recognise and identify the aspects of body image that are unrealistic and perhaps distorted, particularly within clinical populations who place high value on physical appearance, and where body image is high. Furthermore, utilising the self-discrepancy theory for body image enables clinicians and researchers to understand the effect of the various aspects of body image on self-concept domains and overall evaluations of the self.

Recent research has indicated that body image disturbance and body image dissatisfaction is rife within the adolescent population, and given the rise in the incidence of eating disorders, it is not surprising that there has been a recent surge in the development and implementation of programs to target body image and prevent
eating disorders within schools and the general population. Within the adolescent population, the school environment can play an important role in either the encouragement of negative attitudes and behaviours associated with eating and body image, or the implementation of primary selective prevention programs (see Levine & Piran, 2004).

A common aim in prevention programs in eating disorders is to target major risk and protective factors to decrease the risk of the development of eating disorders. Self-esteem and body image are often targeted as factors to address in prevention programs both commonly targeted factors. Hence, programs are often designed to decrease body image disturbance, increase self-esteem and to educate the target population about the risks of dieting and other maladaptive eating behaviours (see Ghaderi, Martensson, & Schwan, 2005; Levine, Piran, & Stoddard, 1999; Weiss & Wertheim, 2005). Recent analyses of the effectiveness of some prevention programs however, have indicated that the effects of programs, although mostly positive, have been low to moderate in effect size (Paxton, 2002). Perhaps this is due to the constructs that the programs target and the assessment measures that are utilised to measure change in attitudes and evaluations. Given the evidence in the present investigation it seems that program developers should not only focus on self-esteem, but also on specific domains of the self and on specific aspects of body image. For example, instead of attempting to increase ideal body shape, perhaps target actual body shape and assess the cognitions associated with their actual ratings of body image. Furthermore, it seems that the emphasis that is placed on the physical aspect of the self is largest in these programs. Perhaps it would be effective to focus on the other aspects of the adolescent experience that could assist them in developing more positive evaluations of the self in other domains. The results of the present studies
perhaps suggest that larger effect sizes may have been obtained if the multidimensional SDQII-S had been utilised or if specific domains of self-concept were targeted within the program instead of overall global self-esteem.

The current findings also elucidated and identified experiential factors that have not been adequately addressed by previous researchers, particularly regarding the meaning and value that sufferers attach to their eating disorder, the processes and factors that influence the effectiveness of treatment and their willingness to engage in treatment. The results also highlighted the factors associated with recovery and motivation to get better, which researchers and clinicians can incorporate into their treatment programs, and theories that attempt to explain recovery. For example, patients indicated that they recognised two aspects of treatment and that although the body and physical issues were addressed in treatment, they felt a need for clinicians to also address the psychological and emotional aspects of the disorder. Hence, insight into how the patient understands and perceives the current treatment that they are receiving may assist clinicians to develop programs that are more tailored to the individual’s needs.

The vignette style questionnaire was shown to be an effective method to gather information and details about the experiences and support needs of young people who had been diagnosed with an eating disorder. The vignette style utilised in the development of each of the items enabled respondents to use their own words to tell their stories. Although respondents were somewhat limited to the specific themes that were being investigated in detailing their experiences, they were given the opportunity to express and voice their opinions and thoughts regarding their eating disorder. It seems that the instrument may be advantageous for the use in clinical settings, particularly as a tool that increases connectedness and rapport between the
treating clinician and the patient. It could be used a homework task for clients in which they would have the time to reflect and consider their experiences with their eating disorder to date. Additionally, it would allow them to communicate their thoughts on the characteristics of the treatment methods that they have found most useful and helpful. Clinicians may choose to develop further items to address other areas of the eating disordered experience that have not been addressed within this study, to provide important insight into the patient.

The use of the vignette style questionnaire also has important research implications, as it highlights the benefits and advantages of allowing the respondent to communicate their own thoughts and feelings. Clearly, the information that was provided by the respondents was valuable in elucidating the patient perspective, and analysis of the data revealed the richness of the responses obtained. It is thus obvious that providing participants and respondents with an opportunity to respond openly about their experiences in an anonymous fashion can enhance our understanding of the patient and the disorder that they are living with. Although the use of qualitative research methods has increased in popularity in the last several decades, the value of qualitative methods in providing new and rich information is undeniable.

**Strengths of the Current Investigation**

There are a number of strengths within the current research study which have been incorporated to address limitations within the existing body of eating disorders literature. Firstly, although the EDI-2 and SDQII-S are well established assessment instruments, very few researchers have examined the structural invariance of the scales in various populations, despite comparing various groups on mean scale scores. The limitation in this is that researchers have been unclear as to whether the assessment tools that they have used are equally valid for the populations that they are
investigating. Rigorous CFA procedures were employed in this study to address these limitations in the existing literature. The CFA analyses clearly demonstrated the psychometric properties of each of the instruments, and thus highlighted the appropriateness and strength of the instruments.

Recent advances in statistical methods and analyses such as SEM and MIMIC techniques, have allowed researchers to examine more complex relations between various constructs and outcome measures. Despite the complexity of mental illness however, very few researchers have applied these techniques to their investigations. In the current research, SEM techniques allowed for a powerful assessment of the effects of group, age and BMI on self-concept and body image measures without relying on calculated scale scores that do not model measurement error. Furthermore, these techniques allowed for a strong test of the mediating effect of body image variables on the effect of group on self-esteem.

To date, the eating disorders field has lacked theoretically driven research, particularly for body image and self-concept research. The current study thus attempted to address this current limitation in the literature, and hence an inherent strength of the research is that it employed strong theoretical models to assess self-concept and body image in girls with and without anorexia nervosa. Recent self-concept research has clearly demonstrated—empirically and theoretically—that self-concept is multidimensional. However, despite this assertion and the presence of strong research evidence to suggest that evaluations of the self is multidimensional, researchers within the eating disorders field have been heavily reliant on unidimensional and global measures of the self. The current research however, has demonstrated the usefulness of utilising the multidimensional approach to self-concept, particularly in eating disorders. In accordance with the multidimensionality
of self-concept, the self-discrepancy theory for body image was also adopted to examine body image in adolescent girls. The self-discrepancy theory for body image has not been utilised within the eating disorders research, despite the intuitive appeal of the model. In adopting this approach to examining body image, the present research used one of the most favoured methods for assessing body image. The silhouette matching task boasts good reliability and construct validity, and the current version of the instrument addresses previous limitations regarding the spread of body shapes along the continuum. Furthermore, given the age group of the participants, the instrument avoids limitations in verbal ability.

Despite a recent increase in the research that has investigated eating disorders within the adolescent population (excluding incidence and prevalence research), many researchers have tended to focus on the adult population of sufferers. This is most apparent in the sparse literature that explores and examines the experiences of individuals who have been diagnosed with anorexia nervosa. The use of comprehensive and rigorous qualitative techniques allowed for an in depth and information rich opportunity to increase current understandings of the experiences of adolescents and young people who had lived with an eating disorder. This component of the research provided individuals with a voice in which they could express how the eating disorder impacted their relationships with their peers and their parents, how they understood the eating disorder, what it meant to them, and how they perceived treatment and recovery.

Taken together, the strengths of the current research and research design, the qualitative and quantitative data analytic methods and the theoretical approaches adopted, the present study provides a significant and unique contribution to eating disorders research.
Limitations of the Current Investigation

As with any research that occurs within the natural environment, there are various limitations of the current research that need to be considered when interpreting and generalising the results. One of the first issues to consider within the first two studies of the thesis is the nature of the questionnaires employed to examine self-concept and eating disorder symptomatology. These were both self-report questionnaires, and an inherent limitation in administering self-report questionnaires is that the responses that are obtained may not be a true reflection of the individuals' perceptions and attitudes, due to factors such as social desirability. This may be particularly true for the clinical sample who may have been wary about the involvement of the research team in treatment. Although researchers attempted to address this by ensuring that their responses would remain anonymous, the accuracy of the responses cannot be guaranteed.

