



Research article

Voices from undergraduate students and faculty members regarding the status and challenges of baccalaureate nursing education in Myanmar: A qualitative study

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ABSTRACT

Objectives: To clarify the present status and challenges of nursing education in a baccalaureate degree program in Myanmar.

Design: A qualitative descriptive design using focus group interviews.

Participants: Undergraduate nursing students and faculty members from the *University of Nursing* in Myanmar.

Methods: Focus group interviews were separately conducted for each group of undergraduate students, and junior and senior faculty members. The interview guide for the students was about their perceptions and requests regarding their nursing education. For the faculty members, the interview guide was about their current perceptions and challenges regarding nursing education. Each group interview took about 60 min.

Results: Eight undergraduate students, eight junior faculty members, and six senior faculty members were eligible to participate. The undergraduate students voiced their requests for improvement in teaching methods. They described their struggles and learning process from their clinical placement experiences, as well as their distress under the present educational environment. The faculty members described their perceptions and challenges regarding inventiveness in teaching methods, challenges in conducting clinical placements, lack of educational devices and facilities, and innovation requirements in the faculty organization and system.

Conclusion: The present status of nursing education in a baccalaureate degree program in Myanmar reflects ongoing serious challenges in undergraduate nursing education as expressed by both undergraduate students and faculty members. Their voices echo a pressing need to implement alternative methods of nursing education for better academic outcome. Moreover, continuing education is realized as crucial for capacity building and professional development of faculty members.

1. Introduction

High-quality nursing and midwifery education is crucial for strengthening healthcare systems and ensuring safe and equitable healthcare. Over the years, there has been an increasing need for healthcare workers globally. However, the [World Health Organization \(2016\)](#) has pointed out an imbalanced distribution, with the lowest density of healthcare workers found in South-East Asian and African countries at a nurse/midwife density of 0.6/1000 population compared with 7.1 in high-income countries. What remains problematic is not only the numbers but also the university education related to nursing/

midwifery with great disparities between the programs provided in different global regions ([WHO, 2009](#)). Importantly, [Cancedda et al. \(2015\)](#) pointed out the global shortage of healthcare professionals in low-income countries. They described this as being caused by a narrow focus on a small set of diseases, insufficient utilization of donor funding, inadequate scale up, insufficient emphasis on acquisition of practical skills, poor alignment with local priorities, and lack of coordination. A gap in the quality of research evidence for in-service training has also been pointed out between low- and middle-income countries and other areas ([Bluestone et al., 2013](#)). Thus, it remains a challenge for low- and middle-income countries to invest in nurse education with their current

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economic and human resources. Some studies from low-income countries have discussed various situations of nursing student education. Bell et al. (2013) described the current weak infrastructure of facilities and educational environment despite the growing number of nursing students, as well as the severe shortage of capable educators as serious problems besetting undergraduate nurse education in Ghana. Kamphinda and Chilemba (2019) obtained the perspectives of undergraduate nursing students on their clinical learning environment in Malawi. The students expressed dissatisfaction with the clinical supervision and support that they received during their clinical training experiences.

Myanmar is one of the South-East Asian countries classified as a lower middle-income country with a population of 54.4 million in 2020 (World Bank, 2021). The National Health Network (2016) described the health status of the Myanmar population as facing numerous challenges. Based on preliminary estimates from the 2014 census (Department of Population, Ministry of Labour, Immigration and Population, 2016), the maternal mortality ratio of Myanmar is 282 deaths per 100,000 live births; the under-five child mortality rate is 72 deaths per 1000 live births; and the infant mortality rate is 62 per 1000 live births (Ministry of Health and Sports, 2016). The Health Workforce Strategic Plan (2012–2017) outlines the current human resource challenges in Myanmar. These include shortages of human resources, inappropriate balance and mix of skills, inequitable distribution, and difficulties in rural retention. As has been recently reported in “State of the World’s Nursing Report-2020” of the WHO for Myanmar, the number of nursing personnel in the country is 35,947; the number of graduates per year is 2522; the nurse/midwife density is 6.7 per 10,000 population; and nurses and midwives consisted about 55% of the healthcare workforce (WHO, 2020). The number of educational institutions is also important for creating a sustainable workforce. In an article regarding the trends in attrition of health professional teaching staff, the Ministry of Health and Sports in Myanmar reported the existence of 14 medical and allied universities and 46 nursing and midwifery schools in the country (Nang Mie Mie et al., 2016). The first nursing university was inaugurated in 1991. Presently, there are three universities that offer undergraduate nurse education. In 2015, the Myanmar Nurse and Midwife Council (2015), the country’s regulatory agency of nurses and midwives, issued guidelines on the standards for nurse and midwife education courses, as well as certification standards. Since then, there have been no reports describing the present status of undergraduate nursing courses in Myanmar.

