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Research article

Nursing curricula in Indonesia and Scandinavia: What can we learn from each other to strengthen nursing education

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ABSTRACT

Background: Highly qualified nurses are fostered by high quality educational institutions. Nurses are trained all over the world. Both the duration and the content vary globally. Nursing may differ across national borders and continents, but will also have some common characteristics. The nursing profession is grounded in nursing education. It is important for nursing education to meet future challenges due to global changes, to create more sustainable nursing programs. The aim of this study was to shed light on differences and similarities in learning outcomes in selected Nordic and Indonesian nursing educations.

Methods: The study design was qualitative using a qualitative inductive content analysis as described by Elo and Kyngäs. The data used were the leaning outcomes from curricula for nursing education from two institutions in higher education in Norway, one in Sweden, one in Denmark, and three institutions in Aceh, Indonesia.

Results: The results showed that "Professional approach and practice" was the main category of the nursing curricula and included three generic categories; Theory, Skills and Nursing Practice. There were both similarities and differences. Some differences between the Scandinavian institutions and the institutions from Aceh Indonesia were the focus on ethical and moral aspects. In Aceh Indonesia, learning outcomes for entrepreneurship are included, whereas some of the Scandinavian institutions use the term innovation.

Conclusion: International collaboration in nursing can yield shared knowledge. A transcultural perspective can lead to the enhancement of quality of nursing education as different countries learn from each other.

1. Introduction

After the Asian tsunami disaster struck the Province of Aceh in 2004, the Norwegian Red Cross and the Indonesian Red Cross started a project to re-establish a local nursing school. A cross-cultural training programme took place to strengthen the nurses' pedagogical and professional nursing competence. This became the embrio for a consortium of Scandinavian and Indonesian partners working together in a greater collaborative project 'Capacity Building in Nursing Education in Indonesia' (CABNEI). The aim of the CABNEI project was to raise the competence of nurse educators and their ability to facilitate learning that will strengthen the quality of nursing programs and improve nurses´ ability to address various health issues for the population. In the CABNEI project four Scandinavian and four Indonesian Higher Education Institutions (HEIs) from the Province of Aceh cooperated with an aim to ensure quality education in accordance with the United Nations Sustainable Development Goal 4: "to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all."

2. Background

Disease and suffering are universal phenomena that all people must

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expect to experience throughout life. How this is experienced and how illness is met will be culturally conditional. The quality of nursing a sick person receives will, among other things, be conditional on what the nurse has learned through his/her education, as well as the culture and context in which nursing takes place. Nursing may for this reason differ across national borders and continents, but will also have some common characteristics, as "being sick" is a universal phenomenon that to varying degrees involves: the experience of being helpless, suffering, having discomfort, pain, nausea and fatigue (Amzat et al., 2014).

The World Health Organization (WHO) and the International Council of Nursing (ICN) have described nursing as an autonoumous and collaborative care for healthy, sick, or dying individuals of all ages as well as families, groups and communities. Nurses' special consern is responding to health problems, preventing illness, promoting health and performing care (Hov et al., 2018).

Nurses are frontline workers in global health services. However, there is a shortage of well-qualified nurses all over the world (The World Health Organization, 2022). In Indonesia, the education of nurses was separated from services in hospitals into separate educational institutions in 1976 (Asmadi, 2008; Hidayat, 2007). In the Scandinavian countries nursing education moved from a system of apprenticeship to a higher education system. This occurred in Denmark in 1990, Norway in 1983, and in Sweden in 1977 (Råholm et al., 2010). Nursing education in Indonesia ranges from senior high school level to Diploma III with three years of study or bachelor's level with three and a half year of study, and 39 % of nurses are educated at both governmental and private nursing schools. Nursing education in the European Union countries has through the Bologna process, beginning in 2010, become harmonized which means that nursing programs in all the member countries are organized to a minimum of three year education on the bachelor level (Collins and Hewer, 2014). Nursing education in Scandinavia takes place in bachelor's programs at public and private universities and university colleges (Hov et al., 2018).