In line with the self-report administration of self-concept and eating disorders assessment instruments, some of the normative sample were also expected to report their own height and weight. Although scale and tape measure were provided to one group of school students, other schools did not have the resources. Despite these concerns, recent research has indicated that for both adults and adolescents, self-reported weight is generally accurate and highly reliable. Studies have also shown that individuals with eating disorders have a higher reliability and accuracy in their reports of their weight (see Swenne, Belfrage, Thurfjell, & Engstrom, 2005). This was not a concern for the clinical sample for the quantitative components of the study (Studies 1 and 2) as their heights and weights were obtained from their medical records.

Although the normative sample was large, the size of the clinical sample for the quantitative analyses was comparatively small. Further, although the sample size
for the quantitative analyses is large in comparison with existing research in the field, various authors have highlighted that the desirable sample size for SEM and CFA techniques is 200 (e.g. Marsh, Balla & Hau, 1996). To overcome this issue of small sample size for these analyses, item parceling was employed for both the analysis of the clinical and non-clinical samples. Despite this, the sample size of the clinical sample limited the number and types of analyses that could be conducted using more advanced statistical methods.

The current investigation is cross-sectional. Hence, although groups can be compared in terms of self-concept and body image, a more thorough investigation of the effects of self-concept and body image in eating disorders would require either a prospective study or a longitudinal research design in which the collection and analysis of at least two time waves is required. This is particularly the case for analyses positing mediated effects that depend in some way on the assumptions of causal ordering that cannot be easily tested with cross-sectional data. Hence, to address this, future research is required to utilise the complex SEM methods to assess two or more time waves of data to assess the causal ordering of relations between self-concept and eating disorder characteristics.

Although the current research was limited to patients who were adolescents and currently receiving treatment for anorexia nervosa—this has various implications for the generalisability of the results at hand, particularly as the patients were at various stages of the illness trajectory. Further, it is likely that the manifestation and psychopathology of anorexia nervosa in populations that are not currently in the public hospital system or not receiving treatment at all, would be different. A further possible limitation to the current study is that the age at onset was not controlled. Authors have suggested that the presentation of the disorder and the behaviours and
attitudes vary, depending on the stage of illness trajectory and the amount of treatment that they have been exposed to. Further, just as the manifestation of the disorder may differ for patients who are diagnosed during adulthood, childhood onset may differ from adolescent onset.

In Study 3, a bulk mail-out method was employed to circulate the Experiences and Support Needs Questionnaire. As with all mail-out surveys, there is a risk that the responses obtained are somewhat biased, as participants are self-selected. The participants who responded, despite having some positive and negative comments to make about various aspects of treatment and their experiences and having varied experiences and comments about their parents, peers and understandings of anorexia nervosa, only particular individuals would feel compelled to participate in the study. Some individuals for example may not have felt comfortable discussing their experiences, or may not be ready to talk about their experiences, whereas many of the respondents in this study had written notes to the researchers indicating that they had written diaries and would be happy to provide a copy. On the other hand, respondents took the opportunity to express their dissatisfaction with their treatment, or with their families, regarding the treatment and their understanding of the disorders. Although inherent in a study that is based on a mail-out study, this may still be considered as a limitation of the study.

Furthermore, although the best attempts were made to ensure that responses from both interview patients and questionnaire respondents were objective, we can not be sure whether these illustrations of the treatment that they have experienced are entirely accurate. For the most part, participants were aware that although their responses were anonymous and confidential, and that we were separate to the
treatment team, we were working in cooperation with the hospital and the treatment staff.

Summary

The current research findings demonstrated the relative usefulness of adopting the multidimensional model of self-concept to examine the self-concept profiles of different populations. More specifically, the present investigation provided support for the generalisability of the multidimensional model of self-concept and the self-discrepancy theory for body image to a sample of adolescent girls with anorexia nervosa. Further, the current research demonstrated that the SDQII-S and the EDI-2 are psychometrically sound instruments for the assessment of self-concept and eating disorder symptomatology in adolescent girls.

The findings also provided significant insight into the experiences of young people who had been diagnosed with an eating disorder. Specifically, the findings highlighted some of the factors that are associated with treatment and recovery, their perceptions of the eating disorder that they are living with or have lived with and their understanding of the eating disorder that they had been diagnosed with. This analysis of the responses could be used to further current understandings of patients and the eating disorder that affects their everyday lives. In gaining a better understanding of the patient and their experiences it is hoped that researchers and clinicians can develop and tailor more effective treatment methods which patients are more willing to engage with.

Taken together, it is hoped that the findings can advance current understandings of the disorder and the population which it affects, and can be used as a basis for future research within the field.
CHAPTER 9

SUMMARY AND CONCLUSIONS

Anorexia nervosa is a chronic and serious illness that can have severe psychological and physiological consequences for the patient. Treatment and recovery is often highlighted as a long and complex process that can be characterised by frequent relapses and poor outcome. Researchers have highlighted the significance of anorexia nervosa within the adolescent population and particularly within the female adolescent population. However, despite the fact that anorexia nervosa and other eating disorders are illnesses that are more common in adolescent females than in any other population, it is surprising that much of the research within the field has been conducted with adult sufferers.

Moreover, given the ever increasing incidence of the disorder and a lack of clarity regarding the factors that are involved in development, maintenance and recovery from anorexia nervosa, there is a need for more sophisticated and in depth research that centers on the manifestation of the disorder in the adolescent population. The present study addressed current limitations within the eating disorders literature by adopting established models to explore self-concept, body image and the relations
between these in two adolescent populations: one sample that had been diagnosed with anorexia nervosa, and one normative, non-clinical sample.

The present study addressed current limitations within the eating disorders literature by conducting a series of three studies investigating self-concept, body image and experiences and support needs of adolescent girls with anorexia nervosa. Studies 1 and 2 sought to apply two established models of self-concept and body image to two samples of adolescent girls: the multidimensional model of self-concept and the self-discrepancy model for body image. Study 3 employed rigorous qualitative techniques to develop a new vignette style questionnaire used to explore the experiences and support needs of young people diagnosed with eating disorders. Hence, due to the paucity of empirical research within the mental health sector, the current thesis can provide important insight into the various aspects of adolescent anorexia nervosa and the findings can be used to inform aetiology and treatment models.

One of the central aims of Study 1 was to assess the psychometric properties of the SDQII-S and EDI-2. These measurement instruments were evaluated to ensure that the associations between variables could be accurately examined. Rigorous and sophisticated methods demonstrated that the instruments employed were valid tools for use in both the clinical and non-clinical samples. Furthermore, this study attempted to explore the self-concepts of these two different samples of adolescent girls. The central finding of Study 1 was that the multidimensional self-concept profiles of girls with anorexia nervosa were different and that, although it is commonly thought that girls with anorexia nervosa evaluate themselves more negatively, the current results indicated that there are various dimensions of the self that they do not evaluate.
negatively in comparison to other girls their age. The findings of Study 1 also highlighted that adopting the multidimensional approach to self-concept can provide more clarity regarding the associations between self-concept and eating disorder symptomatology.

Study 2 provided a comprehensive examination of the self-discrepancy theory for body image. Capitalising on the inherent advantages of having a pictorial scale for use in younger respondents, the silhouette matching task was employed to evaluate various ratings of body image. A key strength of this study was the use of complex and strong analytical techniques to evaluate the differential effects of actual, ideal and discrepancies in body image on self-concept and overall evaluations of the self. Findings indicated that actual, ideal and absolute discrepancy indicators of body image were also mediating variables for the association between eating disorders (group-clinical versus non-clinical) and various domains of self-concept, and most importantly self-esteem. Thus highlighting the significance of body image in global evaluations of the self, particularly when differentiating between anorexic girls and non-anorexic girls.

Study 3 was designed to provide detailed insight into the experiences and support needs of young people diagnosed with an eating disorder. Utilising qualitative techniques, the findings provided valuable insight into how the patient can construe various aspects of the disorder and the illness trajectory. Specifically, findings indicated that there were several constructions and understandings of eating disorders that were expressed by the young respondents. Furthermore, the respondents clearly identified how their eating disorder impacted their social relationships (both within the clinical setting and external to the clinical setting) with their parents and their peers.
Additionally, the respondents also described their varying and often ambiguous feelings about recovery and the recovery process. The findings also emphasised the ethical and medical challenges that clinicians and treatment teams face when providing treatment and therapy for these patients, who identify the need to have multidisciplinary treatment teams and individually tailored treatment programs. The benefits of gaining a deeper understanding of patients enables researchers and clinicians to identify factors that might engage and support patients, and hence the development of clearer aetiology and treatment models.

