

How nursing research has developed

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Abstract

Background: Nursing science is complex and draws inspiration from various traditions. The application of a scientific approach to nursing has entailed a growth in nursing research and research competence in the case of employees in education and the health service. The discussion focuses on whether this has changed nursing in a theoretical direction at the expense of being practice-oriented.

Objective: The objective of the study was to examine whether the development of knowledge in nursing research is patient-centred and practice-oriented, or if it is practice-distant.

Method: The study has a qualitative design based on text analysis. We examine 50 PhD theses submitted to the University of Oslo in the period from 1996 up to and including 2016. The study covers the theoretical and methodological approaches of the theses and their thematic perspectives.

Results: The study reveals a trend towards a medical and organisational theory approach, and a move away from the humanities. The bulk of the PhD theses' research area is related to the patient or the field of practice. Up until 2004, the monograph was more or less the dominant form of thesis – since then it has represented a significant minority because article-based theses have been predominant. The qualitative method prevailed up to 2010. Subsequently, theses more frequently employed mixed methods.

Conclusion: PhD theses in nursing science from the University of Oslo appear to represent diversity in respect of theoretical approach and method. Nursing research has moved away from monographs, humanist approaches and qualitative methods. The trend is now towards organisational theory, medical perspectives, article-based theses and mixed methods. Our study shows that researchers in nursing are particularly interested in patient perceptions and the field of practice, which indicates that nursing research is practice-oriented.

Nursing is historically regarded as a practical occupation: action-oriented and patient-oriented. Following the universities' inclusion of nursing science in the 1980s, there have been discussions on the advantages and disadvantages of theorising nursing. The implementation of a scientific approach has led to an increase in nursing research and requirements for research competence in employees in education and the health service.

The arguments for the implementation of a scientific approach are, inter alia, that nurses must base their actions on research in order to counteract the random treatment of patients (1). Objections have been raised to the academic ambitions that many claim divert nurses from practice (2). It is asserted that nursing expertise that is intended to be useful and practical is gradually losing its practice orientation (5).

The nursing knowledge base has been the subject of criticism and debate. The key question has been what knowledge a nurse needs to perform good nursing (3). The answer is not clear. The academisation of practical professional subjects is constantly a topic of debate – more specifically, whether these subjects require more scientific knowledge (4–6). Is such criticism justified or does it conform to the views of those who perceive nursing as a profession in which practice is the most important aspect (7)?

Previous research

Empirical studies have been conducted in Sweden and Denmark on how nursing science has developed (8, 9). Heyman's (8) doctoral thesis from 1995 is a comprehensive, scientific investigation of the growth of nursing research in Sweden between 1974 and 1991. Heyman found different types of theses where two scientific traditions in particular were clear: medicine and social sciences.

The majority of the theses were written from the point of view of medical logic, and were based on articles and had an experimental-like design with intervention groups and control groups. Other theses had a social science approach with a more limited dataset where a qualitative analysis was performed. The topics were related to social phenomena or the interpretation of concepts. Most theses were monographs.

Petersen's (9) study of doctoral theses written by nurses in Denmark has a theoretical and empirical approach that is similar to that of Heyman. The results of both studies show heterogeneity in the theoretical assumptions, the methodological reasoning and the structure of the theses analysed. Various types of scientific logic were operative.

In addition to medical and social science approaches, Petersen's study highlights philosophical theses based on humanist scientific ideals. Empirical studies of the nurses' theses thus show heterogeneity in their philosophy of science approach. Positivist, interpretative and critical approaches were represented.

Lundgren et al.'s study (10), in which the authors examined Nordic doctoral theses in nursing and caring sciences in 2003, shows that knowledge about the patients dominates. Eighteen out of 26 theses targeted knowledge about the patient, two targeted interaction between nurses and patients and two focused on the patient's environment.

The patient was the primary focus in the research

Heyman (8), Petersen (9) and Lundgren et al. (10) refer to nursing science as complex. For the most part, differing views of science, methodology and theoretical framework come to light. Research on the patient was the dominant topic. Although the studies indicate that nursing is a subject in which there is a clear medical logic, it can also be seen as interdisciplinary with elements of psychology, pedagogics and sociology, for example.