In Indonesia, nursing as a profession is still building its profile, with a persistent public perception of the nurse as the doctor's assistant. Research shows that the biomedical model focusing on pathology and etiology of disease processes and medical science is still dominant in nursing education (McKenna et al., 2022; Sommers et al., 2018). The researchers argued that professional nursing education is a challenge in Indonesia, and that the nursing curricula needs improvement in terms of analytical and critical thinking skills, leadership and leadership skills to prepare nursing students to become independent professionals and highly qualified nurses. Nursing students must also develop the clinical skills and expertise expected of professional nurses (McKenna et al., 2022). The Province of Aceh was granted a special autonomy in 2005 after the tsunami in 2004 through negotiations between Free Aceh Movement (GAM) and the Indonesian government. The province is self-governing and religiously conservative. It is the only province in Indonesia which officially practices Sharia law. In Aceh, Islamic based health services are provided. Setiowati et al. (2023) focus on the integration of Islam into nursing curriculum to incorporate Islamic values and Sharia as morals into nursing education. Islam is seen to be created as a grace of the universe and nature, and guides the provision of bio-, psycho-, social-, and cultural as well as spiritual care for patients. Nurses need to have Islamic spiritual competence and be able to provide spiritual care based on the Islamic religion (Setiowati et al., 2023). In medical ethics, the nurse or the physician should be a person of virtue and morally good will. Islamic morality is seen as the practice of virtue, morality and manners according to Islam, including sincerity, honesty and truthfulness in acts of worship such as charity, prayers and reciting of the Quran. Moral values require obeying God's commandments (Dahamsheh, 2024).

According to the The European Higher Education Area (1999) in the Bologna Declaration, nursing students are required to develop different kinds of competencies. These include theoretical-analytical competence, practical competence, learning competence, social competence and professional ethical competence (The European Higher Education Area, 1999). In nursing education in Denmark, Norway and Sweden there are both similarities and differences regarding educational structures, content, and length of the programs. In the bachelor programs in nursing all the countries follow the first cycle with at least three years of studies as mentioned above, Denmark with 210 ETCS in 3.5 years, Norway and Sweden 180 ECTS credits with three years of fulltime studies. In Denmark and Norway clinical studies consist of 90 ECTS credits, while in Sweden 45 ECTS credits (Råholm et al., 2010). ECTS stands for the European Credit Transfer System and is a tool of the European Higher Education Area which helps students to move between countries while recognizing their study periods and academic qualifications (European Education Area, 2024).

Highly qualified nurses are fostered by high quality educational institutions. Nurses are trained all over the world, but both the duration of their education and their content vary globally. Research shows that there are differences between nursing education in Indonesia and Scandinavia regarding terms of level and funding. There are also some differences in professional roles after graduation. Nursing may differ across national borders and continents, but will also have some common characteristics. The nursing profession is grounded in nursing education. To move nursing education to a higher level, nurse educators need to, in line with WHO's Nurse Educators core competencies (The World Health Organization, 2016) work from cognitive, affective and psychomotor learning domains. According to WHO nurses and their roles within interprofessional health teams are critical for achieving the Sustainable Development Goals including good health and well-being along with quality education (The World Health Organization, 2020). Enhancing nursing education and professional roles are beneficial for improving health in populations. Investing in education and leadership would increase preparedness of future health challenges such as related to pandemics and conflicts. Comparing the curricula could be valuable for identifying areas for improvement in nursing curricula and lead to strengthening sustainability goals related to providing quality education, which in turn could improve health and address health challenges. This study was based on seven curricula for nursing programs from seven educational institutions in four countries, that is Indonesia, Sweden, Denmark, and Norway. It is important for nursing education to meet future challenges due to global changes, to create more sustainable nursing educations. The aim of this study was to shed light on differences and similarities in learning outcomes in selected Indonesian and Scandinavian nursing educations.

3. Methods

3.1. Design

The study had a qualitative inductive design. An inductive approach involves beginning in the empirical data, without bias, to study the specific phenomenon and then describe it as correctly as possible and thereafter come to conclusions. This is the recommended approach when not much is known about the phenomenon.

3.2. Data collection

The data used were the curricula for nursing studies from two higher education institutions in Norway, one in Sweden, one in Denmark, all of which were bachelor programs, and three institutions in the Province of Aceh in Indonesia, of which two were diploma III programs in nursing and one was a bachelor program in nursing. The diploma III programs were both 110 Indonesian credits and six semesters of study, and the bachelor program was 146 Indonesian credits over seven semesters. One Indonesian credit requires 16 h of work. In total, data from seven curricula was collected. Each researcher was responsible for the translation of the curricula into English from their respective higher learning institution. The curricula from the Scandinavian countries already had

official English versions.