Although there were some studies on educating clinicians in Myanmar such as with the use of simulation-based training (Nataraja et al., 2020; Oo and Nataraja, 2020), studies on nurse education remain limited. With the scarcity of published information, it is essential to investigate the present status of nurse education in Myanmar as perceived by undergraduate students and faculty members. It is also important to elucidate the educational perspectives and needs of faculty members. The findings will be useful for identifying specific areas of nurse education in Myanmar that should be improved. Strategies and recommendations for nurse education have already been initiated for low- and middle-income countries. These include the use of train-the-trainer models, the establishment of strong international partnerships, and the integration of cultural context (Azad et al., 2020). For the present study, the findings are anticipated to be useful not only for Myanmar but also for other low- and middle-income countries in terms of enhancing their baccalaureate nurse education to augment the shortage of healthcare workers crucial for achieving universal health coverage (WHO, 2016). The present study also aims to provide suggestions and recommendations after a thorough understanding of the current situation of baccalaureate nurse education in Myanmar.

2. Methods

2.1. Study aims and design

This study aimed to explore the present status and challenges of nurse education in Myanmar as perceived by undergraduate students and faculty members in a baccalaureate nursing degree program. It also aimed to elucidate the educational perspectives and needs of faculty members. This research applied a qualitative descriptive study design using focus group interviews.

2.2. Participants and settings

The target participants are the students and faculty members of the *University of Nursing* in Myanmar as follows:

- (1) Undergraduate students (i.e., 1–2 from each academic year): around 5–10 students.
- (2) Junior faculty members (i.e., lecturers, assistant lecturers, tutors, and clinical instructors): around 5–10 members.
- (3) Senior faculty members (associate professors and professors): around 5–10 members.

The sample size proposed for a case study is reportedly 4–10 cases (Creswell and Plano Clark, 2018).

2.3. Data collection

After receiving approval from the Institutional Review Board (KYO 30-33B) of the *University of Nursing*, the proposal was submitted to the Department of Medical Research, Myanmar Ministry of Health and Sports for research planning review, and it was approved (Ethics/DMR/2019/118).

The study outline was explained verbally and in writing to the rector of the *University of Nursing*. The rector provided the names of undergraduate nursing students who would be considered as participants. The study outline was explained verbally and in writing to the participants by a research assistant who was in charge of interpreting for this study. After agreeing to participate, a signed consent was obtained from the participants. The same procedure was used for the junior and senior faculty members. After obtaining the consent of all participants, the interview was recorded using an IC recorder. The demeanor of the participants was described in the field notes.

Focus group interviews were conducted for each group according to the interview guide. The moderator facilitated the discussion with the interpreter. The interview guide for the undergraduate students was as follows: (1) tell us your motivation for entering the *University of Nursing*, and (2) tell us your perceptions and requests regarding the nurse education you have received so far. The interview guide for the faculty members were as follows: (1) tell us what you value or your policy in nurse education, and (2) tell us about your current perceptions and challenges regarding nurse education. Each group interview lasted for around 60 min.

2.4. Data analysis

Data were analyzed in accordance with the procedures described by Vaughn et al. (1996) to explore the present status and challenges of nurse education and identify participants’ understanding, emotions, perceptions, and thoughts. This involved confirmation of basic concepts, allocation of data into units, categorization of information units, agreement on categories, topic confirmation, and application of theory. “Basic concept” refers to the content that forms the main topic within the interview. The entire analysis process was discussed among the researchers, and efforts were made to ensure the truth and credibility of the analysis results. Additionally, qualitative validation using member

checking, going back to key participants, triangulation of data from transcripts, and making observational notes were conducted and compared with disconfirming evidence (Creswell and Plano Clark, 2011).

