

Development of accreditation standards for midwifery clinical education in Iran

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Abstract

Background

Improving the quality of clinical education leads to the training of competent and professional staff. Therefore, it is necessary to pay attention to effective clinical education standards. The present study was designed to develop accreditation standards for midwifery clinical education in Iran.

Methods

This study was performed in two phases. In the first phase, accreditation standards for midwifery clinical education in the United Kingdom, the United States, Australia and the International Confederation of Midwives (ICM) were thoroughly examined through a narrative review study in 2021. In the second phase, a qualitative study with a directed content analysis approach was conducted. The axes extracted from the first phase were used as a framework and guide in this phase. The study population consisted of senior midwifery managers, faculty members of midwifery departments with a background in clinical teaching, clinical midwifery instructors, and final year undergraduate midwifery students (n = 15). Participants were selected by purposive sampling method, and data collection was continued until data saturation.

Results

The results of extracting the standards and accreditation criteria of midwifery schools from the review study were divided into 6 areas: Mission and goals; Curricula; Clinical instructors; Students, Clinical setting; and Assessment. These axes were used as a guide in formulating questions and conducting semi-structured interviews in the second phase. Data analysis in this phase led to the extraction of 131 codes, which were divided into 35 sub-subcategories, 15 sub-categories and 6 main categories.

Conclusion

If implemented, integrated and localized standards of clinical midwifery education in Iran is promising in improving the quality of clinical education programs.

Introduction

Clinical education is a dynamic process in which students gradually gain experience by attending the patient's bedside and putting into practice the concepts they have already learned in interaction with the instructor and the clinical setting (1). The quality of community care depends on the quality of education in the clinical environment, and quality clinical education leads to graduation of more successful and competent students (2).

Understanding the problems of clinical education is the first step to improve its quality (3). Various studies have been conducted to evaluate the quality of clinical education, and in most of these studies, the quality of clinical education has not had a desirable level (4, 5). Given the paramount importance of clinical midwifery education in the health of the community, low quality clinical midwifery education can act as an obstacle to improving the quality of care in the community (6).

Regulatory agencies must ensure that institutions meet the necessary qualifications for quality education, and this entails accreditation of educational programs (7), which is regarded and implemented as an important strategy to improve the quality of midwifery care (8).

Accreditation which is based on a set of standards is one of the options used in assessment. Accreditation in healthcare settings is a common strategy to improve health care standards (9) and is one of the most important methods of quality assurance and improvement in medical education (10). Simply put, accreditation refers to the process of quality control and assurance in higher education that allows an institution or its programs to be reviewed and certified to ensure that the required standards are met so that the institution is recognized and certified. (11). An accreditation system of educational programs aims to improve the academic performance and educational programs of an educational institution and then to increase the quality of care in its graduates (12, 13). By improving the learning environment, accreditation can also enhance the students' acquisition of skills in that environment (14). Implementing a credible, comprehensive and effective accreditation program has been reported to be one way to ensure quality and responsive midwifery education (15). In accreditation, the development of standards is essential because these standards are the actual guidelines for universities to comply with. Not only are standards the basis for judgment but they are also formulated on the basis of rules and according to the opinion of competent individuals. Therefore, standards can be considered as a measure or scale for judgment (16). How to achieve standards varies from country to country, and there is no unique way to set standards. In compiling standards for an educational setting, it is smart to rely on scientific findings, experts' opinions, the philosophy and goals of the educational system, facilities of the educational system, programs and policies of the educational system, and the laws and regulations governing the country (17). In order for them to be enforceable, standards must be in accordance with the political system, executive structure, and legal duties of higher education institutions in each country. For this reason, accreditation standards can in no way be a translation of the standards of other countries (18). Among pioneers in midwifery education, the efforts of the United States (19), Australia (20) and the United Kingdom (21) in developing midwifery education standards are noteworthy. The ICM has also set global standards for midwifery education to provide optimal care.

Competent midwifery graduates capable of providing quality midwifery care can be trained by managing and organizing midwifery learning environments, effective governance, adequate educational resources, and establishment and expansion of clinical simulation centers for continuous education. However, midwifery institutions in many low- and middle-income countries face many challenges in providing quality learning and teaching activities (22). Although worldwide educational and international standards

for the quality of midwifery education have been defined, a wide variety in the type and nature of midwifery education programs is readily observed in different cultures (8).