3.3. Data analysis

Data were analyzed using an inductive approach according to Elo and Kyngäs (2008) three phases; preparation, organization and reporting. All of the authors participated and read through the curriculum to become familiar with the data. The preparation stage began with deciding the unit of analysis, which in this study were the learning outcomes of the study programs which were also used as the unit meaning. It was decided to look for the manifest content. In next step of the inductive analysis. Authors BU and JS did the initial coding and then the entire research group went through and modified the codes, and then went on to discuss possible generic categories. A coding sheet was used to organize this step of the process. Further, the coding sheet was used for grouping the codes and then to reduce the number of generic categories into higher order headings and subcategories. These processes were iterative with the research group going back and forth between the coding and the groupings, discussing the content, to finally arrive at the generic categories. Abstraction involved formulating general descriptions which lead to the creation of the main category. The use of generic categories, subcategories and a main category is accordance to Elo and Kyngäs (2008) method of content analysis.

4. Results

The main category was Professional approach and practice in nursing education. The results show the structure of nursing education and how the different categories relate to each other. It shows a process in learning where theory and skills are needed to be able to provide high quality nursing practice. It also reflects on the complexity in nursing and the nursing profession. The results consist of three generic categories, Theory, Skills and Nursing Practice and a total of 10 subcategories (Fig. 1).

4.1. Theory

This was the generic category with the greatest content included in all the curriculum. It includes three subcategories; Nursing theory, Ethics and values, and Knowledge from other disciplines (Table 1).

4.2. Nursing theory

The curricula from Norway and Sweden started with a general view on theory in nursing science. Students should 'demonstrate knowledge and understanding in the main field of study, including knowledge of the disciplinary foundation of the field, understanding of applicable methodologies in the field, specialized study in some aspect of the field as well as awareness of current research issues' (Sweden). Another learning outcome was 'Has broad knowledge of the nurse's health-promoting, preventive, treating, rehabilitative and palliative function' (Norway), further "Is able to apply and present central theories, issues and solutions, in writing as well as orally" (Norway). From Denmark learning outcomes included; 'possesses knowledge of, and is able to reflect on knowledge about, individual, social, cultural, religious, international' and 'ethical factors' influence on people's experiences and reactions in connection with health challenges as well as the links between diseases' (Denmark). Nursing theory was also found in learning outcomes from Indonesia; 'mastering the concepts of nursing as the basis for providing holistic and comprehensive nursing care'. Two of the HEI in Indonesia included transcultural nursing. The curriculum also state that students should have a knowledge of history of the discipline, a broad knowledge of central topics and issues, along with theories and of nursing science.

4.3. Ethics and values

The curricula from Norway and Denmark were almost identical stating that students should possess knowledge of, and be able to reflect on key values and nurses' ethical guidelines. Also from Norway was "Is capable of contributing to highlighting nursing and ethical norms in

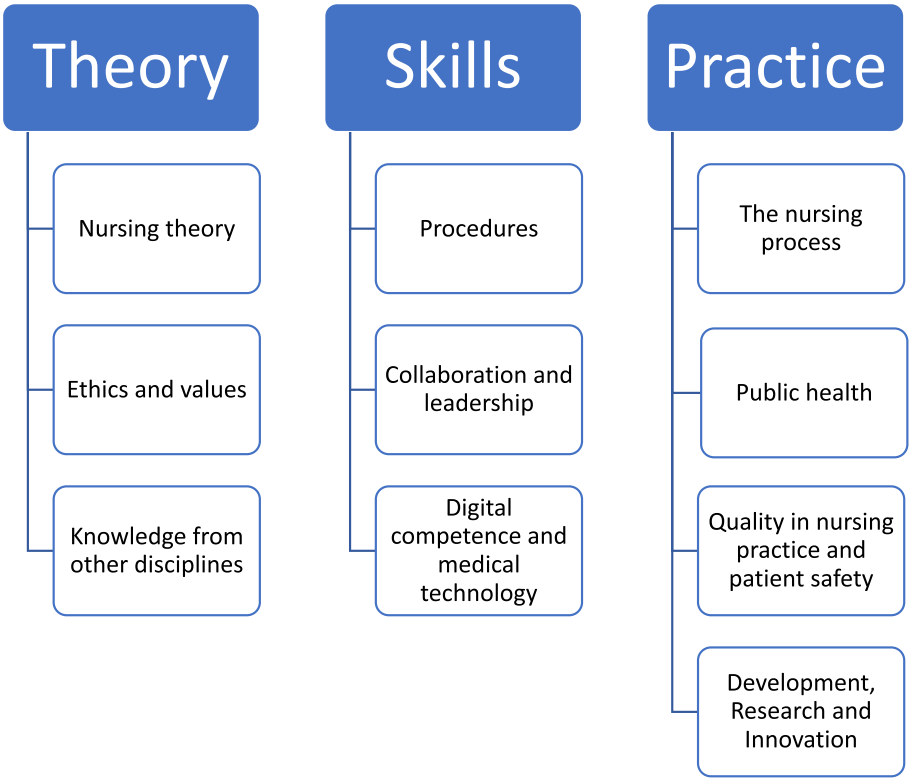

Fig. 1. Overview of the results.