«Nursing research in the Nordic region appears to have a clinical, patient-oriented perspective.»

Most of the theses had an individualistic approach, which indicates that nursing research is devoted to the individual rather than to society in general. We can therefore conclude that nursing research in the Nordic region appears to have a clinical, patient-oriented perspective.

Master's degrees on the clinical context of nursing

Various scholars have analysed nursing research at a lower level of education, including Hellesø and Fagermoen (11). They analysed master's degree theses in nursing science from the University of Oslo submitted in the years from 1987 until 2015. In the analyses, they were inspired by Kim's (13) conceptual domains. The main topics of the master's degree theses centred on clinical practice studies and patient studies, i.e. the clinical context of nursing.

There was less thematic focus on nursing education, and administration and leadership. The practice studies mainly included studies of nurses' deliberations on their own practice. The patient studies were related to patients' perceptions of the challenges that being ill or receiving care entailed.

In order to understand the implementation of a scientific approach to nursing, PhD theses in our neighbouring countries have been studied. We lack this type of empirical study in Norway.

The objective of the study

The objective of the study was to examine whether the development of knowledge in nursing research has been patient-centred and practice-oriented, or if it has been practice-distant and solely focused on scientific interests. Our study examines Norwegian PhD theses in nursing science submitted to the University of Oslo (UiO) in the period from 1996 up to and including 2016. We examined theoretical and methodological approaches in addition to thematic perspectives.

We also wished to elucidate how nursing science has developed in the Norwegian context in order to establish whether the trend is the same as in Sweden and Denmark or whether nursing research in Norway differs.

Our research questions in this study are as follows:

- What theoretical approaches do nursing researchers apply?
- What thematic areas does the research cover, and what scientific methods do nursing researchers employ?
- Does nursing research elucidate practice-relevant issues?

Method

The research questions can be studied in different ways. In our study, we chose to study them by means of PhD theses in nursing science submitted to UiO. We analysed a total of 50 PhD theses. The study has a qualitative design based on text analysis. The coding of the texts is inspired by Braun and Clarke's (12) thematic analysis.

We have analysed the theses using deductive analysis. First, we read the summary and then parts of the thesis. At the second stage, we applied Heyman's (8, p. 62) classification of theoretical perspectives: the humanities, organisational theory, social sciences, psychology, pedagogics and medicine. In our study, we analysed PhD theses in nursing science. Nevertheless, we construct nursing science as a separate category because some theses apply nursing theory.

Kim's four domains

Kim (13) describes four domains into which nursing science can be divided: the client (patient) domain, the client–nurse domain (interaction domain), the practice domain and the environment domain. The client–nurse domain refers to the interaction related to contact and communication between the patient and the nurse.

The practice domain is related to what nurses do in procedures, actions and treatment. The environment domain refers to the patient's surroundings, and structures the context in which nursing takes place. At the fourth stage, we went over the dataset a number of times and together discussed how to classify the theses according to different theoretical approaches and thematic areas.

The domains are not mutually exclusive categories and the theses may encompass several categories. For example, communication can be understood as interaction between the patient and the nurse, but can also be classified as treatment and so belongs to the practice domain. When the thesis examined relationships, we placed it in the interaction domain. When communication is an intervention, we placed the thesis in the practice domain.

Classification of the theses

Some theses could be classified according to several theoretical perspectives; for the most part this applied to theses with a humanist perspective that at the same time utilised, for example, Kim's theoretical approach. We placed these in the nursing science category.

Theses dealing with quality of life could have been classified as nursing science because it is a key concept in nursing. However, when the theses dealt with quality of life instruments and measurements, we chose to place them in the medical approach category.

Data sources were derived from open internet access and library loans. We classified the various theoretical approaches in line with Larsen and Adamsen's (14) breakdown of nursing research. The theoretical perspective is explicit in most of the theses, although several perspectives are employed in some.