Improving the quality of clinical education leads to the training of competent and expert personnel (23). Therefore, it is necessary to pay serious attention to the standards and criteria of effective clinical education in midwifery accreditation. The first step in establishing accredited clinical midwifery education is to develop accreditation standards tailored to midwifery education. In Iran, no written standards have ever been announced for this purpose, and the need to develop such standards in accordance with Iran's educational and executive conditions as well as the cultural and social structure of this country is hardly disputable. Therefore, the members of the present research team took advantage of the global achievements and experiences of Iranian experts in this field to develop accreditation standards for midwifery clinical education in Iran.

Material & Methods

This study was performed in two phases. In the first phase, the accreditation standards of midwifery clinical education were examined through a narrative review study in 2021. For this purpose, we reviewed the literature on accreditation and its methods as well as the status of accreditation standards of midwifery education at an international level. The United Kingdom, the United States, Australia, and the ICM, which are pioneers in the field of accreditation, were selected as targets.

Inclusion criteria were program accreditation standards for midwifery under graduated, English scholarly articles on this topic, and valid related documents. Publications such letters to editor, books, hospital accreditation standards, and postgraduate accreditation standards were excluded from the study.

In the second phase, a qualitative study was conducted with a directed content analysis approach. In this phase of research, the axes extracted from the first phase (narrative review study) were used as a framework.

The research population consisted of board members of the midwifery department, policy makers and senior managers of midwifery in Iran, faculty members of midwifery departments with clinical teaching experience, clinical midwifery instructors, and final year undergraduate midwifery students. Participants were selected by purposive sampling method, and data collection was continued until saturation (24). Conscious personal and written consent was obtained from all participants.

Data were collected through semi-structured individual interviews. Interview questions were prepared and used by the interviewer in a semi-structured manner based on the interview process in six areas of: Mission and goals; Curriculum; Clinical instructors; Students, Clinical setting; and Assessment. In order to delve into the depth of the participants' experience and also to clarify their answers, reflective and exploratory questions such as: "Why?", "How?", "Can you explain more?", and "Can you give an example?" were raised. After obtaining consent from the participants, the interviews were recorded and transcribed verbatim for analysis (25). Non-verbal data such as tone of voice and facial expressions were

recorded on a sheet stating the time and place of the interview. In order to increase the accuracy of the collected data, the researcher listened to the interviews repeatedly. In order to analyze the data, the method of directed (inductive) content analysis presented by Elo & Kyngäs was used. Content analysis involves three phases of preparation, organization, and reporting. (26) In the preparation phase, actions were taken to select the participants and prepare the conditions for the interview and questions. The organization phase included interviews and their precise and flexible coding. In this phase, an attempt was made to extract all the concepts by reviewing and re-coding the research data. At the reporting phase, the results of the previous phases were summarized and prepared for publication after editing. Data analysis was started by repeatedly reading the full transcription of the interview to gain a general understanding of the subject of accreditation standards in midwifery clinical education.

Afterwards, the whole transcription of the interview was read verbatim and accurately. Based on their semantic similarity, the codes were placed in pre-identified categories, and depending on the breadth and logical relationship of the data in categories, sub-categories were formed. Guba and Lincoln's criteria were also used to evaluate and ensure the accuracy and validity of the findings (27). In order to make sure of trustworthiness, a sample of the interview transcription was reviewed and verified by participants including faculty members and a graduate midwifery student (member check). To confirm credibility of the study, the process of data analysis was examined by two researchers in the field of midwifery with a background in qualitative research (Peer check) and the researchers had prolonged engagement in the research topic (Prolonged engagement). Transferability of data was achieved through maximum variety in participants and detailed description of the study for the sake of transparency of the study. As far as dependability of the study was concerned, continuous comparative analysis of data and triangulation of data sources through interviews with key and subsidiary participants were performed. Finally, to ensure confirmability of the study, the documents were recorded over time. In the process of coding and categorization, methodological consistency, external check, and peer debriefing were taken into account.

The study was approved from Ahvaz Jundishapur University of Medical Sciences in the south of Iran (IR.AJUMS.REC.1400.126). In order to comply with ethical principles in research, informed consent was obtained from the participants in the research, and they were assured of the confidentiality of information and accurate presentation of data.

Results

First phase

In the review study, the documents related to the accreditation standards of midwifery education in the United States, the United Kingdom, Australia and the ICM were examined (Table 1).

The results show that the standards of accreditation of midwifery education are different in different countries. For a comparison of different domains, accreditation standards in selected countries are presented in Table 1.