Table 1
The similarities and differences in the subcategory Theory.

	Similarities	Differences Scandinavia	Differences Indonesia
Nursing theory	Knowledge and understanding of the field of nursing Mastering and applying the concepts of nursing		
Ethics and values	Morals and ethics present in all	An emphasis on self-awareness, capacity for empathy and on ethical and moral responsibilities when meeting with patients and next of kin	An emphasis on devotion to God, duties based on religions, morals and ethics, attitudes of nationalism, responsibility to the state and nation, Obeying the law, social sensitivity, concern for the society and environment
	Academic values, norms, ethics, appreciate diversity, practice nursing ethically and culturally, respect Privacy, cultural values, and autonomy		
		A lesser number of learning outcomes	A greater number of learning outcomes
Knowledge from other disciplines	Knowledge from medicine (anatomy, physiology, pathophysiology and pharmacy	Psychology and human behavior not expressed as a learning outcome	Psychology and human behavior was included
	Communication such as using relevant tools, techniques, procedures and communication forms	Therapeutic communication not seen in the curricula	Therapeutic communication
	Public health, global health challenges, health promotion, health education, ill-health prevention	Prevention of infections diseases not emphasized	More emphasis on the prevention of infectious diseases

public debate on health policy". Values were also seen in the curriculum from Indonesia addressing nursing concepts, concepts of nursing care along with the Indonesian Nurse Code of Ethics including the principles of autonomy, malpractice, and bioethics related to nursing services.

Learning outcomes were found related to morals and ethics from all of the HEIs. However, some differences were seen between Scandinavia and Indonesia, both in content and in the number of learning outcomes included, with a greater number of learning outcomes in Indonesia. For example, from Scandinavia there was an emphasis on self-awareness, capacity for empathy and on ethical and moral responsibilities when meeting with patients and next of kin. The curriculum from Indonesia have almost identical learning goals which begin with devotion to God Almighty and able to perform religious attitudes, upholding human values in carrying out duties based on religions, morals, and ethics and going on with acting as citizens who are proud and love his homeland, having attitudes of nationalism and a sense of responsibility to the state and nation and "Obeying the law and being discipline in the society and state life" (Indonesia). Another learning outcome Aceh which was not seen in the curricula from Scandinavia was "cooperating and having social sensitivity and concern for the society and environment" (Indonesia).

Learning outcomes from Indonesia, were also implied in the learning goals from Scandinavia, including internalizing academic values, norms, and ethics, appreciating the diversity of cultures, views, religions, and beliefs, as well as opinions or others. Further, being able to perform nursing practice with ethical and culturally sensitive principles, having an attitude of respecting the right to privacy, cultural values that are embraced and the dignity of the client, respect the right of the client to choose and determine for himself the nursing and health care provided were found.

4.4. Knowledge from other disciplines

Knowledge from other disciplines was included in all the curricula, including learning outcomes related to knowledge within the field of medicine; anatomy, physiology, pathophysiology and pharmacology. From Indonesia basic human needs were seen along with a learning outcome on psychology and human behavior.

Learning outcomes encompassing communication were seen in all of the curricula, such as using relevant tools, techniques, procedures and communication forms. From Indonesia there were learning outcomes related to therapeutic communication.

Public health and global health challenges were learning outcomes seen in curricula from both Scandinavia and Indonesia. Several learning outcomes focused on health promotion, such as health education, and ill-health prevention. However, in Indonesia there was a focus on prevention of infectious diseases. Norway and Denmark had learning outcomes about the organization of health services and knowledge about the welfare state pertaining to nursing.

Denmark and Norway had learning outcomes related to pedagogic competence. This included guidance and teaching of patients and citizens, relatives, colleagues and prospective students. Also, from Indonesia there was a learning goal about being able to provide health education to improve a healthy lifestyle and reduce morbidity.