3. Findings

The focus group interviews were conducted in three groups. **Group I** consisted of eight undergraduate students from first year to fourth year. **Group II** consisted of eight junior faculty members whose positions were tutors, senior tutors, or assistant lecturers. **Group III** consisted of six senior faculty members whose positions were lecturers or professors. The areas of nursing specialization covered were adult nursing, community health nursing, mental health nursing, women and child health nursing, nursing administration, and fundamental nursing.

Categories and subcategories were extracted from the data. Although the focus group interviews were conducted separately for the junior and senior faculty members, their data were integrated for analysis.

3.1. Categories from undergraduate students

3.1.1. Request for improvement of teaching methods

Dissatisfaction was felt among the undergraduate students regarding the teaching methods and course content. Some students requested an 'update of knowledge' especially regarding practice guidelines. Others expressed that the 'lessons and exams were based on memorization' and that 'long passive style of lectures results in loss of interests':

They just read out the textbook and that's it. I think it would be better if we were taught by example rather than by reading out loud, because we can read the text ourselves or with a dictionary.

(Student)

One student had an 'expectation for a student-centered approach with self-learning' in addition to the current teaching methods:

When teaching, it is good to teach in a student-centered [approach] with self-learning, which is no different from basic education.

(Student)

There were requests for updated nursing theories and guidelines from textbooks, as well as 'requests for teaching practical skills at the university before clinical placement' in addition to their bedside learning and assignments which they have carried out before doing their practical training in the hospital:

It is difficult to do things directly on patients that we have never seen before because we didn't do them during the training. That's why I wish we could learn more in the practice room.

(Student)

3.1.2. Suffered from anxiety while learning during clinical placement experience

Most students suffered from anxiety during their practical training experience because the 'students were not welcomed' and they felt 'full of anxiety and fear towards their practical training':

I felt that students had no place in clinical practice, and I lost the opportunities I should have had

(Student)

The students emphasized their 'need for more support and guidance from the faculty of the university':

The teachers don't come with us to the practical training. They explained to me in English, but they didn't give me any information in detail.

(Student)

At the same time, the students expressed that they 'learned from their real practice' and they were 'encouraged by the positive feedback from the nurse manager and their seniors from the university'. They also learned from their 'observations during their nursing duties and while providing care for patients with compassion and kindness':

Some students described their distress from the educational environment as being caused by the 'lack of educational facilities':

The room is very small: there are 180 to 200 students in the school every year. Sometimes, it is difficult to see clearly during the practical training. It would be better if we could practice in a bigger room so that we could have more time to practice and learn more.

(Student)

3.1.3. Lack of student life support

The students also mentioned about the need to improve their everyday life by addressing their 'difficulty in commuting' and the 'poor university facilities'. Some students occasionally had trouble in commuting between the university and the practical training site. They needed to hire transportation for themselves. The students also voiced their requests for the improvement of university facilities and lamented that the dormitory was only for female students:

It's not easy to get to the training site. I was only given the name of the training site in my first year and I had to find it myself. Sometimes, it rained a lot like in 2018, and there was a flood and the water was up to my knees... Some people don't know how to drive a motorbike or don't have one.

(Student)

The students described that there were no university activities in collaboration with other universities, so they 'connected with other nursing university students by themselves' through the Internet (e.g., SNS).

3.2. Categories from the faculty members

3.2.1. Essence of teaching

The faculty members emphasized the 'significance of both theory and practice' during nurse education, as well as the importance of initiating the heart of a nurse expressed in Myanmar language as "sedaner", which means caring responsibility and kindness':

As a nursing student, theory is important, but so is the clinical placement of caring for patients.

(Senior faculty member)

The most important thing is the sedaner. When I teach theory, I also tell them to have that kind of mind

(Senior faculty member)

The faculty members believed that nursing for students would be 'a lifelong professional job' and they hoped that the students would 'become confident as a nurse by making meaningful contributions to people through various nursing care procedures':

3.2.2. Inventiveness in teaching methods

Most faculty members attempted to use different methods to enhance students' understanding aside from teaching based on a textbook such as

the 'use of a visible material for better understanding', making the most of the 'strength of group work' for discussion, and doing a 'case study in public health' and giving examples of preventive medicine. The faculty members were 'eager to teach the latest knowledge to meet the global standards' by giving additional information they thought the students should know.