The standards and criteria of the selected countries were thoroughly reviewed by the research team several times. Based on this, a set of criteria and sub-criteria of each country was obtained to be used for comparison. The final review was performed by the research team through repeated examinations of clinical accreditation standards in midwifery education in the selected countries. Finally, after making the necessary corrections and modifying categorization according to the midwifery curriculum and job description of midwives in Iran, the main categories (axes) were extracted. The results of extracting accreditation standards and criteria for midwifery schools were divided into 6 areas: Mission and goals; Curricula; Clinical instructors; Students, Clinical setting; and Assessment".

Second phase

Participants in the second phase of the study included members of the Midwifery Board, policy makers and senior managers of midwifery, faculty members of departments of midwifery who had clinical teaching experience, clinical midwifery instructors, and final year undergraduate midwifery students studying at Iranian universities who were selected by purposive sampling (n = 15). The characteristics of the participants in this phase of research are presented in Table 2. Participants ranged in age from 22 to 56 years. There were 3 undergraduate students, 3 postgraduates and 9 doctoral degrees.

The axes extracted from the review study in the first phase were used as a guide in formulating questions and conducting semi-structured interviews in this phase. Interview questions were prepared and posed by the interviewer in a semi-structured manner based on the areas of Mission and goals; Curriculum; Clinical instructors; Students, Clinical setting; and Assessment. Data analysis in this phase led to the extraction of 131 codes, which were divided into 35 sub-subcategories, 15 sub-categories, and 6 main categories (Table 3).

Mission and goals

This category involves creating the desired vision and perspective by managers with the participation of faculty members and related groups. It also includes agreement on the mission and leading goals according to which educational institutions can fulfill their mission and achieve the desired vision. The participants in this study emphasized this category as one of the accreditation standards in midwifery clinical education. This category has the following two sub-categories.

Objectives of clinical education

The participants in the study insisted that the goals of clinical education be based on the curriculum, the needs of the community, and the prevailing culture of that community. "*Clinical midwifery education is valid as far as its goals are correctly defined. I mean, it should be according to the curriculum and the needs of society and should have the right strategy to achieve these goals*" (P10).

The midwives participating in the present study recommended formation of a working group to review the goals of clinical education and, if necessary, modify it as needed. "*We should have a working group to*

review and modify the objectives of clinical education from time to time according to the needs of the community, if necessary” (P8).

Clarity of mission

The participants considered it a basic principle to educate capable students who are diligent in maintaining and promoting the health of the community under different circumstances including crises. *“An academic department should always know that its main mission is to train capable students” (P3).* *“In the midwifery department, we must seek to train students who can demonstrate their unique abilities during critical situations” (P11).*

Curricula

Curriculum, which was appreciably emphasized by the participants in the research, is defined as any activity or activities that include achieving productivity, skills and knowledge. This category consists of two sub-categories.

curriculum

The participants believed that clinically teachable content should be specified in the curriculum. *“The content of the clinical education curriculum must be clear” (P10).*

The midwives who participated in the study acknowledged that a lesson plan must be precisely derived from the curriculum. *“When I am writing a lesson plan, the alignment between the curriculum and the lesson plan is very important” (P15).* According to the participants, the alignment of the contents of their logbooks with the content of the curriculum and careful monitoring of the completion of these logbooks are of paramount importance. *“The content of the logbook should be consistent with the content of the curriculum, and the instructor should oversee the completion of these logbooks” (P3).*

The midwives participating in this study also placed enormous emphasis on the use and inclusion of hidden curriculum topics in the student curriculum. *“Whatever a midwifery student should be taught, I believe, should be included in the curriculum. It should be made clear in the curriculum how to behave professionally and ethically, how to communicate well with people, how to be fair in dealing with others, etc. When there is enough information and up-to-date books in this field, and we have excellent experts in this field, why not show it in the curriculum!” (P1)*

The participants emphasized the need for clear clinical training methods and the use of evidence-based education. *“Clinical teaching methods should be very clear in the curriculum” (P3).* *“Evidence-based education is very important. Not everything is based on experience. I mean, the education you give and the action that is taken should be based on scientific articles and texts.” (P8)*

Participants in this study believed that a codified program for using the skill lab and performing the first educational procedures by students in these centers is very important. *“In the midwifery department, a*

part of the training, especially the initial part, should be offered in the skill lab" (P12).

