

Needs Assessment for the Development of a Leadership Course for Midwives: a Qualitative Study

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ABSTRACT

Background and Objective. Midwives play a vital role in the attainment of Sustainable Development Goals related to the health and well-being of mothers and newborns. Strengthening the leadership and management capacities of midwives is pivotal to the fulfillment of their mandate beyond assisting in birth and delivery. The study explores the perspectives of midwives about professional education and practice, which are aimed to serve as bases for developing a leadership course for midwives to enhance their roles in public health.

Methods. The study employed a descriptive-qualitative design. Using a semi-structured questionnaire, online focus group discussions (FGDs) with midwives from the academe, professional organization, and clinical practice were conducted. Through directed content analysis, the gathered information was analyzed to include the participants' insights on *midwifery competencies, teaching methods and assessment strategies, supplementary courses and training, and factors affecting midwifery practice.*

Results. A total of eleven (11) participants contributed to the FGDs, which included midwives from the academe (dean, faculty), professional organization (board member of the Professional Regulation Commission), and clinical practice (public and private institutions). Notably, participants shared their perspectives regarding the similarities/differences in the terminal competencies of midwifery programs. The demands of outcomes-based education, coupled by the shift to online learning due to the pandemic, pushed the need for modifications in program delivery for the students. Results highlighted the need for supplementary courses and capacity building on leadership and management, research, and interprofessional collaboration. Midwives shared factors that affect their professional practice, which include insufficient training, inadequate manpower, and differences in expectations/standards in task performance.

Conclusion. The findings indicate the need to develop capacity-building courses for midwives to enhance their contribution towards universal health care. The results of this study also highlight the importance of understanding and improving the competencies of midwives across the building blocks of the health system, which include health service delivery, human resources for health, health information systems, health financing, health governance, and health regulation. Notably, key concepts recommended for the Leadership Development Course for Midwives include: leadership and management, research, and interprofessional collaboration.

Keywords: midwives, leadership, universal health care, Sustainable Development Goals



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INTRODUCTION

Universal healthcare coverage is one of the key targets of the Sustainable Development Goals (SDGs).¹ Hence, the Universal Health Care (UHC) Act of 2019 aimed for every Filipino to access affordable, quality, and available health services suitable to their needs, while also highlighting the importance of primary healthcare.² Physicians, nurses, and midwives, and even community health workers are at the forefront of serving and addressing healthcare needs of individuals, families, and communities. As the main frontliners in the community, midwives are in a strong position to aid in

achieving the health-related SDGs by 2030, including those that impact mothers and newborns. These particularly include SDGs 3 (good health and well-being), 5 (gender equality), and 17 (partnership for the goals). Notably, enhancing the various competencies of midwives is necessary, so they can effectively contribute to the attainment of such goals.

In the Philippines, midwifery practice addresses the basic health needs of mothers and newborns.³ Their primary focus is the supervision and care of women throughout the different stages of pregnancy, labor, and puerperium. Midwives however, are also expected to perform administrative and leadership roles in the community. These include, but are not limited to, implementing health programs, managing barangay health stations, supervising barangay health workers (BHWs), and engaging community members.³ In terms of education, the midwifery course has been a two-year diploma program since 1992.⁴ In 2007, the Bachelor of Science in Midwifery, a four-year course, was established, bringing in more courses for general education, mandated, elective, core and professional courses, and clinical practicum.⁴ Despite these improvements in the educational preparation of midwives, there are still inadequate local development opportunities to enable these health professionals to implement the various public health programs by the Department of Health.⁵

To maximize the contribution of midwives in achieving health for all, they need to be properly equipped to assume various roles. Hence, enhancing the key areas of midwifery practice, such as administration, leadership, management, and care provision, is important. This will provide midwives with the necessary competencies for promoting health, preventing diseases, and addressing health problems in the community. Training programs for health professionals should be responsive to the health systems framework of the country. In reference to UHC, otherwise known as *Kalusugang Pangkalahataan*, six building blocks could serve as guiding frameworks for enhancing the competencies of healthcare providers, including midwives. These include health service delivery, human resources, health information, health financing, leadership and governance, and health regulation.⁶

The present study aimed to explore the perspectives of midwives toward education and professional practice, as well as their perceived needs to improve their capacities. Consequently, the study findings were sought to inform the development of a training program to enable midwives to assume various roles to contribute towards universal health care.