The faculty members emphasized the use of web-based learning. They explained that these changes reinforced the shift in education from 'passive teaching to self-learning':

It is not necessary for teachers to teach everything to students; times have changed and today's young people are smart and can use the Internet to gather information if they are given a problem to think about. I believe that students will improve more if they can practice what they have studied freely in the library and the practical room.

(Senior faculty member)

3.2.3. Challenges in conducting clinical placement

Although it was very important for the faculty members to give emphasis to clinical placement, there were many challenges in conducting such placement: 'there was an imbalance between the number of students and the capacity of the institution' where the students conducted clinical placement. Additionally, the faculty members voiced out that they 'lack time' for conducting bedside teaching with students in the hospital, and that there is 'no faculty system for clinical teaching' in Myanmar:

As for practical training, I have heard that assistant professors were assigned in nursing colleges for clinical placement in other countries..... In Myanmar, from the clinical nurses' point of view, teaching is not their main job, if they say they are too busy, they cannot do anything.

(Junior faculty member)

In clinical placement settings, the faculty members expressed that 'collaboration is essential between clinical nurses and faculty members', although they also understood the circumstances confronting the clinical nurses:

Sometimes, the bedside teaching is conducted by the teacher in charge at the university, sometimes by a clinical nurse at the ward.

(Senior faculty member)

3.2.4. Lack of educational devices and facilities

As similarly expressed by the students, the faculty members expressed the problem of 'infrastructure shortage' which prevents reaching an optimal level of education:

As for the classrooms, the rooms are small for the number of students and there is no air conditioning, so it is very hot. But we manage to keep each other going.

(Junior faculty member)

Some faculty members mentioned that 'budget is needed' for the procurement of educational devices and facilities at the university:

3.2.5. Roles of faculty members in student life support

In addition to giving education to the students, one of the important roles of the faculty members is to support students in their university life. Some faculty members described the 'importance of mental support' to students as their duty:

I try to praise them so that those who have done well will want to keep it up and for those who haven't done well I try to make them feel positive to be able to work their best performance.

(Junior faculty member)

The nursing university has a 'Guardian system' in which each faculty member provides counselling and consultation to ten students regarding their problems and concerns. In this way, each faculty member develops a deep 'consideration for family matters' with their assigned students to help solve their concerns.

3.2.6. Innovation requirements in faculty organization and system

The faculty members struggled in the current university system and organization regarding the ideal education to give to the students. Firstly, they described that 'quality improvement of teachers is required':

Teachers were not given the training on how to teach. We don't have a particular teaching method or time frame for teaching the new curriculum in each subject.

(Senior faculty member)

Motivation is very important for faculty members to improve themselves. There are 'few chances of continuing education' and some faculty members expressed that 'the criteria for job promotion were unclear', which may not fully evaluate their achievements:

The opportunities to study for Msc and PhD are also less in Myanmar than in other countries. Career development is also limited in terms of education system, and promotion is based on seniority after employment.

(Junior faculty member)

The significant barriers confronted by the faculty members were lack of human resources and heavy workloads. Most of them referred to the 'shortage of teachers', which cannot be solved only through their efforts. Additionally, they have 'too much office work to devote to in teaching' because of the lack of human resources not only in terms of teachers but also in terms of administrative personnel or staff, which affects the whole university system.

4. Discussion

Many challenges have been identified from undergraduate students and faculty members in the baccalaureate nursing degree program of the University of Nursing in Myanmar. Challenges in nurse education are usually due to inadequate resources, undeveloped curriculum, student-educator imbalance, and insufficient professional development opportunities. These are evident in the case of the University of Nursing in Myanmar, and have been reported in other studies of undergraduate nursing students in Pakistan (Younas et al., 2019). This situation emphasizes the importance of filling in the gaps between the students and the faculty members, with the aim of developing a more comprehensive baccalaureate nursing degree curriculum.