4.5. Skills

The generic category skills include three subcategories; procedures,

Table 2
The similarities and differences in the subcategory Skills.

	Similarities	Differences Scandinavia	Differences Indonesia
Procedures	Administration of medications	Procedures were only seen in the curricula related to the management and administration of medication	More detailed, both general and specific, such as sterilization, disinfection, basic life support in emergency and disaster management
Collaboration and leadership	Interprofessional collaboration, collaboration in health care services Supervising work duties Management and planning in organizations		Building Islamic nursing leadership and management
Digital competence and medical technology		Focus on knowledge and management and digital technology and digital solutions (not included in Sweden)	Focus on medical technology, use of equipment and medical devises

collaboration and leadership and digital competence (Table 2).

4.5.1. Procedures

Learning outcomes about administration of medicine was found in all of the curricula. The leaning outcomes Indonesia ranged from more general outcomes; mastering the techniques, principles, and procedures for implementing nursing care/practice carried out independently or in groups, to more specific outcomes such as sterilization and disinfection methods, and to carry out basic life support in emergencies and disaster management. In Scandinavia, procedures were only seen in the curricula related to the management and administration of medication.

4.5.2. Collaboration and leadership

Learning outcomes related to collaboration were seen from Scandinavia and Indonesia. These included interprofessional collaborations with interprofessional teams and sectors and institutions in the overall health care services. Collaborations also were with other nurses, patients, relatives and citizens in care and in different contexts.

Leadership could be seen in a few learning outcomes. For example 'to lead and prioritize tasks in the nursing service' (Norway), 'to undertake supervisory duties' (Sweden), and 'to supervise and evaluate completion of work assignments' (Indonesia). Also from Indonesia there was a learning outcome for building Islamic nursing leadership and management and coordinating with other health teams.

Knowledge of management and planning in organizations was seen in learning outcomes from Indonesia and from Scandinavia, "demonstrate knowledge of the planning, management and coordination of health care measures" (Sweden). Another learning outcome was "possesses knowledge of the priorities for deploying professional resources under the prevailing framework conditions in the health service" (Denmark).

4.5.3. Digital competence and medical technology

Learning outcomes related to digital competence were seen in learning outcomes from Denmark and Norway. They included knowledge and management of technology and digital solutions in health services for care, treatment and quality assurance. In one learning outcome the purpose of technology and digital solutions was for supporting patients' and relatives' resources, coping opportunities and participation. Information and communication technology was included in one learning outcome. Medical technology was seen in learning outcomes from Indonesia, 'Being able to choose and use appropriate equipment in providing nursing care in accordance with nursing care standards" and "Mastering the types, benefits, and manuals for the use of medical devices'.

4.6. Nursing practice

The generic category Nursing practice includes four subcategories: the nursing process, public health, quality in nursing practice and patient safety, and development, research and innovation (Table 3).

4.6.1. The nursing process

The nursing process was central to all of the higher learning institutions. This included planning and carrying out nursing care for many different patient groups and in different contexts and settings, for example nursing care in health, emergency, illness prevention, rehabilitation and palliative care. Learning outcomes on the nursing process involved addressing patient care needs on both individual, group and national levels. One learning from Sweden was that 'assessments should be made using a holistic approach along with the ability to identify health care needs, draw up care plans, and provide care and treatment independently and in cooperation with patients and those close to them' (Sweden). A holistic approach was also noticed from Indonesia where learning outcomes included the assessment of bio-psycho-social, cultural and spiritual aspects for nursing care. Further from Indonesia one learning outcome was; 'being able to collect data, analyze and formulate problems, plan, documents, and present nursing care information' (Indonesia).

Table 3
The similarities and differences in the subcategory Nursing Practice.

	Similarities	Differences Scandinavia	Differences Indonesia
Nursing process	Nursing process		
Public Health	Health promotion and prevention of ill-health		Focus on the prevention of illness and transmission of infections
Quality in nursing practice and patient safety	Reflective ability, solving problems independently, responsibility for clinical decision making		More focus on improving nursing services through professional knowledge and evidence-based nursing practice Professional practice and responsibility by following laws and regulations
Development, Research and Innovation	Learning outcomes related to development and research Innovation or entrepreneurship was seen in a learning outcomes from all of the higher educational institutions (with the exception of Sweden)		

4.6.2. Public health

Learning outcomes for practice related to public health were seen in learning outcomes from both Scandinavia and Indonesia. This included the ability to identify the need for measures to promote health and prevent ill- health and implement them. Health promotion was also connected to promoting healthy lifestyles. One learning outcome from Indonesia was, 'able to carry out health promotion to improve client's health lifestyle and reduce morbidity' along with the prevention of illness and transmission of infections (Indonesia) preventing the transmission of infections.