The last type of thesis has a clinical approach without any clear theoretical perspective. However, such theses have a methodological approach closely linked to medical research ideals. We classified these theses according to the medical perspective.

The form of the theses and co-authorship

In addition, we examined co-authorship and the form of the theses. Moreover, we classified the use of methods into three categories: qualitative, quantitative and mixed methods. We included two theses employing mixed methods where the literature review is categorised as a qualitative method. The reason for this is that the reviews are not meta-analyses but explanations of concepts used in the measuring instruments.

The study has been approved by the Norwegian Centre for Research Data (NSD) (project number 43577).

Results

In order to answer the research questions, we have divided the findings into the theoretical approach, research area and method of the thesis.

Theoretical approach

The study shows a tendency towards a medical and organisational theory approach and a move away from the humanities (Table 1). In the period 1996–2005, the humanities accounted for six out of 16 submitted PhD theses, while in the period from 2006 to 2016, only three out of 34 theses were humanist based.

Table 1. Theoretical approach in PhD theses

Year (number of theses)	Humanities	Organisation	Social Sciences	Psychology	Pedagogics	Medicine	Nursing Science
1996–2000 (3)	1	–	–	1	1	–	–
2001–2005 (13)	5	2	3	1	–	–	2
2006–2010 (10)	1	–	1	–	1	2	5
2011–2016 (24)	2	6	2	1	3	5	5

Ødbehr's (15) thesis, which applies theories related to spirituality and religiousness, is an example of a humanist approach in the second period. If we consider the medical approach, none of the theses in the first period adopted such an approach, while five out of 24 theses had this approach in the second period.

Fagernes' (16) thesis on infection risk in connection with the use of finger rings is an example of a medical approach.

Since 2011, there has been an increase in the use of organisational theory approaches. This approach includes interprofessional collaboration (17), and documentation in organisations (18).

 **«Since 2011, there has been an increase in the use of organisational theory approaches.»**

Although the application of the social science approach has been on a small scale, it has remained stable. If we extend this approach to include organisation, psychology and pedagogics, we see the same stability. Knutsen (19), who has studied the use of power vis-à-vis morbidly obese patients in light of Foucault's theory, provides an example of this.

In the nursing science category, we have placed only theses that utilise nursing theory, for example Haanes' (20) thesis that applies Dorothea Orem's self-care theory, and Kvignes' (21) thesis that applies the theories of Kari Martinsen and Patricia Benner. In the period from 2006–2010, most theses have a nursing theory approach when examined in relation to the number of theses written in the same period (five out of 10).

The theses' research areas

The majority of PhD theses focus on topics in the practice domain (Table 2), accounting for a total of 23 theses. The practice domain includes studies of nurses' performance and interprofessional cooperation as well as documentation and ethical issues linked to the practice of nursing.

One example is Wøien's (23) study on pain relief and sedation practices at 54 intensive care units in Norway. Doctors and nurses characterised the practice as disorganised. There was no routine assessment of pain, discomfort or confusion.

Fifteen of the theses fall within the client domain. The patient group studied is particularly centred on the elderly, mother and child in the post-natal period, patients suffering from a stroke and those with long-term illness.

One example is Martinsen's (22) study of patients of working age suffering from a stroke and their psychosocial challenges. The patients struggled to gain access to relevant health and care services. Follow-up was described as random and little suited to the needs of this younger group of stroke patients.

Table 2. The development of PhD theses from 1996 up to and including 2016

Year	Number of PhDs	Form of thesis		Co-author's profession			Method			Kim's domains			
		Mono-graph	Article-based	Nurse	Doctor	Other	Qualitative	Quantitative	Mixed methods	Client domain	Practice domain	Interaction domain	Environment domain
1996–2000	3	2	1	1	0	0	3	0	0	0	3	0	0
2001–2005	13	8	5	5	2	0	8	1	4	5	4	0	4
2006–2010	10	3	7	7	1	0	7	2	1	4	3	1	2
2011–2016	24	2	22	22	11	9	9	4	11	6	13	2	3
Total	50	15	35	35	14	9	27	7	16	15	23	3	9

The table summarises the thesis' form, method, co-authorship and classification in accordance with Kim's theoretical typology of nursing research at the University of Oslo.