A practical outcome from this thesis was the development of the Experiences and Support Needs Questionnaire for young people with Eating Disorders. Although the instrument has not yet been psychometrically evaluated, it is hoped that aspects of this instrument can be used by clinicians within the treatment process as it was designed as an instrument that could be used to increase rapport between the clinician and the patient. In doing so, given the format of the questionnaire, it could also open another avenue for increased communication and understanding between the clinician and their eating disordered patient. Within the current study, the responses to questionnaire items provided much insight into patients' understanding of their disorder, how it affected them and how it affected their everyday lives. Furthermore, the findings highlighted the challenges associated with and the complexities of treatment and recovery from anorexia nervosa and other eating disorders.

In sum, the results hold substantive and methodological implications for both researchers and clinicians, particularly in terms of the assessment of body image and self-concept. Methodologically, despite the complexity of mental health, very few
researchers in mental health, and more specifically eating disorders, have used more sophisticated and complex methods such as CFA and SEM to investigate the effects of predictor variables on outcomes. Furthermore, very few researchers have assessed mediating relations between predictors and outcomes. Hence, the current study highlighted the insight that methods such as these can provide for the development of models for eating disorders and the factors that are associated with it. Importantly, the findings of the current series of studies highlighted not only the complexities of patients with anorexia nervosa and their experiences but also emphasised the complex nature of the self and more specifically, the relations between self-concept, body image and eating disorder symptomatology.
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APPENDIX 1

Additional Descriptives for Clinical Sample 1

To reiterate, this sample of adolescent girls consisted of 76 girls who had received a primary diagnosis of anorexia nervosa. They were aged between 12 and 18 years of age and were currently receiving treatment at one of the two participating eating disorder treatment units. Both inpatients ($n = 35$) and outpatients ($n = 41$) were recruited for the study.

*Ethnicity and Country of Birth*

Of the 76 participants, majority of the participants identified themselves as being Australian ($n = 53$), whilst others indicated that they were Chinese ($n = 6$), Italian ($n = 3$) and Lebanese ($n = 2$). Other participants identified themselves as Philippino, Iraqi, German, Syrian and Maltese. A large proportion of these participants were born in Australia ($n = 69$). Other girls were born in China ($n = 1$), Philippines ($n = 1$), Hong Kong (1) and various European countries. Parental country of birth also reflected these frequencies.

*Education and School Demographics*

Sixty four of the girls included in this sample indicated that they were still at school. Most of the participants were in grade 8 ($n = 11$), 9 ($n = 16$), 10 ($n = 11$) and 11 ($n = 12$). A smaller proportion of girls were in grade 6 ($n = 1$), 7 ($n = 6$), and 12 ($n = 10$) of school. Data indicated that there was an equal distribution of girls who attended all-girls schools ($n = 33$) and coeducational schools ($n = 29$). In providing details about their schooling, girls were asked to indicate their average attendance at school within
the last 3 months. It would not be surprising if their attendance at school was low, however both the eating disorder units had school programs that were run during the day for the patients so they would not fall behind in their work. Data indicated that only a handful of participants had attended school less than 3 days a week \((n = 8)\). Most attended school 4 or more days of the week.

Of the girls who were no longer in school \((n = 12)\), 8 had left school after completing grade 12. Seven girls had gone onto to start university, and 2 were attending courses at TAFE. Nine of these girls who had continued with higher education were still completing their courses at the time of the questionnaire administration.

**Family and Health**

Most of the participants in this sample came from families consisting of 3 or more members, that is, most girls were living with both their mother and their father, and also their siblings. More specifically, 31.6\% of the girls lived with their mother and father and had both brothers and sisters; 27.6\% of the girls lived with both parents and had one or more brothers; and 21.1\% of participants lived with both parents and had one or more sisters. Only a small proportion of girls were only children (5.3\%) or had single parents (7.9\%).

In completing the demographics questionnaire, girls were asked to indicate their perception of their health. Given that most of the girls were receiving inpatient care, most girls would have poor current health status. However, in line with the diagnostic criteria regarding patients’ denial of the seriousness of their disorder, 49 of the 76 girls indicated that their health was good or excellent and only 6 indicated that their health was poor. Twenty one girls indicated that their health was fair.
At the time of diagnosis, a significant portion of the girls were unsure as to whether they agreed with the diagnosis of anorexia nervosa \( (n = 21) \). Not surprisingly, most of the girls did not agree with the diagnosis that they had received \( (n = 40) \), whereas only 15 girls agreed with the diagnosis that they received. At the time of the questionnaire administration however, these opinions changed, though many girls still remained unsure as to whether they agreed with their diagnosis \( (n = 25) \), the majority of the girls agreed with their diagnosis of anorexia nervosa \( (n = 37) \). However, a smaller proportion of girls still disagreed with their diagnosis \( (n = 14) \).

**Treatment**

Girls were also asked specific details regarding the treatment that they had received throughout their illness trajectory. At some stage of their illness, 56 girls indicated that they had been hospitalised for their anorexia nervosa, 45 of whom had been in hospital once, and 13 of whom had been in hospital more than once.

Forty eight girls had at some stage during their illness had a Nasal Gastric Tube (NGT) inserted, and had been fed through the NGT. Fifty percent of girls had received some form of family therapy as a part of their treatment program and almost all girls (93.4%) had received individual psychological treatment.

It is not uncommon for patients to receive external treatment for their eating disorder, or to be part of any other treatment program, particularly given rates of relapse in patients. Data indicated that most participants had not been a part of any other treatment program (76.3%).
APPENDIX 2

Additional Descriptives for Clinical Sample 3

This particular clinical sample consisted of 84 young girls and women who had been diagnosed with anorexia nervosa or any other eating disorder. This sample of participants was accessed through medical databases, and contacted by mail. Each of the potential participants was sent information and questionnaire packages and asked to complete and return the Experiences and Support Needs Questionnaire that had been enclosed in the package. Although the package was sent to males and females, all the respondents were females.

Country of Birth and Ethnicity Demographics

The majority of the respondents within this sample of respondents were born in Australia \((n = 78)\) and most respondents identified themselves as Australians \((n = 71)\), whereas a small proportion of the sample identified themselves as Italian \((n = 5)\), Chinese \((n = 3)\) and Lebanese \((n = 3)\).

Education and Schooling Demographics

Much like the other samples, respondents were asked about their level of education and schooling. Unlike the previous sample of clinical girls, over half of the current sample no longer attended school \((53.6\%)\). Of the girls who were still in school, most girls were in years 10 \((n = 9)\), 11 \((n = 7)\) and 12 \((n = 10)\). The majority of the proportion of girls who no longer attended school completed year 12 of their schooling \((55.6\%)\). Other participants indicated that their final year at school was year 10 \((24.4\%)\)
and 11 (17.8%). One participant had completed year 7, however did not continue with her secondary education.

Twenty nine of the girls who no longer attended school had gone on to post secondary education; 50% went to university, 33.3% began a TAFE course, and 6.7% began apprenticeships.

**Family, Health and Treatment**

Like the previous clinical sample, these respondents were asked to indicate the members of their immediate family. Again, most of these respondents indicated that they lived with both their parents and had one or more siblings \(n = 59\). A small proportion of the sample indicated that they were the only child in their family and lived with both of their parents. In line with the previous sample of clinical patients, only a handful of respondents had single parents and lived with their mother \(n = 9\).

When asked to rate the state of their general health, over half of the participants indicated that their health was good \(59.3\%\), whereas 16% indicated that their health was excellent, and 18.5% indicated that their health was poor. Unlike the previous sample of adolescent girls, not all of these participants were currently receiving treatment within the hospital system. However, BMIs suggest that over 50% of the respondents were still underweight (with BMIs of less than \(20\text{kg/m}^2\)), indicating that perhaps a proportion of this sample was also in denial of their condition and the seriousness of their low weight. Interestingly, 4 of the girls had BMIs that were within the overweight and obese range. Girls were also asked to rate their current condition, as an indication as to whether they thought that they had recovered from their eating disorders at the time that they were completing the questionnaire. Most of the girls
indicated that their condition had either improved (46.3%) or that they had recovered from their eating disorder (36.3%). Of the girls who had indicated that their condition had improved, 71.2% of them still had BMIs below the normal range. Furthermore, for those girls who indicated that they had recovered from their eating disorder, 46.2% of them had BMIs that were still below the normal range. Smaller portions of girls indicated that their condition was either static (11.3%) or worse (6.3%).