4.6.3. Quality in nursing practice and patient safety

Quality in nursing practice is seen several learning outcomes from a number of different perspectives in all of the higher educational institutions. Quality in nursing practice was related to abilities for problem solving and decision making. Another goal was to be able to plan and execute projects. From both Scandinavia and Indonesia, some learning outcomes addressed reflective ability, solving problems independently along with taking on the responsibility for clinical decision making and work results.

From Indonesia there were learning outcomes about improving nursing services, by keeping updated in their professional knowledge, mastering the concepts and principles related to patient safety and quality insurance while applying evidence-based nursing practice. Other leaning outcomes were to measure quality in their nursing practice and to assure quality performance by supporting co-workers through supervisory responsibilities. From Norway one learning outcome was; 'Is capable of performing nursing services based on research, experience and professional judgement' (Norway).

From Indonesia a connection was seen between professional practice, responsibility and following rules and regulations; 'Being able to be accountable for professional practice including the ability to accept responsibility for professional decisions and actions in accordance with

the scope of practice under his responsibility, and laws/regulations' (Indonesia). From Denmark there were similarities regarding professional practice and responsibility, such as; 'possesses knowledge of, and is able to reflect on, their own practice, as well as their profession's duties and responsibilities, in organizational, administrative and social perspectives and as part of the health service overall', and 'possesses knowledge of, and is able to reflect on, clinical management and clinical decision-making based on knowledge of practice, development and research and across professions, sectors, institutions as well as in citizens and patients' homes' (Denmark).

4.6.4. Development, research and innovation

All of the higher learning institutions had learning outcomes related to development and/or research. Some were related to the research process; for example from Sweden 'demonstrate the ability to search for, gather, evaluate and critically interpret the relevant information for a formulated problem and also discuss phenomena, issues and situations critically' (Sweden). Further, from the Scandinavia was understanding of applicable methodologies in the field, specialized study in some aspect of the field as well as awareness of current research issues and research methods. From Indonesia one learning outcome was 'to improve professional nursing services in accordance with the demands of society, today and in the future' (Indonesia). The higher learning institution from Indonesia on the bachelor level had one learning outcome related to research 'increasing the implementation of research and producing national and international publications in the development of nursing science and practice to respond to global issues'(Indonesia). The diploma III higher educational institutions from Indonesia did not have any specific goals about research.

Many other learning outcomes were related to the utilization of research in nursing practice. For example from Sweden 'link research and development with professional practice, adopt a professional approach'. Another learning outcome from Norway was 'Can apply professional knowledge and relevant results from research and development work in theoretical and practical issues, and can make reasoned choices in line with evidence-based practice'.

Developmental work was seen in several learning outcomes, especially in the Scandinavian higher learning institutions. The learning outcomes were about the use of research and relevant information for developmental work focused on knowledge and reflection about how to use research methods for evaluation, quality assurance and development in professional practice, such as methodological improvements. This could be done through managing and integration knowledge of practice, development and research in relation to nursing care. This was also similar to a learning outcome from Indonesia; 'Implement and integrate research results in the field of nursing science and technology to solve clinical and community-based health problems'.

Innovation or entrepreneurship was seen in a learning outcomes from all of the higher educational institutions with the exception of Sweden. Innovation could be found in learning outcomes such as 'management and a responsibility for using empirical evidence, theory and research for innovation development and research work' (Denmark). Further from Norway was 'Knowledge of tools and methods for driving innovation processes, implementation and continuous improvement work' and 'Is capable of contributing to new thinking and innovation' (Norway). Learning outcomes related to innovation were also found in Indonesia 'doing innovation in the field of clinical and community-based nursing science and technology' (Indonesia). From Indonesia there were also learning outcomes about entrepreneurship; 'Internalizing the spirit of independence, striving, and entrepreneurship' (Indonesia).

5. Discussion

The results showed that "Professional approach and practice" was the main category of the nursing curricula in both Scandinavia and Indonesia and included three generic categories; Theory, Skills and Nursing Practice which comprised a total of 10 subcategories. There were both similarities and differences between the content of the curricula. In the following, we will discuss these results and how the results can be used to strengthen nursing education in both Aceh and Scandinavia.