METHODS

Study Design and Sample

The study employed a descriptive-qualitative design, which is based on the premises of naturalistic inquiry. This design aims to provide a fundamental understanding of a phenomenon by directly gathering information from the participants and analyzing their corresponding meanings.⁷

This method is appropriate for this study to understand the perspectives and needs of midwives for developing a leadership course. Using a semi-structured questionnaire, the researchers conducted focus group discussions (FGDs) with the midwives. Participants' eligibility criteria included: 1) licensed midwives, 2) currently involved in midwifery education and/or practice.

Data Collection

This study was deemed exempt from ethics review by the University of the Philippines Manila Research Ethics Board. Prior to data collection, guide questions were prepared, such as: (1) What needed competencies for midwifery graduates require enhancement?; (2) What topics/courses will help enhance the needed competencies?; (3) What parameters and assessment strategies are needed towards achieving the needed competencies?; and (4) What are the perceived barriers to the implementation of the "DOH competency-based standards for midwives"?

Data collection occurred in May 2022. Owing to the restrictions during the COVID-19 pandemic, the FGDs were held online. Hence, invitation letters to prospective participants were sent out via email. The letter contained information about the study and the participation required of them. Once they consented to participate in the interviews, a link to an online platform (Zoom) was provided. As participants appeared for the online FGDs, further explanation of the project information was provided and questions from participants were clarified.

Three FGDs were conducted, and participants were grouped according to their affiliation: academe, professional organization, and clinical practice. A set of house rules were first announced, followed by obtaining participants' consent for the recording of sessions. The participants were placed in breakout rooms according to their affiliation as mentioned above. There were at least two facilitators in each breakout room, with one being the interviewer and the other one as the note taker. The FGDs lasted for 90 to 180 minutes. The FGDs were conducted by faculty researchers from the University of the Philippines College of Nursing, who were involved in designing a leadership development course for midwives. Adequacy of sample size was determined upon data saturation, wherein no new data surfaced from the FGDs. Asking follow-up questions to expand and clarify the answers further helped reach data saturation.⁸

Data Analysis

Trained project assistants transcribed the audio recordings and prepared them for analysis. The researchers examined the transcriptions for correctness. Data were then analyzed via directed content analysis,⁹ wherein the identification and classification of codes were guided by a *priori* template constructed by the researcher. Particularly, the template involved the following categories: midwifery competencies; teaching methods and assessment strategies;

supplementary courses and trainings; and factors affecting midwifery practice.

The researchers served as the main instrument in this inquiry, wherein through careful and skillful asking of questions and probing further into the answers that were provided, led to a thorough understanding of the phenomenon. Reflexivity facilitated examination of assumptions and beliefs as to how they may influence the research process.¹⁰ At least two team members independently read and re-read the transcripts to identify significant statements, provide initial codes, and cluster them according to the proposed data categories. To ensure credibility and dependability of the findings, the analyses were compared and contrasted. For confirmability, the whole project team also reviewed the analysis to agree on the final results. Significant statements are presented in English to enable readers to identify relationship between the data and results, and evaluate their transferability to other settings.

RESULTS

A total of 11 midwives were involved in the FGDs. Majority of them came from the academe (36.4%), either as an administrator or a faculty member. Meanwhile, 27.3% came from relevant professional organizations, including the PRC-Board of Midwifery. The rest of the participants (27.3%) were from clinical practice, including private and public settings.

Based on the analysis of the FGDs, the participants' perspectives and needs toward the following are presented: midwifery competencies, teaching methods and assessment strategies, supplementary courses and training, and factors affecting practice.

