Nursing research in the 21st century

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ABSTRACT
Aim: To explore the development of nursing research and provide some examples of research relevant to clinical practice.
Background: Nursing research developed in the last century as did nursing theories and models. However, nursing research does not have the same high profile as, for example, medical research and has tended to lag behind medical, and other forms of research, in terms of funding and in the apparent impact it has on clinical practice.
Design: Discussion paper.
Methods: Using a popular nursing model based on activities of daily living, nursing research that is relevant to these activities of daily living is explored and exemplified using a few key examples. Some of these examples are historical and some are current.
Conclusion: Nursing research has developed greatly over the past century and continues to develop in the 21st century. Nursing research is relevant to the needs of patients and has had an impact on clinical practice.
Keywords: ADL, models, nursing, nurses, research, theories

INTRODUCTION
Nursing research has a long history and it would be hard to specify when it began. The person to whom the origins of modern nursing are commonly attributed, Florence Nightingale,\(^1\) conducted research of a kind when she used statistical methods – in which she was trained – to impress her point about the link between social deprivation and disease on British politicians of the 1800s. In the process, she made the first recorded use of the pie chart (http://www.bbc.co.uk/news/magazine-11798317; accessed 1 June 2012). However, Nightingale was from an aristocratic family, she had money and education and was already iconic in Victorian Britain for her work in the Crimean war where she implemented many changes to the care of wounded soldiers, which were applied to her design of hospitals throughout the British Empire. Nightingale was not typical and her work with figures could only loosely be described as nursing research; it was, essentially, about public-health.

Different countries lay claim to the origins of nursing research but from a UK perspective – from which I write – the earliest work includes that of Doreen Norton on pressure sores,\(^2\) Stockwell on the unpopular patient\(^3\) and Hayward on the impact of information on the experience of pain.\(^4\) I am sure, even within those examples, that others in the UK could easily be named but these are landmark pieces of work that are still referred to and which have, largely, been upheld over the decades since they were carried out. A comprehensive summary of exemplary research in nursing and midwifery has been published by Rafferty and Traynor.\(^5\)

In this article, I intend to explore the nature of nursing research rather than its origins. However, the exemplars above do provide insights into the nature of nursing research and two will be referred to below.

BACKGROUND
Many people express surprise at the notion of nursing research on the misunderstanding that nurses do what doctors or senior nurses tell them to do and do not need research to inform their practice. Some who have heard of nursing research assume that nursing is merely trying to aggrandize itself or compete with other subjects and disciplines where research takes place.\(^6\) This is usually expressed in tandem with the view
that nurses have no need of a university education— which is where such research generally takes place—and only need to know how to care for people and that all the required skills are innate... and usually feminine. These views are merely the combination of ignorance and prejudice and while ignorance can be dispelled, prejudice is usually immutable; this article is not aimed at the prejudiced and does not judge the ignorant. Nursing has, traditionally, been quite poor at articulating its knowledge base and in explaining the value of nursing research.

Nursing research—unlike medical research—is rarely reported in the media. This is changing, however, and some publishing houses are having success with a few selected journals in bringing nursing research into the public domain. Nevertheless, nursing research rarely has the immediate impact of medical research; people want to hear about “miracle cures” (albeit that today’s “miracle cure” often transpires to be tomorrow’s health warning or current advice on disease prevention often transpires to be impossible to replicate). Nursing is rarely concerned, directly with curing disease, rather it is concerned with the care needed by people who have disease or distress and who are recovering from the adverse consequences of medical and surgical intervention. As such, nursing has no monopoly on care; it shares this domain with other professions such as medicine, social work, and the various therapies. However, nursing is almost uniquely about caring and its research, concomitantly, is almost uniquely about caring and the remainder of this article will explore selected areas of research related to this fundamental aspect of nursing.