On average, girls had received their diagnosis 39 months prior to the administration of the questionnaire, and a significant portion of the girls indicated that at the time that they had received their diagnosis, they did not agree with the diagnosis that they had received (54.3%). The remainder of the girls indicated that they did not agree with their diagnosis at the time of their assessment. At the time of questionnaire administration however, the majority of the girls had changed their minds, and indicated that they now agreed with the diagnosis that they had received.

Of the girls who indicated that they had received some treatment throughout their illness trajectory, girls were asked to indicate whether they had received various forms of treatment at some stage during their illness trajectory. The frequencies for these are shown below in Table A2.
<table>
<thead>
<tr>
<th>Type of Treatment</th>
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<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselling</td>
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<td>15</td>
</tr>
<tr>
<td>Inpatient Care</td>
<td>57</td>
<td>22</td>
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<td>Outpatient Care</td>
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<td>Individual Therapy</td>
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<td>Group Therapy</td>
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<td>18</td>
<td>61</td>
</tr>
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<td>Chinese/Herbal Therapy</td>
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<td>72</td>
</tr>
<tr>
<td>Work with Dietician</td>
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<td>16</td>
</tr>
<tr>
<td>Feminist Therapy</td>
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<td>79</td>
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<tr>
<td>Hypnotherapy</td>
<td>1</td>
<td>78</td>
</tr>
<tr>
<td>Medical Treatment</td>
<td>52</td>
<td>27</td>
</tr>
</tbody>
</table>
APPENDIX 3

Additional Demographics for Non-clinical Sample

To reiterate, the data obtained from the non-clinical (normative) sample of adolescent girls was used in both Studies 1 and 2. There were a total of 829 high school students who were recruited from 3 different private schools in Sydney. Girls were aged between 12 and 18 years of age and although girls from grades 7 through to 12 were recruited, as highlighted in chapter 4, most of the participants were in grades 7 to 9. Girls’ average BMI was within the healthy weight range ($M=20.35$, $SD=3.24$). Closer inspection of the frequencies revealed that an alarming proportion of this non-clinical population was in fact underweight (43.4%), and 8.4% would be classified as overweight and obese.

Ethnicity and Country of Birth

Although a major proportion of this non-clinical sample were Australian born (88.7% of the sample), only half of the total non-clinical population identified themselves as Australian, whilst 49 students (7.1% of the students) identified themselves as having Lebanese background. The next largest population of students identified themselves as Italian (5.2%). Smaller proportions of students identified themselves as Vietnamese, Chinese and Greek (1.7%, 0.7% and 0.7% of the sample respectively). Only one percent of the high school sample indicated that they were of Aboriginal Torres Strait Islander descent, whilst a large percentage of participants indicated that they identified with other cultural backgrounds (26.2%).

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Almost all of the girls from the non-clinical sample indicated that the main language spoken at home was English (80.7% of the population), whilst a very small proportion of girls indicated that the main language spoken at home was Lebanese/Arabic (4.0%) and Filipino/Tagalog (2.2%). Other languages included Italian, Greek, Spanish, Chinese and Vietnamese.

**Family**

Girls were also asked about their mother’s and father’s country of birth. Data indicated that the majority of both mothers (59.1%) and fathers (55.8%) were Australian born. A major proportion of the girls in this sample lived with both of their parents and at least one other sibling (83%), whilst only a small proportion of the participants lived in single parent homes (7.5%).
APPENDIX 4

Demographics Questionnaire for Clinical Sample 1 and 2

Multiple Perspectives of Anorexia Nervosa in Girls
Please answer the questions below. Your answers will be confidential and will not identify you in any way.

Part A Background information (please print)
1. First Name: __________________________ Surname __________________________

2. Date of Birth: ______ / ______ / ______

3. Age? (please tick):
   - 12 years
   - 14 years
   - 16 years
   - 18 years
   - 13 years
   - 15 years
   - 17 years
   - Other: ______

4. Religion __________________________

5. Country of Birth (please tick):
   - Australia
   - Hong Kong
   - Taiwan
   - China
   - Italy
   - United Kingdom
   - Greece
   - Singapore
   - Vietnam

   Other country: ______

6. Language spoken at home: __________________________

7. Ethnic group (e.g., Aboriginal, Australian-Chinese, Vietnamese-Australian, etc)? ______

Part B: Schooling

1. Are you currently at school?  □ Yes  □ No

2. Which best describes your school? (please tick)
   - Non-government
   - Government (Comprehensive)
   - Government (Selective)
   - Co-educational
   - Girls only
   - Other: __________________________

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3. Year at school? *(please tick)*
   
   Year 7  □  Year 9  □  Year 11  □  Not applicable  □
   Year 8  □  Year 10  □  Year 12  □

4. If you are a school student, which best describes your average attendance over the last 3 months ... *(please tick)*:
   4 or more days  □  3 days  □  2 days  □  1 day  □  Less than
   a week  □  a week  □  a week  □  a week  □  1 day a  □
   week

5. If you are a school student, do you have a part-time job or do occasional work?
   □ Yes  □ No

Part B2: Non School Students *(only answer if you ARE NOT a school student)*

1. Your last year of school? *(please tick)*:
   Year 7  □  Year  □  Year 9  □  Year 10  □  Year 11  □  Year 12  □

3. Type of post-school education, if any (eg TAFE, university, apprenticeship, short-course, etc).
   ________________________________________________________________

4. Did you complete the course?  Yes □  No □  Still completing □

5. Current work, if any?
   ________________________________________________________________

6. If you are working, what best describes your working hours? *(please tick)*
   Casual/irregular  □  Regular part-time work  □  Full-time work  □

PART C - FAMILY BACKGROUND

1. Who belongs to your immediate family e.g., mother, father, brothers etc?
   ____________________________
2. Country was your mother born in? ______________________

3. Country was your father born in? ______________________

PART F – HEALTH

1. How would you describe your general health now? (please tick):
   Excellent ☐  Good ☐  Fair ☐  Poor ☐

2. Height (cm) ______________________

3. Weight (kgs) ______________________

4. Age at first menstrual cycle ______________________  Not applicable ☐

5. Has a doctor diagnosed you with anorexia nervosa? Yes ☐  No ☐

6. If yes, when was the diagnosis? __/__/____

7. What was the exact diagnosis?
   ______________________

8. Did you agree with the diagnosis at the time? Yes ☐  No ☐  Not sure ☐

9. Do you agree with diagnosis today? Yes ☐  No ☐  Not sure ☐

Thank you for your help with this important research
APPENDIX 5

Demographics for Non-Clinical Sample

Self-concepts, Eating Behaviours and Eating Attitudes of Adolescent Girls

Please answer the questions below. Your answers will be confidential and anonymous.

Part A: Background information (please print)

1. Date of Birth: [ ] [ ] [ ] [ ] [ ] [ ] [ ]

2. Age? (Please tick)
   - 12 years [ ]
   - 13 years [ ]
   - 14 years [ ]
   - 15 years [ ]
   - 16 years [ ]
   - 17 years [ ]
   - 18 years [ ]
   - Other [ ]

3. Religion ... [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

4. Country of Birth: (please tick)
   - Australia [ ]
   - Hong Kong [ ]
   - Taiwan [ ]
   - China [ ]
   - Italy [ ]
   - United Kingdom [ ]
   - Greece [ ]
   - Singapore [ ]
   - Vietnam [ ]
   - Other country? ... [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

5. Language spoken at home? ... [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

6. Ethnic group (e.g., Aboriginal, Australian-Chinese, Vietnamese-Australian)? ...

Part B: Schooling

1. Year at school? (Please tick)
   - Year 7 [ ]
   - Year 8 [ ]
   - Year 9 [ ]
   - Year 10 [ ]
   - Year 11 [ ]
   - Year 12 [ ]

2. Which best describes your average attendance at school over the last 3 months? (Please tick one)
   - 4 or more days a week [ ]
   - 3 days a week [ ]
   - 2 days a week [ ]
   - 1 day a week [ ]
   - Less than 1 day a week [ ]
3. Do you have a part-time job or do occasional work? (Please tick one)
   Yes ☐1  No ☐2

4. If you have a part-time job or do occasional work, what type of job is it? (Please write your answer)

Part C: Family background
1. Who belongs to your immediate family e.g., mother, father, brothers etc? ...