4.1. Importance of making changes in education methods

It was evident from the interviews that both undergraduate students and faculty members understand that the current educational methods are not sufficient and effective in producing ideal results and reaching global standards. The request of undergraduate students for new teaching methods instead of passive-style lectures such as student-centered learning has been recognized by the faculty members as necessary to realize change. A previous systematic review of the effectiveness of outcome-based education using a student-centered approach showed improvement of nursing competency in terms of knowledge

acquisition and skill performance (Tan et al., 2018). In addition to this approach, as evidence-based practice is recommended, a previous thematic literature review of teaching strategies showed that interactive teaching methods such as problem-based learning (PBL), workshops, groupwork, virtual simulation, and oral presentations enhanced the development of critical thinking skills (Hornbvedt et al., 2018). The application of flipped learning in clinical placement of mental health has been shown to increase the core competencies of nursing students in South Korea (Im and Jang, 2019). It is inevitable that educators should gain additional skills to be able to implement alternative education methods.

With the ongoing COVID-19 pandemic as well as the needs expressed by the undergraduate students and faculty members, web-based learning or virtual learning will become even more necessary. A review of e-learning and information communication technology (ICT) in nurse education has revealed that not only students engaged in lifelong learning but also educators need to further develop their ICT skills to facilitate e-learning and adopt e-learning teaching strategies (Button et al., 2014). Indeed, teaching skills greatly influence the student educational environment.

4.2. Expectations from baccalaureate nursing degree curriculum in low- and middle-income countries

The voices of the faculty members expressed their sentiments and expectations of the essence of teaching, that is, to develop nursing students to become a lifelong professional able to combine nursing science and practice. The study of Abedi et al. (2019) involving interviews with faculty members and baccalaureate nursing students in two universities in Uganda highlighted a distinction from other nursing certificates such as a diploma in terms of not only equipping students with practical nursing skills but also developing their leadership capability, engaging in nurse science and community health, and contributing to the health system. At the same time, as voices from students reflected anxiety with their clinical placement, baccalaureate nursing students had less confidence in midwifery practice than diploma nursing students (Sharma et al., 2018). An important essence of a baccalaureate nursing program is to provide skills for carrying out improvements in the future health-care system of the country. The best use of clinical practice as integrated into the curriculum is a very important aspect to consider.

4.3. Role of faculty members in clinical placements

The undergraduate students expressed anxiety and fear regarding their clinical placement, which was apparently not welcomed by the clinical staff and seemingly lacked support from the faculty members. Another study similarly reported on the perspectives of undergraduate nursing students in Malawi, describing their clinical learning environment and supervision as beset with a shortage of clinical staff and a poor student-nurse relationship (Kamphinda and Chilemba, 2019). In such a circumstance, the students adapted themselves into the ward culture as their coping strategy, and then positively reframed what they have experienced during their clinical placement as another coping strategy in their clinical placement (Lopez et al., 2018; Ching et al., 2020).

Additionally, the undergraduate students in their clinical placement expressed that the support they needed came more from the nursing institution educators than from the clinical staff because the former knew them better (Lopez et al., 2018). Faculty members are expected to be mentors of students in their social and emotional aspects of life. The caring aspect of nursing was reportedly influenced by positive and negative student-faculty interactions, and the student-faculty relationship was a major determining factor for the academic success of undergraduate nursing programs (Ingraham et al., 2018). In their integrative review, McCarthy et al. (2018) examined the stress and coping mechanisms of nursing and midwifery students during their undergraduate education program. They stated that educators need to

recognize the stress experienced by nursing and midwifery students and its consequences, and provide them support in their academic setting and clinical placement.

4.4. Continuing education for both faculty members and clinical staff

The faculty members voiced their desire for further professional development and quality improvement. To address this, continuing education is one of the key factors in building their capacity and abilities. Unfortunately, there were very few chances to be able to avail of continuing education in their current situation. In a previous case study of the professional development needs of nurse educators in Australia, more than 80% of nurse educators were eager to participate in nurse education workshops designed for professional development such as learning activities design and simulation skills (Oprescu et al., 2017). A study conducted in Cambodia for building the capacity of nursing professionals provided insights from a bridging programme for faculty development. The study suggested a model of capacity building of the nursing workforce in developing countries, which needs both leader development and quality improvement of the teaching staff and nursing professionals in mid-term planning and long-term planning (Koto-Shimada et al., 2016). Both faculty members and hospital preceptors were influential in developing the skills of the students and helping them to learn the identity of nursing. If workshops or seminars are provided, both the clinical staff and the faculty members should participate in the same setting.