Before proceeding, and for the person who may pick up a current issue of a nursing journal, a great deal of what passes for nursing research—or research conducted by nurses—may seem far removed from the everyday experience of patients and what people, including medical colleagues, consider to be nursing. Nursing research uses many mainstream research methods such as the clinical trial and the social survey. However, nursing research also espouses some of the more “exotic” methods of social research and the humanities including qualitative research and discourse analysis. It is apparent that nursing research has no specific methods of its own; it can, therefore, hardly be described as a discipline—a point which some may dispute. However, nursing adopts and applies these wider methods to try to understand and convey what nursing is about to itself and to others as it continues to explore and explain its professional identity. In this process, nursing research has made contributions to other fields and indeed, has had an influence on medical research and medical research bodies and leading medical journals now fund and publish research using methods other than clinical trials and quantitative surveys.

Research nurses or nurse researchers?

At this point, the identity of those who carry out research in nursing should be explored. Many are familiar in the clinical areas with research nurses. These are highly skilled and increasingly, highly trained nurses who conduct research but usually as part of and under the direction of a medical or surgical research team. Their purpose is data collection and in this role, they are the day-to-day managers of clinical trials, organizing the recruitment of patients, allocation to treatment and control arms and completing and recording the complex documentation that is required by clinical trials regulating bodies. Nevertheless, these are not nursing researchers nor are they normally engaged in nursing research. Nursing researchers are normally academics working in university nursing schools and who are graduates and often trained in research to PhD level. In the early days of nursing research, they commonly had first degrees in other disciplines and also had conducted their PhDs in other areas due to the shortage of university nursing schools and nursing degree programs. Increasingly, however, they have first degrees and higher degrees obtained in university nursing schools.

FUNDING

Obtaining funding for nursing research has always been difficult and models for funding vary across the world. From a UK perspective, it has been particularly difficult as there is no specific stream of research funding identified for research into nursing, and the situation deteriorates. The statutory bodies which govern nursing education and practice, variously called the National Boards or equivalent for the four countries of the UK which existed alongside the UK Central Council for Nursing, Midwifery, and Health Visiting and later merged into the Nursing and Midwifery Council, did provide funding for research into nursing education and aspects of professional practice, but they no longer do this. The UK government department, which runs the UK National Health Service also provided funding for research into nursing but usually into preparation for practice but they no longer provide this. All government funding for research which nurses could apply for is managed through either the various research councils—the Medical Research Council (http://www.mrc.ac.uk/index.htm) being the closest to nursing interests—or via the National Institute for Health Research (http://www.nihr.ac.uk/Pages/default.aspx). Nurses have some success in obtaining funding from these bodies but usually as part, and sometimes in the lead, of multi-disciplinary collaborative teams. Medical research
charities in the UK have funded nurses to do research but none fund nursing research as such and there are few charities – with very limited funding – which fund nursing research.

The UK situation contrasts with that in the USA where there is a dedicated branch of the National Institutes for Health which funds nursing research (http://www.ninnr.nih.gov/). In Australia and Taiwan, nurses fare very well in competition with other areas of research for generic government funding streams. This background is given to contextualize developments in nursing research, especially those in the UK where funding has not been extensive.

**NURSING THEORY**

The place of theory in nursing is disputed territory; nursing is a highly practical subject with little need for theory on a daily basis. In some cases there have been extreme developments in theory, especially in the USA where the concept of nursing as a discipline is more strongly defended. Nevertheless, if nursing is going to be taught and contextualized and researched, then some theory is essential.\[11\] Research questions and hypotheses emanate from theory and research findings can only add to a body of knowledge if that knowledge has some theoretical dimension to it. I will explore, briefly, one nursing theory; this has not explicitly guided the body of nursing research but the particular theory – of Virginia Henderson – and its application by Roper, Logan and Tierney, has had a profound influence on nursing education and practice, which persists, and as it is one way of encapsulating what nursing is and nurses do, it is a convenient way to present some selected examples of nursing research.