2. What country was your mother born in? ...

3. What country was your father born in? ...

Part D: Health
1. How would you describe your general health now? (Please tick one)
   Excellent ☐1  Good ☐2  Fair ☐3  Poor ☐4

2. Height (cm) ...

3. Weight (kgs) ...

4. Age at first menstrual cycle ...

5. Have you ever thought about losing weight? (Please tick one)
   Yes ☐1  No ☐2

6. Do you ever try to lose weight? (Please tick one)
   Never ☐1  Rarely ☐2  Sometimes ☐3  Often ☐4  Usually ☐5  Always ☐6

7. If yes, how have you tried to lose weight? (Please write your answer)
   ...

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<table>
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<tr>
<th>STATEMENT</th>
<th>False</th>
<th>Mostly False</th>
<th>More False Than True</th>
<th>More True Than False</th>
<th>Mostly True</th>
<th>True</th>
</tr>
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<tr>
<td>1  MATHEMATICS is one of my best subjects</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2  I have a nice looking face</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>3  Overall, I have a lot to be proud of</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<td>4  I am honest</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5  I enjoy things like sports, gym, and dance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6  I am hopeless in ENGLISH classes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
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<td>7  I worry more than I need to</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8  I get along well with my parents</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9  I get bad marks in most SCHOOL SUBJECTS</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<td>10 I am not very popular with members of the opposite sex</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>11 It is difficult to make friends with members of my own sex</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>12 I get good marks in MATHEMATICS</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>13 I am good looking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>14 Most things I do, I do well</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>15 I often tell lies</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>16 I am good at things like sports, gym, and dance</td>
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<td>2</td>
<td>3</td>
<td>4</td>
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<td>19 My parents treat me fairly</td>
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<td>20 I learn things quickly in most SCHOOL SUBJECTS</td>
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<td>3</td>
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<td>6</td>
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<td>25 Overall, most things I do turn out well</td>
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<td>I am awkward at things like sports, gym, and dance</td>
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<td><strong>ENGLISH</strong> is one of my best subjects</td>
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<td>29</td>
<td>I often feel confused and mixed up</td>
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<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<td>30</td>
<td>My parents understand me</td>
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<td>31</td>
<td>I do well in tests in most <strong>SCHOOL SUBJECTS</strong></td>
<td></td>
<td>1</td>
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<td>3</td>
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<td>32</td>
<td>I have lots of friends of the opposite sex</td>
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<td>Not many people of my own sex like me</td>
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<td>I always tell the truth</td>
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<td>I am better than most of my friends at things like sports, gym, and dance</td>
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<td>I get good marks in <strong>ENGLISH</strong></td>
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<td>I get upset easily</td>
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<td>I am good at most <strong>SCHOOL SUBJECTS</strong></td>
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<td>I do not get along very well with boys</td>
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<td>If I really try I can do almost anything I want to do</td>
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<td>I sometimes take things that belong to other people</td>
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<td>I learn things quickly in <strong>ENGLISH</strong> classes</td>
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<td>I worry about a lot of things</td>
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<td>I make friends easily with members of my own sex</td>
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<td>Overall I am a failure</td>
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<td>I sometimes tell lies to stay out of trouble</td>
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APPENDIX 7

EDI-2 (Garner, 1991)

The items below ask you about your attitudes, feelings, behaviour. Some of the items relate to food or eating. Other items may ask you about your feelings towards yourself.

For each item, decide whether the item is true about you ALWAYS (1), USUALLY (2), OFTEN (3), SOMETIMES (4), RARELY (5), or NEVER (6). Circle the number that corresponds to your answer. For example if your rating for an item is OFTEN then you should circle 3.

Please respond to all of the items, making sure that you have circled the response that is true about you.

<table>
<thead>
<tr>
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<td>I like the shape of my buttocks</td>
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<td>I am preoccupied with the desire to be thinner</td>
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<td>I have trouble expressing my emotions to others</td>
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<td>The demands of adulthood are too great</td>
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<td>I think about binging (overeating)</td>
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<tr>
<td>45</td>
<td>I think my hips are too big</td>
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<tr>
<td>46</td>
<td>I eat moderately in front of others and stuff myself when they're gone</td>
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<td>I feel bloated after eating a normal meal</td>
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<td>When I am upset, I am sad frightened or angry</td>
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<td>I feel that I must do things perfectly or not do them at all</td>
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<td>I need to keep people at a certain distance (feel uncomfortable if someone tries to get too close)</td>
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<td>I think that my thighs are just the right size</td>
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<td>I feel empty inside (emotionally)</td>
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<td>The best years of your life are when you become an adult</td>
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<td>I have feelings that I cant quite identify</td>
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<td>I eat or drink in secrecy</td>
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<td>I think that my hips are just the right size</td>
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<td>I have extremely high goals</td>
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<td>When I am upset, I am worried that I will start eating</td>
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<td>I say things impulsively that I regret having said</td>
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<td>I am outgoing with most people</td>
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<td>Eating for pleasure is a sign of moral weakness</td>
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<td>Others would say that I get irritated easily</td>
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<td>I feel like I am losing out everywhere</td>
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<td>I would rather spend time by myself than with others</td>
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<td>Suffering makes you a better person</td>
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<td>I feel like I must hurt myself or others</td>
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APPENDIX 8

Silhouette Matching Task for the Clinical Sample

Here are 12 female outline figures that differ in shape. Please choose a figure drawing to answer each of the questions below and circle the figure number on the answer sheet provided. Circle one for each question.

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<td>2. What do you look like today?</td>
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<td>3. How do you feel most of the time?</td>
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<td>4. What do you think you will look like in six months time?</td>
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<td>5. If you were completely free to choose, what is your fantasy ideal?</td>
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<td>6. If you were completely free to choose, what is your realistic ideal?</td>
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<td>8. What would you look like if you followed a healthy diet that is, have 3 healthy meals a day with the appropriate mix of food types (if you already do, you might pick the same image as you did for question 2)?</td>
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<td>What do you think is too thin?</td>
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APPENDIX 9
Silhouette Matching Task for the Non-clinical Sample

Here are 12 female outline figures that differ in shape. Please choose a figure drawing to answer each of the questions below and circle the figure number on the answer sheet provided. Circle one for each question.

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<td>What do you look like today?</td>
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<td>How do you feel most of the time?</td>
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<td>What do you think you will look like in six months time?</td>
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<td>If you were completely free to choose, what is your fantasy idea?</td>
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<td>If you were completely free to choose, what is your realistic idea?</td>
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<td>What would you look like if you exercised regularly that is, exercised vigorously for 30 minutes at least 3 times a week (if you already do, you might pick the same image as you did for question 2)?</td>
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<td>What would you look like if you followed a healthy diet, that is, have 3 healthy meals a day with the appropriate mix of food types (if you already do, you might pick the same image as you did for question 2)?</td>
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<td>What would you look like if you exercised regularly and followed a healthy diet (if you already do, you might pick the same image as you did for question 2)?</td>
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<td>What do you think your mother/female caregiver thinks you look like?</td>
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<td>On average, what do you think your <em>male friends think you</em> look like?</td>
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<td>21</td>
<td>On average, what do you think your <em>male friends want you</em> to look like?</td>
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<td>22</td>
<td>What do <em>you</em> think is too thin?</td>
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<td>23</td>
<td>What do <em>you</em> think is too fat?</td>
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APPENDIX 10

Focus Questions used for the interviews with inpatients (see study 3)

1. Tell me from the beginning about the history of your eating disorder

2. How has anorexia nervosa affected your daily life? How did you feel about this?

3. In what ways has anorexia nervosa affected your relationship with members of your family and the way your family functions?