Nine theses fall within the environment domain, which includes the competence of health personnel, risk of infection, quality and quality development in the health service. One example is Hauge's (25) study of the nursing home as a home, in which she investigates how common rooms for residents are used and organised. The study revealed unclear boundaries between the private and public spheres of the nursing home.

Only three of the theses are classified within the interaction domain, which includes email communication between patients and health personnel as well as cooperation related to service user participation and influence.

Fegran (24) sheds light on the domain by examining responsibilities and relationships between parents and nurses in a post-natal ward. She also studied how cooperation between parents and nurses developed during the period of the child's hospitalisation. The study indicated that the nurses' relationships with the father play a significant role for mother, father and child.

The development of thematic areas in the theses indicates a trend towards increased focus on the practice domain, for example topics linked to the actions of the nurse.

Form, method and co-authorship

Up until 2004, the monograph was the dominant form of thesis, but since then it has been in the minority since article-based theses with a comparative discussion (Nor. Kappe) have been predominant. In the last five years, only two theses have been written as monographs (Table 2).

We see a corresponding trend in methodology where the qualitative method prevailed as a research method up to 2010. After that time, a number of theses employed mixed methods. Few doctoral theses were based purely on quantitative methods.

There has been a growth in the contributions of other professions, particularly doctors, both as co-supervisors and co-authors, in the course of the twenty years that UiO has educated doctoral degree candidates in nursing science. During the first five-year period, only three theses were submitted, one of which was article-based. In this thesis, no doctors were included as co-authors.

In comparison, doctors and people from other professions were co-authors in approximately half of the theses submitted in the second period from 2011 to 2016. When we consider the type of studies that doctors have either co-authored or supervised, we find that these are largely based on mixed methods or quantitative methods.

The research often takes place in hospitals, and issues in focus include medical diagnosis, follow-up treatment or interprofessional collaboration involving doctors. One example is Lie's (29) thesis about patients following a heart operation, their symptoms and how these are managed. This was an intervention study. The thesis comprised, inter alia, four articles, and both the main supervisor, who is a nursing scientist, and the co-supervisor, who is a doctor, were co-authors.

In comparison, staff of UiO's Department of Nursing Science have co-authored all article-based theses by virtue of their position as main supervisor. All seven theses included in our study that apply the quantitative method are article-based. Doctors co-authored several of them.

Discussion

In the period from 1996 to 2016, we see a development in PhD theses in nursing science at the University of Oslo. They have moved from a theoretical humanist approach to an organisational theory and medical approach. Likewise, we see a shift from the monograph form to article-based theses. From having a main emphasis on the qualitative method, the methodology changes to increasing use of mixed methods.



«The topics of the theses mainly concern nursing practice and patients' perceptions and experiences.»

We also see a growing tendency for people from other professions, doctors in particular, to be co-authors. The topics of the theses mainly concern nursing practice and patients' perceptions and experiences. Nursing researchers mostly perform clinical empirical research in collaboration with other professions.

Nursing research is clinically based rather than theoretically based

Our study shows that nursing researchers are interested in the large patient groups, such as elderly people and those with long-term illness. They are focused on the field of practice, such as the home care services, nursing homes and hospitals. If we consider the patient groups and the service areas studied, there appears to be little documentation that nursing research is practice-distant.

Our study indicates that nursing research is practice-oriented. The question that arises is whether it is remote from theory. Larsen and Adamsen (14) demonstrated in their study that Nordic nursing research can be understood in light of three positions: a clinical and applied oriented position, a profession and knowledge oriented position, and a theoretical and concept oriented position.

The PhD theses in our study refer to the theoretical and concept oriented position to a limited degree. Nevertheless, there appears to be a correlation between studies undertaken in Denmark (9), Sweden (8, 10) and Norway regardless of the period of time. The theses we studied seemingly show that nursing research has developed in the direction of clinical research and medical research ideals.