Virtual clinical education

According to the participants in this study, the use of distance education along with in-person clinical education is fruitful provided that there are appropriate facilities and equipment. *"I myself believe in distance education. If anything, clinical education should not necessarily be on the patient's bedside" (P13).*

"Telemedicine and distance assessment has a long history in the world. I have a positive opinion about distance education. This virtual education should not be limited to pandemic conditions. Some clinical courses should be offered through this modality, but by meeting the requisites first. Finally, its value should be equal to or even higher than in-person education". (P10)

Clinical instructors

In clinical education, the presence of a good clinical instructor is very important due to the sensitivity of the health of community. This category is very critical in clinical research on midwifery education. It consists of 3 sub-categories.

Skills of clinical instructors

Participants in the study were of the opinion that clinical instructors must possess the knowledge of up-to-date scientific procedures and the ability to offer clinical education. *"A clinical instructor should be aware of the latest scientific achievements in the treatment of patients and be able to offer a proper education to the student". (P1)*

The participants in the study deemed clinical work experience very crucial for clinical instructors and placed immense emphasis on this experience. *"We should not allow anyone to come and teach students in clinical settings! They must have at least a few years of experience in that field and be interested in teaching students" (P2)*

Participants in the study accentuated clinical instructors' communication skills including communication with patients, students, etc., and considered them as role models for students. *"There are some professors who do not treat the patient well, and the student learns this because we do not learn it from somewhere else! The students follow the example of their professors!" (P6).* *"In my opinion, when choosing a professor, the way they communicate with students, patients and the hospital staff should be taken into account. Simply having a degree or qualification is not enough." (P14)*

Empowerment of clinical instructors

According to the participants in this study, clinical instructors should be trained in various fields such as teaching methods and clinical assessment. *"Unfortunately, many clinical instructors do not pay attention to clinical education and assessment! Clinical educators need to be fully trained in this area". (P8)*

The midwives who participated in the study maintained that legal support for clinical instructors in internship programs leads to better education for students. *"The clinical instructor should be legally supported so that if something happens they will not be held responsible for. This support will increase the instructor's interest in doing clinical work with the student"*. (P12)

Collaboration between hospitals and the faculty in terms of clinical education

The participants attached great importance to the collaboration of faculty members and clinical staff when it came to the students' clinical education. *"To teach an educational content, it is better if one part of it is taught by a faculty member and leave the other part to a person who works in clinical setting (i.e., the staff). This will increase the effect of the training."* (P3)

Students

Students are individuals for whose scientific and practical advancement proper planning is done so that they are prepared to provide services in accordance with the needs of society. This category consists of two sub-categories.

Requirements of starting clinical education

The participants believed that it is useful to check the students' readiness before starting clinical education and recommended that if necessary and in accordance with the goals of the internship programs, the students' competence be strengthened by methods such as holding workshops, etc. *"In my opinion, before the students enter the internship programs, their readiness should be checked and, if necessary, boost it in different ways."* (P8)

According to the participants in the study, a package to familiarize students with the clinical field and the rules governing the wards is useful for the success of clinical education. *"The student must be familiar with the environment before entering the clinical field. A good clinical education is one that has a ready-made package for this purpose, and the student must be familiar with it before going to the clinical field. This means learning the ropes: whom they are in contact with, what the scope of their authority and duties in that ward is and with what purpose they have entered that ward."* (P10)

Educational services for students

Participants in the study stated that a clinical counselor who can identify the educational problems of students in the clinical field and who tries to address these problems is needed. *"It is good to have someone as a clinical counselor to identify the educational problems of students in clinical settings and try to solve those problems with the cooperation of faculty officials."* (P15)

Clinical setting

A clinical setting is an ideal environment for teaching and learning and lies at the heart of clinical midwifery education. This category consists of three sub-categories.