4. What treatment have you received and how did you feel about it?

5. What strategies have you used to maintain/conceal your illness or to help recovery? How helpful were these, and why?

6. How do you think the experience of anorexia nervosa will affect your future?

7. Is there anything else you would like to tell us so people understand what Living with anorexia nervosa is like?

8. Are there any questions we should ask people in the future?
APPENDIX 11

Code book for the Analysis of Interviews

In the process of analysing the interview data a codebook was created in which the codes from the data were entered. In cases where the code name may have been more complex, a definition and description of data for that particular code was developed. Throughout the coding process, these codes were modified to more accurately reflect the data.

Constructions of Anorexia: Any statement indicating that's what anorexia nervosa is, that's what girls with anorexia nervosa are like or what they do and any description of what their behaviours are. Reasons and explanations as to why is began.

Constructions of other eating disorders: Any statement describing other eating disorders - bulimia, EDNOS

Constructions of recovery: Reports of how symptoms will change/have changed once recovery is occurring. Any statement that illustrates what recovery is and what it means to the interviewee

Contradictory accounts: Statements where there is clearly contradictory viewpoints not necessarily identified by the participant or stated opposite ways of viewing experiences or actions

Extracurricular activity: Any involvement in physical/recreational activities and includes part time work and after school hours jobs

Family-Free: All quotes about family and relationships. Includes family structure, family dynamics, individual relationships within the family, impacts of AN on families, family reactions, family's path in the development of AN, how they behave
towards the person and the AN, how they have helped the person modelling food and weight culture.

**Fears:** Statement referring to the things/ events/ relationships/ objects/ people/ interactions that may scare the interviewee, or the participant may be anxious about.

**Food:** Relating to who prepares food, how food is prepared, what goes into meals and any ritual of rules that girls have about food preparation. Aspects of food not coded elsewhere. Eating patterns, eating practices and restrictions

**Menstruation:** Aspects of puberty, menstruation, and refers to examples of other blood/flow

**Negotiations:** Where deals are struck regarding treatment compliance or rewards systems. Deals struck with teachers, friends, family and doctors.

**Other health problems:** Any reports of other health problems especially accounts of pre anorexia nervosa diagnosis; also alcohol abuse, self mutilation

**Peer relationships:** Any discussion relating to friends including school, hospital, social, boyfriends.

**Religion-spirituality:** Any accounts of personal spiritual beliefs, involvement in church activities, higher power

**School Free:** All accounts relating to school, school friends, and teachers etc, events chronologically related to school calendars, and college and university studies. Also includes events during school holidays, reports of absenteeism, academic performance and eating at school.

**Siblings:** Any mention of siblings, their thoughts or reactions to AN.
**Eating behaviours:** Refers to girls' own behaviours rather than about their family's. Behaviours and attitudes towards food

/Eating behaviours/eating frequency
/Eating behaviours/eating healthier
/Eating behaviours/Food variety
/Eating behaviours/lose weight

A decision to change eating behaviour to lose weight

/Eating behaviours/Food Quantity

/Eating behaviours/Food Quantity/Dietician
/Eating behaviours/Food Quantity/Preoccupation with cals carbs

/Eating behaviours/Food Quantity/Restrictions andRigidity

/Eating behaviours/Family eating culture

/Eating behaviours/Distaste–Not hungry

/Eating behaviours/Secrecy–privacy:

Any statement about not disclosing food/eating habits; not being able to eat in front of others; eating in isolation or privately

**Critical Developmental Incidents:** Significant changes or events that have been pivotal in the development of the eating disorder. A major disjuncture in life or significant life change. Includes abuse (any type of abuse, bullying, emotional abuse or sexual abuse).

/critical dev~ incidents/Changing schools
/critical dev~ incidents/Holidays
/critical dev~ incidents/Change in home environment
/critical dev~ incidents/Abuse
Identification of anorexia nervosa: About being diagnosed and getting labelled as an anorexic, including reactions to diagnosis and acknowledgement or denial of the label. Also includes passages about diagnosis history and misdiagnosis.

/Identification of anorexia nervosa/others

Others identification of anorexia nervosa/eating disorder (excluding family members), labelling or presuming that the girl has an eating disorder.

/Identification of anorexia nervosa/acknowledgement

/Identification of AN/acknowledgement/self

Any statement about realising that they have a problem. Any statement about an event leading to the realisation of the condition

/Identification of anorexia nervosa/acknowledgement/Parents

Any statement about parents accepting the diagnosis of anorexia nervosa

/Identification of anorexia nervosa/acknowledgement/siblings

/Identification of anorexia nervosa/acknowledgement/admitting to others

/Identification of anorexia nervosa/Denial

/Identification of anorexia nervosa/Denial/Self

/Identification of anorexia nervosa/Denial/Family-denial

/Identification of anorexia nervosa/Diagnostic history:

Any statement about pathways to diagnosis of AN. This includes doctors, psychiatrists/psychologists, counsellors, health care professionals. Treatment shopping - searching for acceptable diagnosis; medical referrals.

Anti-anorexia: Thoughts, actions and behaviours relating to pathways to recovery, and motivation to recover. Girls perceptions about what stimulates recovery

/Anti-anorexia/School
Not purely anti anorexia but also any school related reporting.

/Anti-anorexia/Health

Comments concerning recovery from anorexia nervosa for health reasons

/Anti-anorexia/Health/Acceptable State

When the individual identifies that recovering means that they will be in an acceptable and healthy condition

/Anti-anorexia/Separation from Self

/Anti-anorexia/comparison to other girls

When girls identify that they see other girls and realise that they do not want to have anorexia nervosa anymore, or seeing others makes them realise the severity of their disorder.

/Anti-anorexia/Helping others

/Anti-anorexia/Helping others/Not worth it

/Anti-anorexia/Overcoming Fear

Anorexic behaviours: Behaviours that these girls as anorectics demonstrate or display. May include atypical behaviours, but also captures generalised views of how anorectics behave, and how anorexia has affected girls' behaviours.

/Anorexic behaviours/Exercise

/Anorexic behaviours/Weight maintenance

/Anorexic behaviours/Inaccurate Food quantity

/Anorexic behaviours/Preoccupation with food

/Anorexic behaviours/Suspicion

/Anorexic behaviours/Outings and socialising

Any statement about how AN affected being with others; also problems eating in front of others

/Anorexic behaviours/Happy
/Anorexic behaviours/Loyalty
Maintenance of eating disordered behaviours to maintain their eating disorder, expressions of loyalty to the disorder
/Anorexic behaviours/Water consumption
/Anorexic behaviours/Don't feel hungry
/Anorexic behaviours/cold
/Anorexic behaviours/Moodiness

**Treatment:** Chronological accounts of treatment. Includes hospital experiences, treatment programs, reactions to treatment.

/Treatment/hospital environment (positive)
Positive comments regarding the hospital environment

/Treatment/Treatment programs

/Treatment/Treatment programs/Individualised
Any statement referring to the need for/implementation of individualised treatment programs

/Treatment/Treatment resistance

/Treatment/Emotional responses to treatment

/Treatment/Everything regarding Nasal Gastric Tube

/Treatment/Compliance
Any statement about accepting treatment plans

/Treatment/Monitoring Weight
Any statement about monitoring weight gain or loss and about the speed at which they should gain or lose weight

/Treatment/hospital environment negative

/Treatment/Retaliation

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/Treatment/Unfair

/Treatment/Powerlessness

**Surveillance:** Any statement about people watching girls and their eating or compliance with meal plans

/Surveillance/Family

Feelings and statements about surveillance that is performed by family members

/Surveillance/Doctors

/Surveillance/Peers

Statements and comments regarding how friends and peers watch them and observing them

**Control:** Aspects of control. Usually in terms of being 'in' or 'out' of control and others taking control.

/Control/Self

Any statement about control of their own behaviour and weight gain or loss

/Control/Hospital takes

/Control/Anorexia takes

**Anorexic Inquiry:** Sources of information about anorexia nervosa through experience. Knowledge may be gained through surveys, participation in interviews or other inquiry, the media (print, broadcast or electronic), peers.