Malterud (30, p. 185) claims that in the professional culture of medicine, theory is perceived as an accumulated mass of knowledge. We interpret this as meaning that nursing research is influenced by the medical understanding of theory. There is also a tendency towards a growth in organisational theory approaches. This can be interpreted as a clinical trend, since medical and organisational perspectives appear to be highly prevalent in the field of practice.

The question arises as to whether knowledge development aims at understanding and explaining practice and the patients rather than developing new theories and concepts unique to nursing science. Our study shows the same variation in theoretical approaches and methods as the studies of Heyman (8) and Pettersen (9).

Since nurses conduct research in a team together with medical professionals, we can assume that the earlier mentioned distance to medicine is in the process of change. We can therefore also ask whether nursing science as such is no longer in 'opposition' to medicine. In contrast to previous years when nursing research tended towards humanism, and philosophy in particular, we now observe clearer elements of medical research ideals and organisational theory.

It is interesting to note that the opposition to medicine, which we have seen throughout the history of nursing, appears to be declining. Kari Martinsen (2) radically confronted reductionism and society's treatment of patients in terms of the neglect of the weakest patients. Our study indicates that nursing researchers rarely engage in this critical debate. The individual perspective still predominates, while the social perspective is seldom invoked.

Medical research ideals?

Our study shows that both the form and method of PhD theses have changed from the use of qualitative methods and monographs to mixed methods and article-based theses. This change appears to apply to many subjects. Moreover, the theses are often written together with people from other professions. In the period up to 2004, the PhD programme in nursing was linked to UiO's Faculty of Social Sciences.

The institute was incorporated into the Faculty of Medicine from 2004. This change may explain the increasing medical influence on the form and method of the thesis. In terms of external medical factors of importance to nursing research, we can mention the Research Council of Norway's evaluation of medical and health-related research. The evaluation concludes by stating that 'the Norwegian society [...] has a great need for evidence-based practices in the nursing area' (31, p. 15).

The question that arises is whether these factors are of significance for nursing as a discipline, education and profession. Does the nursing discipline emerge more clearly, or does it become part of a wider health profession in which medical knowledge and research ideals take precedence? Traditionally, the nursing discipline has two roots – one humanist and one medical (32).



«Little emphasis seems to be placed on the relational aspects.»

If the trend in nursing is a departure from the humanist perspective, a considerable body of the knowledge base may become unclear. Little emphasis seems to be placed on the relational aspects. Only in three theses has the interaction between patients and nurses been the main thematic area.

The monograph has been the preferred form of thesis in the humanities. Some of the arguments in favour of this form have been that the candidate must show independence, depth and thoroughness in the analyses performed. The candidate is the sole author of the monograph. On the other hand, the article-based thesis has a short format that is better suited to the rapid dissemination of knowledge. The candidate is often one of multiple authors.

Limitations of the study

This study has only examined theses submitted to an institute at the University of Oslo, and therefore does not incorporate the total number of theses submitted by nurses. There are few theses in the first period, and the database for understanding the development as far back as 1996 is limited. Kim's (13) theoretical categories are employed, and the use of standardised categories may have reduced the differences and variations in the dataset.

Conclusion

Nursing research at UiO's Department of Nursing Science appears to represent heterogeneity in theoretical approach and method. In the second period examined, we see a trend towards organisational theory and medical perspectives.

As regards thematic areas, nursing researchers are more interested in patients' perceptions and the organisation of the execution of nursing but less interested in the interaction between patients and nurses. In this respect, criticism of the distance of nursing research from practice is not well justified. The patient groups that received most attention were the elderly and those who had long-term illnesses, which aligns with the needs of society.

Seen in a twenty-year perspective, it is interesting to note that the theses in nursing science submitted to the University of Oslo have shifted from monographs, humanist approaches and the use of purely humanist approaches and qualitative methods. For the most part, the form of the theses has changed to article-based theses with multi-disciplinary authorship.

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