**VIRGINIA HENDERSON (1897-1996)**

Virginia Henderson was a North America nursing academic who developed a theory of nursing around 14 activities of living (ALs) which were at the core of nursing care. The relationship between these ALs and nursing was expressed in her maxim that the aim of nursing was “assisting individuals to gain independence in relation to the performance of activities contributing to health or its recovery.”\[12\] Henderson’s theory has found its widest application through the work of UK nursing academics Roper, Logan, and Tierney who based their model on 12 activities of daily living (ADLs) and incorporated Henderson’s idea of assisting the patient by establishing a model in which deficits in patients’ abilities could be assessed and then a plan of nursing care initiated to help the patient recover, gain independence or die a peaceful death.\[13\] The nursing care plan was not static, rather, it was dynamic and this – in common with other nursing models – was operated within the framework of the nursing process. The nursing process was based on industrial quality assurance mechanisms and proceeds in a cycle of: assessment; planning; implementation; and evaluation, leading back to assessment and a further cycle of the process.

Turning to the Roper, Logan and Tierney model, the 12 ADLs are:
- Maintaining a safe environment
- Communication
- Breathing
- Eating and drinking
- Elimination
- Washing and dressing
- Controlling temperature
- Mobilization
- Working and playing
- Expressing sexuality
- Sleeping
- Death and dying

It is interesting to note how distinct these are from the medical domain or “the medical model” as it is often disparagingly referred to by some nursing academics. However, neither Henderson nor Roper, Logan, and Tierney were concerned about setting up an alternative model to medicine or to separate us from our medical colleagues. The intention was to encapsulate what was unique about nursing and to help nurses understand what they did and to help them do it better.

There is no particular hierarchy within these ADLs. Breathing is the only one of the ADLs related to a vital physiological function without which life is threatened. However, the notion of breathing in the model is more related to assisting the patient to breathe comfortably and without distress. This may well have physiological consequences but in nursing care is more related to the physical and psychological comfort of the patient. As such, these ADLs are often located within another layer of theory, that of Maslow’s hierarchy of needs which, essentially, says that the higher order ALs such as cognitive processes leading, ultimately, to self-actualization cannot be achieved without those “lower” order activities which are mainly about comfort and survival being met.\[14\] Put simply, it is hard to appreciate a good novel or film if you are in excruciating pain. Therefore, the ADLs are really essential aspects of care that are in the domain of nursing; some may refer to these as “basic” aspects of care; however, there is nothing “basic” in the ingenuity, patience and knowledge required, for example, to assess pain in a person with dementia and then to help them to eat and maintain their skin integrity, often against their immediate wishes and usually in an ethical and legal “minefield.”
**EXAMPLE**

Some of these ADLs will be used below to explore some aspects of nursing research. Some of the ADLs not covered include washing and dressing; mobilization; working and playing, while not at all irrelevant to nursing, these have moved to the domain of the therapists: occupational therapists; and physiotherapists. There is not such a large body of nursing research directly related to these areas despite the intimate involvement of nurses in each of these, especially washing and dressing, and mobilization, which nurses assist with on a daily basis.

**Maintaining a safe environment**

Nightingale (1860) exhorted nurses, principally, to do the patient no harm.\(^1\) She was well aware of the adverse consequences for some patients of coming into contact with medical services and while she wrote from an entirely different era – before, for example, the understanding of how infectious diseases spread – nevertheless, her words remain relevant. There are many adverse consequences of medical and indeed, nursing care and while these aspects of care may be applied with the best of motives, the consequences can be so serious as to render these aspects of care inappropriate. One prime example, within the realm of nursing care, is restraint.\(^2\) In the first instance, restraint may be considered necessary for the safety of the patient or those around the patient, including staff. Restraint may also be considered necessary to administer treatment in a resistant patient. Quite apart from the ethical and legal considerations around restraint, the physical and psychological consequences are all adverse if constraint is prolonged\(^3\) and this has been investigated and expounded on by Strumpf et al.\(^4\) Restraint may take many forms including direct physical restraint, the use of bed rails – which can have lethal consequences – and chemical restraint. The consequences include: sensory deprivation; confusion; depression; physical damage; bone demineralization and muscle atrophy; incontinence; and immobility. The work of Strumpf and Evans has been largely responsible for alerting nurses to the adverse consequences of restraint and helping nurses to find alternatives. For example, in the case of bed rails, one solution is to lower the bed to its lowest setting and to remove the bedrails; the consequences are a reduction in patient falls and injury.\(^5\)