Midwifery Competencies

Participants shared the differences and similarities in the terminal competencies of the two midwifery programs - the diploma (two-year course) and bachelor's degree (four-year program). They also suggested topics to be included in midwifery education to enhance the competencies of its graduates.

Similarities and differences in midwives' terminal competencies

While competencies related to family health are similar to both midwifery programs, participants explained that there are notable differences in the expected terminal competencies between graduates of the Bachelor of Science in Midwifery and the Diploma in Midwifery. Particularly, leadership and management courses are lacking in the diploma program:

"Upon checking the curriculum of schools offering diploma of midwifery, there are no management or leadership courses offered, instead they are being offered in BS Midwifery." (Academe)

"We do not have enough topics for midwifery management. For diploma of midwifery, we only have one subject that tackles on the midwifery management." (Academe)

Suggested courses and topics for inclusion in midwifery education

Participants also discussed topics that are not included in either of the programs. These include management and supervision, jurisprudence, data management, health informatics, midwifery entrepreneurship, community organizing and community development, professional development, research, therapeutics, and interprofessional collaboration. Participants believed that these topics should be included in the programs to enhance the readiness of midwifery graduates to contribute to public health.

"It would be good to include the integration of COCD (community organizing and community development) in schools." (Academe)

"...emphasis on the collaboration of midwives with professionals working in the rural health unit should be included in the curriculum." (Academe)

"...more on computer literacy, health informatics, these are the common problems encountered by midwives in actual practice." (Professional organization)

Teaching Methods and Assessment Strategies

Due to the social restrictions associated with the COVID-19 pandemic, participants shared the potential and challenges of delivering courses online in midwifery education. They also shared the common methods of evaluating their competencies, with the shift towards outcomes-based education.

Challenges related to shift to online classes

The pandemic ushered in new teaching strategies, particularly online learning. Educator participants shared having exhausted means to facilitate the students' learning experience, despite the fact that they were not prepared for online classes. It was difficult to conduct the practicum because of the limited to no face-to-face policy. As one participant explained:

"...the teaching strategies are online, we cannot do face-to-face classes, hence the related learning experiences are compromised." (Academe)

Midwifery education has also refocused towards outcomes-based education, compared to the previous competency-based program:

"...reminder that we focus on an outcome-based curriculum rather than a competency-based curriculum..." (Academe)

Modifications in the assessment of students' competencies

While the parameters for competency evaluation remained the same, the assessment methods posed some difficulties since face-to-face interactions were limited:

"The parameter for assessment are still the same but the strategy for assessment, that is where the difficulty is." (Academe)

Given these limitations, participants explored other strategies to ensure that the students' competencies are appropriately assessed. These include online examinations involving more analytical and problem-solving skills and case scenarios requiring critical thinking and decision-making competencies.

Since midwifery involves performing health-related procedures, reviewing the students' skills checklists via return demonstration was still necessary. To facilitate this, a limited number of students were scheduled to report to school for the return demonstrations. Meanwhile, their clinical practicum were facilitated in their schools with the aid of simulation:

"We ask students to come to school to have the return demonstration in the laboratory which is observed and rated by the faculty." (Academe)

"Currently we have tried to ask the student to come and do their clinical practicum. We provide them with a simulation...including a checklist for the skills and procedures that have to be done properly..." (Academe)

Supplementary courses and trainings

Certification courses for midwives are provided by the Professional Regulation Commission to ensure that the programs are relevant and meet the required standards. Nonetheless, participants explained that additional training should be provided to the graduates of two midwifery programs, since both are expected to provide the same health services to the people. They highlighted the importance of competencies in leadership and management, research, and interprofessional collaboration.