Educational conditions in clinical settings

As far as clinical settings were concerned, the participants believed that a relevant number of students and patients referring to a particular clinical center is important. *"One of the important points about clinical settings is the ratio of the number of students to a particular clinical field, and another is how general that field is. In some centers that are general, students need to see some rare diseases at least once".* (P9)

The participants also insisted that the suitability of the clinical setting to implement the relevant curriculum is useful in educating students. *"The clinical setting must meet the necessary conditions to implement that curriculum."* (P3)

Clinical staff

Participants in the study stressed that how the clinical staff accept the presence of students and their instructors in the clinical setting is very important. *"Staff in hospitals, even some university hospitals, are not briefed on cooperating with the instructor and the student. The staff should be informed that students need to do a lot of things and that they have to treat the students more patiently"* (P12)

Clinical facilities and equipment

The participants strongly recommended the existence of educational facilities such as conference rooms, resourceful libraries with up-to-date books, computers with Internet connectivity, and skill labs with appropriate facilities to meet the educational needs of students. *"Students in the clinical setting also have a series of educational needs such as what they should do when there is no patient. There should be a series of educational assistance facilities such as the Internet, a library and a skill lab to empower the student"*. (P10)

The midwives participating in this study found it necessary to provide clinical facilities for students and clinical instructors. *"Basically, there should be a pavilion in the hospital for my students. I expect my students to work in night shifts but I do not expect them to stay up all 12 hours! The instructors must also have a suitable pavilion."* (P7)

Assessment

Improving the quality of clinical education requires continuous assessment of its current status, identification of its strengths, and alleviation of its weaknesses. This category consists of three sub-categories.

Students assessment

Participants laid particular emphasis on how students were assessed. *"Student assessment should be continuous. In every internship program and in every session, a score should be considered for all student activities and the students should evaluate themselves at the end of each session"*. (P12)

According to the participants in the study, topics of student assessment were topics such as practical skills, communication skills, professional ethics and teamwork. *"In addition to evaluating students' practical and communication skills, another thing that should be evaluated, which is not, is teamwork. Our students must learn how to work together"*. (P2)

Assessment of clinical instructors

The students participating in the study valued the importance of faculty assessment feedback. *"In my opinion, assessment is worth that be affected and follow up if a professor has a weakness in a field she corrected herself or not ?"* (P5)

Assessment of clinical settings

As far assessment of clinical settings was concerned, the participants in the study pointed out that what is of particular importance is provision of an appropriate space for the students' presence and another for educating them. *"Internship programs should be offered in a well-prepared area for students to attend, work and train"*. (P14)

Healthcare facilities should be evaluated in terms of the variety of patient coverage and patient care according to the guidelines of the Ministry of Health. *"It is better to check the number of referrals in the hospital intended for student internship programs. Do all referrals range from low-risk to high-risk? Are they from all socio-economic classes in society? Do the hospitals take care of patients according to the clinical guidelines of the Ministry of Health?" All this affects the students' educability"*. (P10)

Discussion

The aim of this study was to develop accreditation standards for clinical midwifery education in Iran. According to our results, the standards of accreditation of clinical midwifery education in Iran are organized in the following categories: Mission and goals; Curricula; Clinical instructors; Students, Clinical setting; and Assessment. These standards will serve as a prerequisite to ensure that midwifery students achieve the desired learning outcomes in the clinical curriculum and become an effective workforce.

The current literature repeatedly points out that the use of accreditation standards is a fundamental principle to guarantee education and achieve educational goals (29, 30). Not until a country can validate midwifery education, will it ensure high quality education (31).

Given the fact that less than half of the countries in the world have accreditation systems for midwifery education, the use of ICM standards is recommended to develop national standards for every country (32). The recent unprecedented surge in the number of migrations of health professionals in Iran (33) has led to calls for international oversight of key elements of health workers' training, such as accreditation of education (34), so that destination countries can ensure that migrant health professionals have the necessary qualifications. This will make it easier for these professionals to make informed choices about where to work and to go to the place where they are needed. The use of accredited standards of

developed countries and ICM in midwifery education provides an opportunity to harmonize educational standards. In order to support midwifery students and ensure that graduates have used international ICM standards for midwifery education, in the first phase of the present study, the standards of developed countries and ICM were used as a framework and guide.

In order for students to achieve the desired learning outcomes, it is necessary to receive effective training in clinical settings. In this regard, Renfrew et al. acknowledge that if the midwifery staff are trained in a supportive clinical environment, they will be well prepared to provide quality midwifery care (35). In one study, inclusion of separate clinical sites was recommended in the accreditation process of midwifery schools (36). In the present study, one of the axes of accreditation of clinical midwifery education was clinical setting.