/Anorexic Inquiry/Surveys and Interviews

/Anorexic Inquiry/Peer cases

/Anorexic Inquiry/Media

/Anorexic Inquiry/Family cases

**Onset causes:** Reports of the identified/stated cause for anorexia nervosa

/Onset causes/flatter stomach
Onset causes/Cool to lose weight
Onset causes/Competition with Others
Onset causes/Body image and self image
Onset causes/Anger reaction
Onset causes/Perfectionist

**Needs Support:** Any identified positive or constructive method or event that was perceived to constitute support for the interviewee; factors that they found were supportive or helpful.

*Needs Support/Group discussion*

Any statement about having a say in their treatment and treatment decisions for others. Also support groups and discussions

*Needs Support/Recognise Maturity*

*Needs Support/techniques and strategies*

Any statement about some method or technique that could assist in recovery or was a useful and supportive strategy

*Needs Support/Recognise improvement*

Any statement regarding the need for Doctors and treatment teams to recognise their improvement, and a need for others to help them recognise their own improvement

*Needs Support/Assist with food quantities and the Frequency of eating*

Statements regarding the struggle to deal with the amount/type of food that they are expected to eat and factors that they feel would help them cope with this better. Further includes comments regarding the frequency in which they are expected to eat

*Needs Support/Study time and School work*

*Needs Support/Recognition of individual*
Any statement about needing to be considered a non stereotype/ atypical case. Also needing to be individual or desiring to be apart/separated from other patients.

/Needs Support/Non anorexia nervosa friends

/Needs Support/from anorexia nervosa girls

/Needs Support/Understanding

Any statement about how people who are understanding can help, or other anorexia nervosa girls being particularly able to understand. Someone who understands and will listen. Also how reflection and discussion have led to self understanding. Lack of understanding is also reported.

/Needs Support/change of environment

Any statement about the need for a change. Also wanting to be in a separate environment from the other patients.

**Self Understanding:** Reflections on past events, ways of viewing the present and statements suggesting a way forward or plans for the future, the path to recovery. Offers interpretations of past events.

/Self Understanding/reflections on past

/Self Understanding/philosophy for future
APPENDIX 12

Experiences and Support Needs Questionnaire for Young People with Eating Disorders

People are always watching me, especially at meal times, and straight after meals. It's just so frustrating. But I know that if they weren't strict about it, I probably wouldn't eat.

To what extent does this apply to you and your experiences?

Very much like I have experienced  ❑  Somewhat like I have experienced  ❑  Not at all like I have experienced  ❑

How is the story above similar or different to your own experiences?

Having the eating disorder has affected my social life and the family's social life. I don't go out for dinner anymore because I can't eat a lot of the stuff on the menu at restaurants, so the family doesn't go out much anymore either. We can't even go to dinner at relatives' houses because my parents know that it will be another meal that I will skip.

To what extent does this apply to you and your experiences?

Very much like I have experienced  ❑  Somewhat like I have experienced  ❑  Not at all like I have experienced  ❑

How is the story above similar or different to your own experiences?

I have lost a lot of friends through this. I just don't feel like socialising and don't feel that anyone including my friends really understands me anymore.

To what extent does this apply to you and your experiences?

Very much like I have experienced  ❑  Somewhat like I have experienced  ❑  Not at all like I have experienced  ❑

How is the story above similar or different to your own experiences?

Apart from your family and/or partner, how many friends do you have?

None  ❑  A few, but we are not close  ❑
A lot, but we are not close | Many close friends, and many friends who aren’t close

If you go out socially, do you go out...

<table>
<thead>
<tr>
<th>Always with your family</th>
<th>By yourself without family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainly by yourself, but sometimes with friends</td>
<td>Often with friends</td>
</tr>
</tbody>
</table>

Other girls with eating disorders can influence you a lot when you are feeling a bit down. And sometimes they are really competitive in that they want to be the lightest and the skinniest. Sometimes it seems that if you have put on weight they think that you are weak and don’t want to talk to you. They try and teach you the tricks and stuff and then you just don’t get better.

To what extent does this apply to you and your experiences?

Very much like I have experienced | Somewhat like I have experienced | Not at all like I have experienced

How is the story above similar or different to your own experiences?

My eating disorder sometimes makes me do things that I wouldn’t usually do, or don’t want to do. When the eating disorder is at its strongest, I don’t have any control over what I’m doing; it’s like having someone else controlling me.

To what extent does this apply to you and your experiences?

Very much like I have experienced | Somewhat like I have experienced | Not at all like I have experienced

How is the story above similar or different to your own experiences?

I do want to change and get better, but I’m scared that I will lose everything that I have worked so hard for, all the dieting all the exercising. I’m scared that all of that effort will go to waste if I start to eat again.

To what extent does this apply to you and your experiences?

Very much like I have experienced | Somewhat like I have experienced | Not at all like I have experienced

How is the story above similar or different to your own experiences?
My current psychiatrist/psychologist has time for me, and s/he puts in the effort. S/He talks to me about stuff other than food and eating like school and friends, and my feelings. S/He understands me; I like that.

To what extent does this apply to you and your experiences?

Very much like I have experienced  ❋ Somewhat like I have experienced  ❋ Not at all like I have experienced

How is the story above similar or different to your own experiences?

Mum was my best friend through this; the eating disorder has made us closer. She was always there for me to talk to and was always checking to see that I was okay with the food, with eating, and with the doctors. But what really helped was that she wasn’t afraid to be strong and stand up to me and my eating disorder.

To what extent does this apply to you and your experiences?

Very much like I have experienced  ❋ Somewhat like I have experienced  ❋ Not at all like I have experienced

How is the story above similar or different to your own experiences?

The doctors don’t recognise that we are all different people, and that different things work for different people. They treat me like everyone else with an eating disorder and I get really upset about that, because I am not the same as them.

To what extent does this apply to you and your experiences?

Very much like I have experienced  ❋ Somewhat like I have experienced  ❋ Not at all like I have experienced

How is the story above similar or different to your own experiences?
It doesn’t matter where you go for treatment, they set these goals for you, target weights, and menu plans…but I need them to be a little bit more flexible, give me a bit of variety with meal plans and schedules, and give me options that I can choose from. I want to have some control over what is happening to me and I need realistic goals.

To what extent does this apply to you and your experiences?

Very much like I have experienced  Somewhat like I have experienced  Not at all like I have experienced

How is the story above similar or different to your own experiences?

My relationship with my parents got worse because of the eating disorder. They didn’t understand what I was going through and didn’t know how hard it was for me. They thought that it would be simple to get better, because all I had to do was eat. They kept saying, “All she needs to do is eat, just give her the food and make her eat it”. Like it was really easy for me. But later they went and got some books and talked to some friends about the disorder, and by finding out more about the disorder, it made it a lot easier for them and me because it helped them understand how difficult it was for me, even the little things, it seemed to make them more understanding and helpful.

To what extent does this apply to you and your experiences?

Very much like I have experienced  Somewhat like I have experienced  Not at all like I have experienced

How is the story above similar or different to your own experiences?

I have all of these books about girls having eating disorders and how they recovered, and I like to read those because it takes away the loneliness, it makes me realise that I’m not the only one that is going through this.

To what extent does this apply to you and your experiences?

Very much like I have experienced  Somewhat like I have experienced  Not at all like I have experienced

How is the story above similar or different to your own experiences?
I don't know how it happened; I just wanted to eat healthier. Sometimes I think that the doctors made a mistake, I don't have an eating disorder, I don't have a problem, but then after talking to the some of the other girls, the doctors and doing some of the questionnaires that they ask us to do, I realise that maybe I do have a problem. All the questions that everyone was asking me, made me look at it all differently, it made me realise that perhaps I do have a problem and that I need help.

To what extent does this apply to you and your experiences?

Very much like I have experienced

Somewhat like I have experienced

Not at all like I have experienced

How is the story above similar or different to your own experiences?

I'm a bit worried about how my friends will treat me and how things will be at home. I know that everyone will be a bit more cautious around me, I just hope that they will accept me and that they will treat me the same. I just need them to be themselves and treat me the same as always.

To what extent does this apply to you and your experiences?

Very much like I have experienced

Somewhat like I have experienced

Not at all like I have experienced

How is the story above similar or different to your own experiences?