Leadership and management

Midwives performed managerial and leadership roles in communities, as they supervise BHWs and lead several health programs at the grassroots level. However, they noted that some midwives, specifically diploma-course graduates, might be unprepared for such roles. Hence, they require further training:

"...diploma courses in midwifery are quite lacking in leadership and management courses..." (Clinical Practice)

"...diploma midwifery graduates are also expected to be leaders, but they need to undergo a lot of trainings first to be prepared." (Clinical Practice)

Notably, midwives are the frontliners in the field, and they encounter various kinds of people - from patients, families, colleagues, and subordinates - whom they might be confronted with difficult intersections. Hence, midwives need to be able to handle conflicts and manage stressful situations:

"...they (midwives) need to learn conflict management, how to manage differences." (Clinical Practice)

It is not uncommon for midwives to meet situations requiring knowledge of the law. In their everyday practice, they should know the bounds of their practice and adhere to such limits:

"...maybe...include legalities on how the midwife can protect themselves and how they can act when legalities come in..." (Clinical Practice)

Research

Most participants identified research as a vital area that midwives should be trained on. Participants thought that innovative practice could be facilitated through research if midwives were knowledgeable and skillful in the research process. They also stressed that since midwives are handling data in the community, they should receive training in data management. Midwives should be able to analyze data and synthesize reports:

"...they will only submit reports but they do not know how to analyze the reports...they should be taught how to analyze reports..." (Clinical Practice)

Interprofessional Collaboration

With the increasing trend towards collaborative practice, midwives should be enabled to work with other healthcare professionals. By enhancing their knowledge and skills in interprofessional collaboration, midwives are hoped to contribute to patient safety and uphold safe and quality care. This competency goes hand-in-hand with leadership, management, and research:

"...they need training on data analysis, research, communication, documentation, and collaboration. How to be more assertive that they are in charge of the unit...leadership and management in different scenarios, such as disasters, calamities, and emergencies." (Professional Organization)

Factors affecting midwifery practice

Insufficient training

In-service training is essential to enhance and update the knowledge and skills of midwives so that their practice is relevant and safe for the clientele. However, participants claimed that not all midwives, including those in the community setting and government service, receive sufficient training. Among others, participants highlighted that basic emergency obstetric and neonatal care (BEMONC) training is essential and should be provided to all midwives:

“...there are things that we need to do but are not equipped for, like BEMONC training... there are only a few midwives who had BEMONC training.” (Clinical Practice)

“...there are trainings where only one midwife is allowed to attend, for training, everyone should be able to undergo such.” (Clinical Practice)

Inadequate manpower

With the understanding that adequate manpower is crucial to delivering health services, participants shared that staff shortages are common in the communities or institutions they work with. This causes increased workload burden and demands for multi-tasking, which could compromise both staff competency and patient care:

“...there is always a shortage of staff... so it's difficult to provide the best care possible for everyone because we have to do so much while we're understaffed.” (Clinical Practice)

Differences in expectations and standards in task performance

The roles and responsibilities of midwives may vary across clinical and community settings. Nonetheless, participants believed there should be standardization of activities that midwives are trained/expected to perform, including procedures they are not allowed to accomplish. The scope of practice should be clear for all midwives and institutions that employ them:

“...it is good that there is uniformity in the competencies for each level of midwives that allow a basis for evaluation...it would be difficult if the standards are varying.” (Clinical Practice)

In relation to this, midwives should be included in the decision-making and development of their training programs. However, other professionals might have different expectations or misunderstanding of the roles and tasks of midwives. These could serve as impediments in establishing the standard task performance for midwives and their roles in collaborative practice.

“...it is good that there are meetings in which midwives are included. Some professionals are unsure what are expected of midwives.” (Clinical Practice)

“...communication skills should be developed because they are helpful in collaboration, in which midwives are lacking.” (Clinical Practice)

DISCUSSION

The findings of this study indicate the need to develop programs that will enhance the capacities of midwives

toward realizing their roles in universal health care. Notably, participants shared their perceived challenges and needs in the preparation of professional midwives, as there are differences in the terminal competencies of their graduates despite the various roles they are expected to perform in the field. Moreover, they underlined the need for additional trainings for licensed midwives that are aimed to build their capacities on leadership and management, research, and interprofessional collaboration.