Three conditions seem to affect the development of the content of the educations in the various countries. Firstly, the level of nursing education differs between upper secondary level, diploma level and bachelor's level which leads to major differences between the descriptions of learning outcomes and the level of abstraction (The Council of the European Union, 2017). In Scandinavia, the learning outcomes are described on a general level, while the learning outcomes in Aceh is described in more detail. The more detailed description of learning outcomes could be seen in light of the fact that nursing education in Aceh is organized both on upper secondary and bachelor level, while the Scandinavian programs are at bachelor level. Two out of the three curricula from the higher education institutions in Aceh included in this study were on the upper secondary level, which can be reflected in the results in relation to the level of abstraction.

In some curricula in Scandinavia the level of abstraction is high which makes it difficult to obtain the content without further explanation and elaboration. It is debatable whether a high level of abstraction is favorable for the development of curricula, when nursing is becoming more diffuse. This could be seen as both advantages and disadvantages of having learning outcomes at different levels. Having learning outcomes on an overall level will provide for a greater scope in interpreting what the learning outcomes entail. However, operationalization would then be necessary to clarify what the learning outcomes mean. Precise detailed learning outcomes leave less room for interpretation when the operationalization is done in the course syllabuses. This could to a greater extent ensure equal understanding of what is meant in the learning outcomes.

Humid and warm climate, hygienic conditions and population density are factors that contribute to the rapid spread of infectious diseases. Also, natural disasters such as earthquakes and floods occur on far greater frequency in Indonesia than in Scandinavia (Dwinantoaji et al., 2019; Khorram-Manesh et al., 2020). From this perspective, it is understandable that it is important that the learning outcomes are precise, with little room for interpretation, because it is of utmost importance that nursing students acquire competence in this area. In Scandinavia, there are not the same challenges, however, the pandemic in 2020–22 showed that there was a great need for expertise in infection control (Granrud et al., 2023; Papadopoulos, 2022; Pedersen and Seppola, 2022).

Secondly, religious and cultural aspects affect the content of the nursing education differently in Indonesia and Scandinavia. In Indonesia, religion is reflected throughout society. Culture and ways of life are interwoven with attitudes and thought patterns. All behavior should be according to religious teachings that apply to all, which can explain religion's place in nursing education. The design of the religion allows for modernization in line with global developments, but within the limits permitted by the religion (Maksum et al., 2022). Here there is a clear difference in central values and key concepts in nursing education programs between Aceh and Scandinavia. In the Scandinavian countries, religion provides little guidance for nursing education. The nursing programs are developed according to national and international laws and regulations, and global, ethical guidelines (International Council of Nursies, 2021). In Aceh, God, religion and community are central values in nursing, while central values in Scandinavia seems to be more directed towards the individual and the rights and duties of the individual.

This difference in values and what they are aimed at may have an impact on the nurse's development towards becoming an independent professional. Research shows that nurses in Indonesia are characterized by assisting the doctor and that there is little emphasis on the nurse's

ability to work independently (Sommers et al., 2018). The nurse's pedagogical role appeared to be somewhat less emphasized in Aceh than in the Scandinavian countries where the pedagogical role refers to pedagogic competence for nurses. In Indonesia, there is an increase in lifestyle-related diseases such as obesity and diabetes (Adisasmito et al., 2020; Azam et al., 2023; Sugiharto et al., 2017). By empowering nurses during their education to take an independent role in supervision and for teaching health promotion and disease prevention, this could contribute to better public education about food choices. Safeguarding nutrition is a basic need and thus an important area of responsibility for nurses regardless of culture. In addition to the pedagogical role, leadership appears to be poorly understood in the learning outcomes from Aceh, which is also supported by research on the professional development needs of nurses in Indonesia (McKenna et al., 2022). We also see that utilizing research, and the ability to interpret and critically reflect upon it is promoted to a greater extent in Scandinavia than we see in learning outcomes in nursing programs in Aceh. In Aceh, more emphasis is placed on formal aspects of the research process such as storage of data, validity, etc. We believe these are findings that could explain why the nurses' ability to work independently is somewhat less emphasized in Aceh than in Scandinavia.