My mood varies a lot. Some days it's really good because I'm happy and things aren't affecting me much, that's a happy day. But a happy day at the moment is always followed by a really dark black day, a day that I just don't want to try anymore, that I can't deal with anything or anyone and I'm just angry and emotional. It's on those black days that I just want to be on my own, I just want to cry...

To what extent does this apply to you and your experiences?

Very much like I have experienced

Somewhat like I have experienced

Not at all like I have experienced

How is the story above similar or different to your own experiences?
It’s not really about whether or not it’s your choice to have the illness, when it comes to getting better, it’s about being willing to get better. You can go to as many hospitals, psychiatrists and doctors as you like, but until you are ready to get better, nothing works. I don’t really know what it is, it’s just like you have to make the decision to get better; it’s a mental and emotional thing.

To what extent does this apply to you and your experiences?

- Very much like I have experienced
- Somewhat like I have experienced
- Not at all like I have experienced

How is the story above similar or different to your own experiences?

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My belief in God has made me stronger and has kept me from going back to my old eating disordered habits...being able to turn to religion has really helped me keep on track... I can remember when I was still sick, I became so out of touch with my own mind and my spirituality because my head was just so full of thoughts about weight and food, I just pushed everything else aside. I am so thankful for my relationship with God. It has made me see beyond what I look like.

To what extent does this apply to you and your experiences?

- Very much like I have experienced
- Somewhat like I have experienced
- Not at all like I have experienced

How is the story above similar or different to your own experiences?

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I have found it really hard to concentrate on my schoolwork, and I have noticed that I don’t have enough energy to do all of my schoolwork since I haven’t been eating. It’s really frustrating me because I want to do well at school.

To what extent does this apply to you and your experiences?

- Very much like I have experienced
- Somewhat like I have experienced
- Not at all like I have experienced

How is the story above similar or different to your own experiences?

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Sometimes I lie about eating just to get everyone off my back, I hide the food, and I feed it to the dog and all sorts of stuff. I try to wear really baggy clothes to hide the
fact that I am losing weight, and I often hide the food in amongst the layers of clothes that I am wearing. If they make me eat I will go into my room and just jump around and do heaps of exercise to work it off again.

To what extent does this apply to you and your experiences?

Very much like I have experienced  |  Somewhat like I have experienced  |  Not at all like I have experienced

How is the story above similar or different to your own experiences?

What types of treatments have you found most helpful for you to get better? Why have you found these treatments helpful?
APPENDIX 13

Descriptions and Frequencies for all Vignettes presented in the Experiences and Support Needs Questionnaire
Table A13: All vignettes, anticipated themes, the emergent themes from respondents, and the response frequencies for vignettes

<table>
<thead>
<tr>
<th>Item number</th>
<th>Text</th>
<th>Original theme</th>
<th>theme</th>
<th>Sample</th>
<th>Frequency for very much like</th>
<th>Frequency for somewhat like</th>
<th>Frequency for not at all like</th>
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<tbody>
<tr>
<td>1</td>
<td>People are always watching me, especially at meal times, and straight after meals. It’s just so frustrating. But I know that if they weren’t strict about it, I probably wouldn’t eat</td>
<td>Surveillance</td>
<td>Surveillance Control</td>
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<td>Having the eating disorder has affected my social life and my family’s social life. I don’t go out to dinner anymore because I can’t eat a lot of the stuff on the menu at restaurants, so the family doesn’t go out much either. We can’t go to dinner at relatives’ houses because my parents know that it will be another meal that I will skip</td>
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<td>I have lost a lot of friends through this. I just don’t feel like socialising and don’t feel that anyone including my friends really understands me anymore</td>
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<td>Relationships with peers</td>
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I do not want to change and get better, but I’m scared that I will lose everything that I have worked so hard for, all the dieting and the exercising, I’m scared that all that effort will go to waste if I start to eat again.

Fear of changes and recovery

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<td>7</td>
<td>My current psychiatrist/psychologist has time for me, and s/he puts in the effort. S/He understands me; I like that</td>
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<td>Mum was my best friend through this; the eating disorder has made us closer. She was always there for me to talk to and was always checking to see that I was okay with the food, with eating, and with the doctors. But what really helped was that she wasn’t afraid to be strong and stand up to me and my eating disorder</td>
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<td>9</td>
<td>The doctors don’t recognise that we are all different people, and that different things work for different people. They treat me like everyone else with an eating disorder and I get really upset about that, because I am not the same as them</td>
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<td>It doesn’t matter where you go for treatment, they set these goals for you, target weights and menu plans…but I need them to be a little bit more flexible, give me a bit of variety with meal plans and schedules, and give me options that I can choose from. I want to have some control over what is happening to me and I need realistic goals.</td>
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<td>My relationship with my parents got worse because of the eating disorder. They didn’t understand what I was going through and didn’t know how hard it was for me. They thought that it would be simple to get better, because all I had to do was eat. They kept saying, “All she needs to do is eat, just give her the food and make her eat it”. Like it was really easy for me. But later they went and got some books and talked to some friends about the disorder, and by finding out more about the disorder, it made it a lot easier for them and me because it helped them understand how difficult it was for me, even the little things, it seemed to make them more understanding and helpful.</td>
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| 12 | I have all of these books about girls having eating disorders and how they recovered, and I like to read those because it takes away the loneliness, it makes me realise that I’m not the only one that is going through this. |

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<td>13</td>
<td>I don’t know how it happened; I just wanted to eat healthier. Sometimes I think that the doctors made a mistake, I don’t have an eating disorder, I don’t have a problem, but then after talking to the some of the other girls, the doctors and doing some of the questionnaires that they ask us to do, I realise that maybe I do have a problem. All the questions that everyone was asking me, made me look at it all differently, it made me realise that perhaps I do have a problem and that I need help.</td>
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<td>I’m a bit worried about how my friends will treat me and how things will be at home. I know that everyone will be a bit more cautious around me, I just hope that they will accept me and that they will treat me the same. I just need them to be themselves and treat me the same as always.</td>
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<td>15</td>
<td>My mood varies a lot. Some days it’s really good because I’m</td>
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happy and things aren’t affecting me much, that’s a happy day. But a happy day at the moment is always followed by a really dark black day, a day that I just don’t want to try anymore, that I can’t deal with anything or anyone and I’m just angry and emotional. It’s on those black days that I just want to be on my own, I just want to cry…

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16 Its not really about whether or not it’s your choice to have the illness, when it comes to getting better, its about being willing to get better. You can go to as many hospitals, psychiatrists and doctors as you like, but until you are ready to get better, nothing works. I don’t really know what it is, it’s just like you have to make the decision to get better; it’s a mental and emotional thing.

17 My belief in God has made me stronger and has kept me from going back to my old eating disordered habits…being able to

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turn to religion has really helped me keep on track... I can remember when I was still sick, I became so out of touch with my own mind and my spirituality because my head was just so full of thoughts about weight and food, I just pushed everything else aside. I am so thankful for my relationship with God. It has made me see beyond what I look like.

| 18 | I have found it really hard to concentrate on my schoolwork, and I have noticed that I don’t have enough energy to do all of my schoolwork since I haven’t been eating. It’s really frustrating me because I want to do well at school. |
| 19 | Sometimes I lie about eating just to get everyone off my back, I hide the food, and I feed it to the dog and all sorts of stuff. I try to wear really baggy clothes to hide the fact that I am losing |
weight, and I often hide the food in amongst the layers of clothes that I am wearing. If they make me eat I will go into my room and just jump around and do heaps of exercise to work it off again.

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Total = total sample of respondents, Valid BMI = respondents who indicated their weight and height, BMI<25 = those respondents who had a calculated BMI of less than the lower limit for overweight, I/P = respondents who have received inpatient treatment, BN = respondents who have been diagnosed with Bulimia Nervosa, anorexia nervosa = respondents who had been diagnosed with anorexia nervosa, BMI<20 = respondents who had a calculated BMI of below 20 kg/m² (lower limit for healthy BMI), 20<BMI<25 = respondents with calculated BMI within the healthy range, BMI>25 = respondents with calculated BMI within the overweight range.
APPENDIX 14

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