These results are reflective of the findings in other studies. In a study conducted by Canila et al.,⁵ there is still an existing gap between the competencies of graduates of the Diploma in Midwifery and Bachelor of Science in Midwifery. The Diploma Course in Midwifery is mainly expected to provide care for the mother and the child while also being able to perform primary health care services in the community. Meanwhile, the Bachelor of Science in Midwifery graduates are expected to provide supervisory and managerial functions.¹¹ BSM graduates are expected to be supervisors, health facility administrators, researchers, and health program managers. Despite these differences in their terminal competencies, a midwife may still assume multiple tasks that may be outside of their trained capacities, especially in community settings.

Participants also shared the challenges in facilitating midwifery education via online platforms. Accordingly, the prescribed lockdown in different countries due to the COVID-19 pandemic has also led to dramatic changes in the nature of health professions education. Post-pandemic, these changes are expected to continue with the increasing movement towards flexible learning. Luyben et al.¹² described that theoretical components of learning were done via online platforms due to rapid digitalization of the curriculum. As for the clinical components, students in the clinical settings were asked to halt activities, some were still allowed but only a few instances. The process of assessing students has also become a challenge to educators.¹² Online clinical examinations were done, which consisted of essays and short answer questions that required students to analyze, think critically, and synthesize ideas. Hence, midwifery education needs to be responsive to these challenges, and increasing the capacities of educators to facilitate flexible learning arrangements is vital.

Despite the midwives' critical role in the health system, there were only limited progressive career pathways. There have been no capability development programs on systematic competency development related to health systems, program management, policy, and capability development on program management designs for midwives.^{5,13} This was also seen in a study conducted by Bremnes et al.¹⁴ in Tanzania, where midwives reported having few training/updates in their courses. Our study findings imply that more access to training and possibilities for career advancement would motivate midwives to perform better at work. Meanwhile, a study in Indonesia¹⁵ described the training and development needs of midwives, which include data collection, management,

digitization of records and data, analysis of existing data, research, collaboration with colleagues and other healthcare professionals. Furthermore, courses on management and leadership, and communication skills were found to be beneficial to midwife managers.¹⁵

Notably, participants observed that some policies and regulations of midwifery practice are not cohesive. In particular, standards of practice were program-based and scattered across several policies.⁵ It was further described in the study that the same salary grade still applied for midwives, promulgated in the year 2000, despite their expanded workload. Bremnes et al.¹⁴ found that shortages of resources and personnel have led to excessive workload, which resulted in difficulties in providing quality care. Increasing the number of staff was seen to be one of the most important factors for improving working conditions. Shared decision-making and collaboration with other healthcare professionals were also found to influence a midwife's clinical decision making.¹⁶

The identified training needs of midwives from this research could serve as valuable entry points for contributing to the development of midwives who are competent care providers, leaders, and collaborators. Cognizant of the roles of midwives in UHC, the study findings can be grouped to reflect the six building blocks of the health system, which include health service delivery, human resources, health information, health financing, leadership and governance, and health regulation.^{6,17} Similarly, the competency-based assessment tool for midwives, which is used for the Midwife Certification Program in the country,¹¹ shares six building blocks closely related to this health systems framework. Hence, these could serve as the basis for the topics to be included in the proposed Leadership Development Course for Midwives (LDCM). Table 1 details the roles and responsibilities of midwives under each building block.