**Eating and drinking**

With respect to eating and drinking I will refer to my own work in the field of dementia care. It is well known that older people with dementia almost inevitably experience difficulty in feeding themselves towards the later stages of the condition. This has obvious consequences for nutrition with sequelae such as severe weight loss, muscle atrophy and skin breakdown. Furthermore, for family and other carers, the fact that someone is not eating and losing weight is very distressing. Eating, in addition to its nutritional value, also has social and cultural significance.\(^6\)

The area of nutrition and feeding is of professional interest to a wide range of people such as dietitians, speech and language therapists, occupational therapists, and nurses. However, the problem of feeding difficulty in older people with dementia is definitely in the nursing domain as, once families are unable to cope with the person at home and they enter more formal care, then it is nurses who actually have to compensate for the lack of ability to self-feed.\(^7\)

There is no clear evidence on how best to intervene to help older people with dementia to feed themselves. Nurses can offer assistance but this hastens loss of independence; artificial tube feeding is possible but systematic reviews have shown that this is not a viable alternative as it leads to several dangerous outcomes such as aspiration and infection and therefore, may

**Communication**

Good nursing requires good communication between nurses and patients, and this communication must be in both directions. Nurses are humans and have their likes and dislikes for particular patients and inevitably, patients who are pleasant and compliant are likely to be the ones with whom nurses spend most time and with whom they communicate best. Communication, for example in the area of pain, is known to have beneficial effects and this provides the opportunity to raise the work of both Stockwell and Hayward. Stockwell conducted a study and wrote a landmark book *The Unpopular Patient*,\(^8\) which was instrumental in drawing to the attention of nurses that we did view some patients as being unpopular and that this often had direct consequences in terms of ignoring the patient which was likely to have subsequent adverse effects on their care. Hayward was responsible for a study of the use of information about the likelihood of a patient experiencing pain\(^9\) and their subsequent experience of pain; essentially, the more information a patient had about a procedure and any painful consequences reduced their experience of pain and rather than hide these consequences in the hope that the patient will not notice or not comply with the treatment, it is now a standard aspect, for example pre-operatively, to inform patients of post-operative consequences including the likelihood, location and extent of pain. Thus, nurses and medical staff can communicate better with the post-operative patient and find solutions, including analgesic medication, for the pain.
hasten death rather than preserve life.[21] Artificial feeding also requires restraint, an issue that was discussed earlier, and there are many legal and ethical issues to be considered.

Therefore, the study of feeding difficulty in dementia is warranted and when I entered this field as a staff nurse many years ago, there was no evidence base to guide practice and there was no valid method of assessing feeding difficulty and therefore, of measuring deterioration or improvement. Toward that end the Edinburgh Feeding Evaluation in Dementia (EdFED) instrument was developed and remains the only validated instrument in the world for measuring feeding difficulty in dementia.[22] In addition to providing a measure of difficulty, the EdFED also provided an insight into how feeding difficulty develops along a specific and cumulative pattern which is highly reproducible across settings and cultures.[23] The EdFED has been used as a measurement outcome on clinical trials of interventions to alleviate feeding difficulty and as a correlate of other measures such as body mass index.[24] The EdFED correlates well with other measures and is a sensitive instrument for measuring improvement in feeding ability in clinical trials.[25]

Controlling temperature

Nursing research is not confined to “finding things out” but is often concerned with questioning established nursing – and even medical – practice. One example is the work of Purssell[26] where he questions the value of routine administration of antipyretic medication to children with elevated body temperature. The actual incidence of convulsions is very low and while clearly distressing for parents, not usually fatal. Purssell[27] follows this up with an evolutionary analysis of host and infective agent relationship, making the point that the response of the host to infection – which is often what we treat – has evolutionary and by implication, biological advantage. This is a prime example of the application of knowledge from other disciplines by nurses trained in scholarship outside of nursing and who can; therefore, speak with authority in these fields as well as nursing.