4.5. Implications for the future

This is the first study to investigate the baccalaureate degree program in the *University of Nursing* in Myanmar. These challenges call for the introduction of innovative teaching methods or improvements for professional development. Cancedda et al. (2015) described the best practices that can be adopted by training initiatives as alignment to local priorities, country ownership, competency-based training, institutional capacity building, and establishment of long-lasting partnerships with international stakeholders. Based on these best practices, it is possible to outline a framework for health professional training initiatives that can help better address the health workforce shortage in low-income countries.

4.6. Limitations

For the selection of students, the rector may have influenced the students to answer the interview questions, not intentionally, but by the nature of the power vested on the rector herself. Our findings may not be generalizable to all baccalaureate nurse education programs in Myanmar as the participants in this study were only from one university offering undergraduate nurse education in Myanmar. Further study consisting of students and faculty from all baccalaureate nurse education programs in Myanmar is warranted.

5. Conclusion

Undergraduate nurse education in the *University of Nursing* in Myanmar faces significant challenges as expressed by both undergraduate students and faculty members, warranting careful assessment and urgent attention. The necessity of implementing alternative education methods stems from the need for better academic outcomes. There is also the realization that continuing education is crucial for capacity building and professional development of faculty members. Undergraduate nursing students also need full support from both the clinical staff and the faculty members, especially in their clinical placement. Continuous training based on best practices may be effective for improving the professional skills and knowledge of the clinical staff and faculty members, and result in better student academic outcomes.

CRediT authorship contribution statement

Michiko Oguro conceptualized and designed the study. Nyi Nyi Htay coordinated the participants and collected data. Michiko Oguro, Sachiko Sakurai, and Shigeko Horiuchi performed the data analysis and drafted the manuscript. All authors read and approved the final manuscript.

Ethical approval

Ethical approval was obtained from both the University of Tokyo Healthcare Research Ethics Committee (KYO30-33B) and the Department of Medical Research, Ministry of Health and Sports, Myanmar (Ethics/DMR/2019/118). Before the interview, verbal and written consents for data reporting were obtained from the undergraduate students and faculty members who met the inclusion criteria and agreed to participate. They were also informed of their right to confidentiality and to withdraw from the study at any point in time without penalty. The consent form was written in Myanmar and explained by our local coordinator.

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Declaration of competing interest

The authors declare that they have no conflicts of interest associated with this study.

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References

- Abedi, A.A., Ogwal, D.S., Pintye, J., Nabirye, R.C., Hagopian, A., 2019. Baccalaureate prepared nurses as the new entry-level nursing cadre in Uganda: a qualitative study of BSN student and faculty perspectives in two universities. *Nurse Educ. Today* 76, 131–136. <https://doi.org/10.1016/j.nedt.2019.01.023>.
- Azad, A., Min, J., Syed, S., Anderson, S., 2020. Continued nursing education in low-income and middle-income countries: a narrative synthesis. *BMJ Glob. Health* 5 (2), e001981. <https://doi.org/10.1136/bmjgh-2019-001981>.
- Bell, S.A., Rominski, S., Bam, V., Donkor, E., Lori, J., 2013. An analysis of nursing education in Ghana: priorities for scaling-up the nursing workforce. *Nurs Health Sci* 15 (2), 244–249. <https://doi.org/10.1111/nhs.12026>.
- Bluestone, J., Johnson, P., Fullerton, J., Carr, C., Alderman, J., BonTempo, J., 2013. Effective in-service training design and delivery: evidence from an integrative literature review. *Hum. Resour. Health* 11 (1), 51. <https://doi.org/10.1186/1478-4491-11-51>.
- Button, D., Harrington, A., Belan, I., 2014. E-learning and information communication technology (ICT) in nursing education: a review of the literature. *Nurse Educ. Today* 34 (10), 1311–1323. <https://doi.org/10.1016/j.nedt.2013.05.002>.
- Cancedda, C., Farmer, P.E., Kerry, V., Nuthulaganti, T., Scott, K.W., Goosby, E., Binagwaho, A., 2015. Maximizing the impact of training initiatives for health professionals in low-income countries: frameworks, challenges, and best practices. *PLoS Med.* 12 (6), e1001840 <https://doi.org/10.1371/journal.pmed.1001840>.