Majority of the problems identified in the study were related to the building block of human resources for health (HRH) and health information systems. HRH refer to the clinical and non-clinical staff responsible for health interventions and services, and are arguably the most important input in the health system.¹⁸ Improvement of health service coverage, provision of highest attainable standards of health are dependent on the availability, accessibility, acceptability, and quality of health workers. The mere

availability of health workers is not sufficient, as they require equitable distribution, updated competencies, motivation and empowerment, and support from the health system, so they can provide effective service coverage.¹⁹ However, developing countries like the Philippines, face varying degrees of difficulties in education, deployment, retention, and performance of the workforce. Migrating health workers also becomes an issue in the healthcare system. The movement of health care professionals follows the migration pattern of movement toward urban areas or more successful countries causing further maldistribution of health services to far-flung areas.¹⁹

The health information system refers to a digital system that is designed to manage healthcare data, which involves collection, storage, management, and transmission of medical records of patients.²⁰ It is envisioned to become an essential part of the healthcare delivery system. It will harmonize and integrate health data from different electronic medical information from one health facility to another.²¹ However, the health information management in the country still faces critical challenges with regard to integrating and harmonizing these data. There is still inadequate structure on information and communication technology for the health sector.²² The implementation of a health information system would require health facilities to have access to the internet and computers necessary for data transmission even among geographically isolated areas. The transition from an all paper-based documentation of health facilities to an all digital-based system would require some degree of adjustment for health workers.

The proposed components of the LDCM, as reflected in the six building blocks of the health system, is aimed to capacitate more midwives towards providing quality care to individuals, families, population groups, and communities; leading and managing health program implementation in various settings; and collaborate with other health professionals and stakeholders towards achieving UHC.

CONCLUSION

Through this study, selected midwives from various sectors shared their perspectives on midwifery education and practice, including their perceived needs for improving the

Table 1. Roles and Responsibilities of Midwives Based on the Health System's Six Building Blocks in UHC

Health Service Delivery	Human Resources for Health	Health Information	Health Financing	Leadership and Governance	Health Regulation
<ul style="list-style-type: none"> • BEMONC • Protocols Update • Therapeutics • Communication skills • Patient Safety • Referral System 	<ul style="list-style-type: none"> • Community Organizing and Development • Adequate Staffing • Communication skills 	<ul style="list-style-type: none"> • Data Management • Health Informatics • Research • Data Analysis 	<ul style="list-style-type: none"> • Midwifery Entrepreneurship 	<ul style="list-style-type: none"> • Administrative Management • Supervision • Professional Development • Conflict Management • Interprofessional Collaboration • Community Organizing and Development 	<ul style="list-style-type: none"> • Jurisprudence • Legal Knowledge

discipline. In particular, the findings imply the need to match the competencies of midwifery graduates to what they are expected to perform on the ground, and to enable educators to better deliver outcomes-based education in a flexible learning environment. Other factors, such as inadequate manpower and differences in scope/standard of practice, should be addressed collaboratively as they could impair the capacities of midwives to maximize their contribution to UHC. Participants highlighted the importance of empowering professional midwives in leadership and management, research, and interprofessional collaboration.

The challenges and needs expressed by the study participants are reflective of the health systems' building blocks, such as health service delivery, human resources for health, health information systems, health financing, health governance, and health regulation. These could serve as guideposts in the Leadership Development Course for Midwives and other potential training programs for health professionals.

Statement of Authorship

All authors certified fulfillment of ICMJE authorship criteria.