Expressing sexuality

This has often been a misunderstood aspect of the nursing process but it does not, necessarily, refer to sex in the physical sense; although this is undoubtedly a legitimate ADL, it is about helping people to recognize their sexual roles in society in the face of impediments to this imposed by illness. For example, it is important for nurses to understand patients’ sexuality and also, for example, marital status and whether or not they have children. Nurses can do a great deal to facilitate patients in their roles related to these aspects of personal life; simple things such as making sure that spouses, partners and children can visit, for example, is important.

Nevertheless, nursing research must go beyond this into more sensitive areas of sexuality if we are to help solve some of society’s problems by helping individuals to understand their bodies and their relationships. In this sense, nursing moves beyond simple clinical care into a wider social role and nurses find themselves working alongside other professionals working in these areas. A much more profound understanding of social subjects is required and nurses must be less afraid to ask really difficult questions and to develop the concomitant research methods. For example, in the UK, there is a significant issue of teenage pregnancy due to the changing moral landscape and a decline in traditional marriage. Many teenagers cope well with this; however, many do not and these teenagers often come from socially deprived backgrounds and educational “black-spots.” Teenage pregnancy interrupts education – especially for young women – and reduces employability, thus creating a vicious cycle of deprivation and social problems. The work of Hayter and Christina[28] provides important insight into why young men and women seek advice, or not, and especially their involvement in sexual relationships, often with attitudes that seem irresponsible to the rest of society. Without such an understanding, appropriate non-judgmental[29] and effective services cannot be designed and delivered to this “hard to reach” sector of the population.

Sleeping

Achieving a good night’s sleep is often difficult in hospital; patients are anxious and in pain and the environment often militates against sleeping. We have known this for a long time but are usually unaware of exactly how noisy hospitals are and what the precise sources of noise are. Studies by Christensen[30] and Akansel and Kaymakçı[31] have applied technological approaches to the problem which, given the implementation of their findings, could help hospitals to locate sources of noise and reduce them.

Death and dying

Death and dying have long been in the domain of the nurse and this is one area where nurses have often taken the lead professionally and in research. The leading light in palliative care, as delivered by the hospice model, was Dame Cecily Saunders and it should be noted that she developed her approach to care of the terminally ill patient as a nurse and later qualified as a doctor (http://www.bmj.com/content/suppl/2005/07/18/331.7509.DC1; accessed 1 June 2012). The involvement of nurses – often leading multidisciplinary teams – in
palliative care is now well established and the concept of palliative care has now extended well beyond the hospice and beyond cancer care. The need for palliative care, for example, in general hospitals is recognized but the deficiencies in the general ward environment for death and dying are being recognized as demonstrated recently by Brereton et al.[32]

CONCLUSION

Nursing research is developing and reaching a degree of maturity. I have tried to exemplify nursing research above using a theoretical framework that describes traditional nursing roles but nursing research and nurses researchers extend beyond this into work that is relevant to disciplines such as psychology, sociology, history, literature, and medicine and contribute significantly to cross disciplinary subjects such as gerontology and gender studies.

From my perspective as the Editor-in-Chief of a leading academic nursing journal I see the current trends in nursing worldwide as being around: the diminishing nursing workforce due to the ageing of the workforce and difficulty recruiting adequate and suitable students; the necessity to develop advanced nursing roles to enable all nurses to work at an advanced clinical level and to compensate for shortages in medical staff; and the increasing development of nursing, especially, in South East Asia and China, to cope with natural disasters. Nurses are, increasingly, researching in these areas and making a contribution to global as well as local and national health.

REFERENCES

7. Watson R. We need the IV leaguers. Times Higher Education 28 July 2011.