- Ching, S.S.Y., Cheung, K., Hegney, D., Rees, C.S., 2020. Stressors and coping of nursing students in clinical placement: a qualitative study contextualizing their resilience and burnout. *Nurse Educ. Pract.* 42, 102690 <https://doi.org/10.1016/j.nepr.2019.102690>.
- <collab> Department of Population Immigration and Population</collab>, Ministry of Labour, 2016. The 2014 Myanmar Population and Housing Census THEMATIC REPORT ON MATERNAL MORTALITY Census Report Volume 4-C. Retrieved October 3, 2021 from. https://dop.gov.mm/sites/dop.gov.mm/files/publication_doc/s/4c_maternal_mortality_0.pdf.
- Creswell, J.W., Plano Clark, V.L., 2011. In: *Designing and Conducting Mixed Methods Research*, 2nd ed. Sage Publication, Inc, United Kingdom, p. 211.
- Creswell, J.W., Plano Clark, V.L., 2018. In: *Designing and Conducting Mixed Methods Research*, 3rd ed. Sage Publication, Inc., United Kingdom, p. 176.
- Hornvted, M.T., Nordsteien, A., Fermann, T., Severinsson, E., 2018. Strategies for teaching evidence-based practice in nursing education: a thematic literature review. *BMC Med. Educ.* 18 (1), 172. <https://doi.org/10.1186/s12909-018-1278-z>.
- Im, S., Jang, S.J., 2019. Effects of a clinical practicum using flipped learning among undergraduate nursing students. *J. Nurs. Educ.* 58 (6), 354–356. <https://doi.org/10.3928/01484834-20190521-06>.
- Ingraham, K.C., Davidson, S.J., Yonge, O., 2018. Student-faculty relationships and its impact on academic outcomes. *Nurse Educ. Today* 71, 17–21. <https://doi.org/10.1016/j.nedt.2018.08.021>.
- Kamphinda, S., Chilemba, E.B., 2019. Clinical supervision and support: perspectives of undergraduate nursing students on their clinical learning environment in Malawi. *Curationis* 42 (1), a1812. <https://doi.org/10.4102/curationis.v42i1.1812>.
- Koto-Shimada, K., Yanagisawa, S., Boonyanurak, P., Fujita, N., 2016. Building the capacity of nursing professionals in Cambodia: insights from a bridging programme for faculty development. *Int. J. Nurs. Pract.* 22, 22–30. <https://doi.org/10.1111/ijn.12436>.
- Lopez, V., Yobas, P., Chow, Y.L., Shorey, S., 2018. Does building resilience in undergraduate nursing students happen through clinical placements? A qualitative study. *Nurse Educ. Today* 67, 1–5. <https://doi.org/10.1016/j.nedt.2018.04.020>.
- McCarthy, B., Trace, A., O'Donovan, M., Brady-Nevin, C., Murphy, M., O'Shea, M., O'Regan, P., 2018. Nursing and midwifery students' stress and coping during their undergraduate education programmes: an integrative review. *Nurse Educ. Today* 61, 197–209. <https://doi.org/10.1016/j.nedt.2017.11.029>.
- Ministry of Health and Sports, 2016. Myanmar National Health Plan (2017–2021): the republic of the Union of Myanmar; 2016. Retrieved October 3, 2021, from. [http://www.mohs.gov.mm/ckfinder/connector?command=Proxy&lang=en&type=Main¤tFolder=/NHP/&hash=a6a1c319429b7abc0a8e21dc137ab33930842cf5&fileName=NHP+\(2017-2021\)_ENG.pdf](http://www.mohs.gov.mm/ckfinder/connector?command=Proxy&lang=en&type=Main¤tFolder=/NHP/&hash=a6a1c319429b7abc0a8e21dc137ab33930842cf5&fileName=NHP+(2017-2021)_ENG.pdf).
- Myanmar Nurse and Midwife Council, 2015. Guideline on “Standards and Criteria for Accreditation of Nursing and Midwifery Education Program in Myanmar”. Retrieved December 14, 2018, from. <http://www.mnmmyanmar.org/assets/Final-draft-MNM-C-Accreditation.pdf>.