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REFERENCES

- United Nations Department of Economic and Social Affairs. The 17 goals [Internet]. 2012 [cited 2023 May]. Available from: <https://sdgs.un.org/goals>
- House of Representatives-Republic of the Philippines. Universal Health Care Act of 2019 [Internet]. 2019 [cited 2023 May]. Available from: <https://www.officialgazette.gov.ph/downloads/2019/02feb/20190220-RA-11223-RRD.pdf>
- World Health Organization. Midwifery education and care [Internet]. 2023 [cited 2023 May]. Available from: <https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/maternal-health/midwifery>
- Professional Regulation Commission-Philippines. Midwifery [Internet]. 2023 [cited 2023 May]. Available from: <https://www.prc.gov.ph/midwifery>
- Canila CC, Hipolito JH. Assessing the state of professional practice of midwifery in the Philippines. *Phil J Health Res Dev*. 2018;22(2):1-11.
- Romualdez Jr. A, Lasco PG, Lim BA. Universal health care in the Philippines. *J ASEAN Fed Endocr Soc*. 2012;27(2):180-3.
- Sandelowski M. Whatever happened to qualitative description? *Res Nurs Health*. 2000 Aug;23(4):334-40. doi: 10.1002/1098-240x(200008)23:4<334::aid-nur9>3.0.co;2-g. PMID: 10940958.
- Patton MQ. *Qualitative evaluation and research methods*, 3rd ed. Thousand Oaks: Sage Publications; 2002. pp.101-106.
- Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res*. 2005 Nov;15(9):1277-88. doi: 10.1177/1049732305276687. PMID: 16204405.
- Lazard L, McAvoy J. Doing reflexivity in psychological research: What's the point? what's the practice? *Qual Res Psychol*. 2020;17(2): 159-77. doi:10.1080/14780887.2017.1400144.
- Development Academy of the Philippines. Competency-based assessment process and tools for midwives: midwife certification program [Internet]. 2015 [cited 2023 May]. Available from: <https://www.dap.edu.ph/wp-content/uploads/2015/09/2015-PROJECTS-FOR-NTN2.pdf>
- Luyben A, Fleming V, Vermeulen J. Midwifery education in COVID-19- time: challenges and opportunities. *Midwifery*. 2020 Oct;89:102776. doi: 10.1016/j.midw.2020.102776. PMID: 32526596; PMCID: PMC7263260.
- Hewitt L, Dahlen HG, Hartz DL, Dadich A. Leadership and management in midwifery-led continuity of care models: A thematic and lexical analysis of a scoping review. *Midwifery*. 2021 Jul;98: 102986. doi: 10.1016/j.midw.2021.102986. PMID: 33774389.
- Bremnes HS, Wiig ÅK, Abeid M, Darj E. Challenges in day-to-day midwifery practice; a qualitative study from a regional referral hospital in Dar es Salaam, Tanzania. *Glob Health Action*. 2018;11(1): 1453333. doi: 10.1080/16549716.2018.1453333. PMID: 29621933; PMCID: PMC5912436.
- Hennessy D, Hicks C, Koesno H. The training and development needs of midwives in Indonesia: paper 2 of 3. *Hum Resour Health*. 2006 Apr 19;4:9. doi: 10.1186/1478-4491-4-9. PMID: 16623954; PMCID: PMC1481611.
- Daemers DOA, van Limbeek EBM, Wijnen HAA, Nieuwenhuijze MJ, de Vries RG. Factors influencing the clinical decision-making of midwives: a qualitative study. *BMC Pregnancy Childbirth*. 2017 Oct 6;17(1):345. doi: 10.1186/s12884-017-1511-5. PMID: 28985725; PMCID: PMC5639579.
- World Health Organization. Monitoring the building blocks of health systems: A handbook of indicators and their measurement strategies [Internet]. 2010 [cited 2023 May]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/258734/9789241564052-eng.pdf>
- Kabene SM, Orchard C, Howard JM, Soriano MA, Leduc R. The importance of human resources management in health care: a global context. *Hum Resour Health*. 2006 Jul 27;4:20. doi: 10.1186/1478-4491-4-20. PMID: 16872531; PMCID: PMC1552082.
- World Health Organization. Global strategy on human resources for health: Workforce 2030 [Internet]. 2016 [cited 2023 May]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/250368/9789241511131-eng.pdf>
- Pan American Health Organization. Health information systems [Internet]. 2023 [cited 2023 May]. Available from: <https://www.paho.org/en/topics/health-information-systems>
- eHealth. Overview. 2023 [cited 2023 May]. Available from: <http://ehealth.doh.gov.ph/index.php/phic/overview/40-phic>
- World Health Organization. The health systems review [Internet]. 2018 [cited 2023 May]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/274579/9789290226734-eng.pdf>