Thirdly the contextual (societal) aspects seem to have impact on the development of nursing curricula in the different countries. Learning outcomes related to public health and global health challenges were found in all the curricula. From Aceh one focus was on the prevention of infectious diseases. Infectious diseases are one of the major health challenges in Asia and therefore it is of utmost importance that nurses have knowledge and competence on how to handle these situations, and most of all, how to prevent them (Dwinantoaji et al., 2019; Maryanti and Lismawati, 2022). A similar focus on infectious diseases were not found in the Scandinavian curricula. In light of the pandemic in 2021–2022, the need for further knowledge about the control of infections in the Scandinavian countries was revealed (Khorram-Manesh et al., 2020; Montegrico et al., 2023).

Increasing global climate changes resulting in various natural disasters may require special expertise on the part of nurses in the future (Dwinantoaji et al., 2019). In light of such situations, it seems important to specify learning outcomes that promote competence in handling crises to a greater extent than what appears in the Scandinavian curricula. This shows how the education of nurses must be seen in the context of what areas of nursing are needed to be practiced (Montegrico et al., 2023). It can be argued that nurses in the future must have competence that is more adapted to the global development trends with climate changes and a greater risk of flooding and droughts also in the Scandinavian countries. Such changes will place greater demands on expertise in being prepared for crisis in general, and specifically on how it pertains to nursing (Mulyadi et al., 2022).

5.1. Methodological considerations

To ensure trustworthiness the method and analysis were described in detail, and the results were described in the content of the categories. Citations using examples from learning outcomes were used to further strengthen trustworthiness of the results and to demonstrate the links between the results and the data. Reflexivity was acknowledged as each of the authors represented one of the included higher learning institutions. The research group often discussed the learning outcomes in the data creating an awareness of our preunderstandings of our own curriculum.

One limitation was that the curricula used in the analysis were on different levels of abstraction. Often the more specific content and learning outcomes in Scandinavia are seen in the course syllabuses which are make up the nursing programs. This could account for the differences seen in the content of the curricula. A weakness could be related to the quality of the translations of the nursing curricula. However, when unsure of the meanings of the learning outcomes, authors from each higher learning institution could clarify what was meant. One strength of the study was that the research group was comprised of researchers both from Scandinavia and Aceh, which enables us to include perspectives from two different parts of the world. There were, however, language differences among researchers as well as with the data. The data, which consisted of the curricula, was translated into English. And any problems with misunderstanding due to the use of English in the research group could be resolved and did not affect the quality of the study.

6. Conclusion

In summary, it appears that clear learning outcomes related to being prepared for emergencies and disaster management could be important for strengthening nursing education in Scandinavia so that nurses are equipped to handle the challenges of the future resulting from climate change. It could be argued that the nursing education in Aceh could strengthen the independent roles of nurses by placing greater emphasis on leadership and the nurse's pedagogical competence. A strengthening of nurses' teaching role could be important in meeting health challenges in Indonesia, such as increasing obesity and diabetes. This could be done within the limits permitted by the religion for the practice of nursing and be in line with this.

Through this study, we see that international collaboration in nursing can yield shared knowledge. By comparing and describing the curricula, possible areas for improvement in nursing curricula and education could be identified. For example, the higher learning institutions in Scandinavia could learn from the higher learning institutions Indonesia about the importance of being prepared for disasters and disaster management, while on the other hand, the results could be valuable for the Indonesian higher learning institutions for improving leadership in nursing and increasing the status of nursing.

Nursing must be seen in the context in which it is to be practiced. Nursing is in transition, as the context in many parts of the world is changing due to increasing climate challenges and its consequences. This means that the outreach nursing must also be altered in order to have a readiness for acting on future health challenges and highlights the importance for nursing education to prepare nurses in the future for meeting these challenges. This shows that a transcultural perspective can lead to the enhancement of quality of nursing education as different countries learn from each other. This study can contribute to working towards reaching Sustainable Development Goals in relation to nursing.

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CRediT authorship contribution statement

Brian D. Unis: Supervision, Project administration, Methodology, Formal analysis, Conceptualization, Writing – original draft. **Anne Grethe R. Kydland:** Methodology, Formal analysis, Conceptualization, Writing – original draft. **Johanna Svärd:** Methodology, Formal analysis, Conceptualization, Writing – original draft. **Birthe Thorø:** Methodology, Formal analysis, Conceptualization, Writing – original draft. **Suwarni Nais:** Methodology, Formal analysis, Conceptualization. **Dewi Marianthi:** Methodology, Formal analysis, Conceptualization. **Vigdis Abrahamsen Grøndahl:** Methodology, Formal analysis, Conceptualization, Writing – original draft.

Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence

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