- Nang Mie Mie, H., Reyer, J.A., Yamamoto, E., Yoshida, Y., Hamajima, N., 2016. Trends in attrition among medical teaching staff at universities in Myanmar 2009-2013. *Nagoya Journal of Medical Science* 78 (1), 27–40.
- Nataraja, R.M., Oo, Y.M., Ljuhar, D., Webb, N.R., Pacilli, M., Win, N.N., Aye, A., 2020. Overview of a novel paediatric surgical simulation-based medical education programme in Myanmar. *ANZ Journal of Surgery*. <https://doi.org/10.1111/ans.16200>. Global Health.
- Network, National Health, 2016. Programme of Health Reforms: A Roadmap Towards Universal Health Coverage in Myanmar (2016-2030) Version 1.0. Retrieved October 3, 2021, from. https://www.themimu.info/sites/themimu.info/files/assessment_file_attachments/programme_of_health_reforms_-_version_1_0_-_2016_03_29.pdf.
- Oo, Yin Mar, Nataraja, R.M., 2020. The application of simulation-based medical education in low- and middle-income countries; the Myanmar experience. *Semin. Pediatr. Surg.* 29 (2), 150910 <https://doi.org/10.1016/j.sempedsurg.2020.150910>. Epub 2020 Apr 3 PMID: 32423594.
- Oprescu, F., McAllister, M., Duncan, D., Jones, C., 2017. Professional development needs of nurse educators. An Australian case study. *Nurse Educ. Pract.* 27, 165–168. <https://doi.org/10.1016/j.nedt.2017.07.004>.
- Sharma, B., Hildingsson, I., Johansson, E., Christensson, K., 2018. Self-assessed confidence of students on selected midwifery skills: comparing diploma and bachelors programmes in one province of India. *Midwifery* 67, 12–17. <https://doi.org/10.1016/j.midw.2018.08.015>.
- Tan, K., Chong, M.C., Subramaniam, P., Wong, L.P., 2018. The effectiveness of outcome based education on the competencies of nursing students: a systematic review. *Nurse Educ. Today* 64, 180–189. <https://doi.org/10.1016/j.nedt.2017.12.030>. Epub 2018 Feb 5 PMID: 29500999.
- Vaughn, S., Schumm, J.S., Sinagub, J.M., 1996. *Focus Group Interviews in Education and Psychology*. In: Sage Publication Inc, United Kingdom, pp. 97–117.
- Who, 2009. Global standards for the initial education of professional nurses and midwives. Retrieved December 14, 2018, from. http://apps.who.int/iris/bitstream/handle/10665/44100/WHO_HRH_HPN_08.6_eng.pdf;jsessionid=9CAAB4FCF2315091C41DFDB09D9AAD60?sequence=1.
- WHO, 2016. Health workforce requirements for universal health coverage and the sustainable development goals. Retrieved on October 9, 2021, from. In: *Human Resources for Health Observer*, 17. World Health Organization, Geneva. <https://apps.who.int/iris/handle/10665/250330>.

Who, 2020. State of the world nursing 2020. Retrieved on October 9, 2021, from. <https://apps.who.int/nhwportal/Sown/Files?name=MMR&lang=EN>.
World Bank Group, 2021. Myanmar. Retrieved on October 9, 2021, from. <https://data.worldbank.org/country/myanmar>.

Younas, A., Zeb, H., Aziz, S.B., Sana, S., Albert, J.S., Khan, I.U., Inayat, S., Khan, F.H., Rasheed, S.P., 2019. Perceived challenges of nurse educators while teaching undergraduate nursing students in Pakistan: an exploratory mixed-methods study. *Nurse Educ. Today* 81, 39–48. <https://doi.org/10.1016/j.nedt.2019.07.002>.