Issues related to lack of clinical experience in midwifery education create challenge in most countries, and this has been identified in the recent initiative of the World Health Organization to strengthen the quality of clinical midwifery education (37). A previous study showed that there are a number of colleges which do not have an approved clinical skill centers and that some of their instructors do not have professional qualifications for clinical education (63). According to the literature, the main challenges of clinical midwifery training have been incompetent professors, limited opportunities to acquire the required skills, and lack of facilities and equipment (38, 39). Successful implementation of curricula calls for the presence of qualified and skilled professors (40). The results of a systematic review showed that the need to update the knowledge and skills of instructors in clinical practice is essential (41). Adequate monitoring of student performance in clinical settings and creating appropriate opportunities for them to gain clinical experience are two essential requisites for obtaining essential midwifery qualifications (42). These factors were included in the accreditation standards of clinical midwifery education in the present study.

According to McCarthy et al., the accreditation process and standards are different in different countries across the world, and it is recommended that specific accreditation standards be developed for each country with the help of experts in the field (43). In addition to developing standards that are comprehensive and localized, involving stakeholders in the development of standards can help in the implementation of these accreditation standards. Accreditation standards enable institutions to witness a continuous improvement in the quality of education. Abiding by these standards in education, we will continuously see the improvement of academic performance and its consequent results in the health sector (44).

Naturally, only after a specific approach is chosen in each country to develop and set accreditation standards, will the specific challenges of that community become apparent. In order to minimize the challenges ahead, more importance should be attached to the choice of accreditation standards. Due to differences in training levels and executive capabilities, the use of accreditation standards without localization of standards adopted from other countries- even developed ones- is not recommended. Given the ever increasing development of knowledge, it is essential that governments, especially those of less

developed countries, support the establishment of structures for the development of midwifery accreditation standards, in line with global policies, to facilitate education of capable and competent graduates.

In this study, standards were proposed that integrate clinical midwifery education and ensure the implementation of clinical education programs.

Conclusion

Global efforts to improve the health of mothers and infants depend on a strong workforce in midwifery. This requires a quality education system that can train qualified midwives. Such changes are expected to appear in both the health system and the quality of the Iranian health system by enforcing accreditation standards for clinical midwifery education. This study provides a platform for other countries on how to set standards for accreditation of clinical midwifery education in line with national priorities, which will lead to the development of policies integrated with global standards for clinical midwifery education.

Finally, the clinical midwifery education standards enumerated in this article, which are based on international standards and have been widely reviewed by midwifery experts and educators, are used to guide instructors, policymakers, and governmental and non-governmental organizations.

Abbreviations

ICM

International Confederation of Midwives

Declarations

Ethics approval and consent to participate

The research was approved and supervised by the ethics committee of Ahvaz Jundishapur University of Medical Sciences in the south of Iran (IR.AJUMS.REC.1400.126). Written informed consent to participate in the study was obtained from all participants. It is to confirm that all methods were carried out in accordance with relevant guidelines and regulations.

Consent for publication

Not application

Availability of data and materials

The datasets supporting the conclusions of this manuscript are included within the article.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

M.J (corresponding author) The initial idea for the study and contributed to the conception and design of this study. S.A contributed in collection and interpretation data. S.M contributed to the interpretation of data. S.K The initial idea for the study and contributed to the interpretation of data. A.E has drafted the study and contributed to the interpretation of data. R.N contributed in the preparation of the initial draft. All authors have approved the manuscript before submission.

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Tables

Table 1: The comparison of the domain titles /the accreditation standards in the selected countries

The United States (MEAC 2020)	Australia (ANMAC 2014)	The United Kingdom (NMC 2018)	ICM (ICM 2017)
Mission, program assessment and student achievement	Governance	Learning culture	Organization and administration
Curriculum	Curriculum conceptual framework	Educational governance and quality	Midwifery Faculty
Faculty	Program development and structure	Student empowerment	Student body
Facilities, equipment, and other resources	program content	Educators and assessors	Curriculum
Governance, financial management, and administrative capacity	Student assessment	Curricula and assessment	Resources, facilities, and services
Student Services	Students		Assessment strategies
Student affairs	Resources		
Measures of program length	Management of midwifery practice experience		
Complaints and grievance	Quality improvement and risk management		

Table 2. Characteristics of participants in the second phase of the study (interviews)

No	Age	Educational attainment	Occupation/Position	Work experience (years)
1	48	PhD in Reproductive Health	Faculty member of midwifery department/ Member of Midwifery Board	22
2	45	PhD in Medical Education	Faculty member of the department of medical education	19
3	54	PhD in Reproductive Health	Faculty member of midwifery department/ Member of Midwifery Board/ Advisor of the Minister of Health	28
4	22	Undergraduate student of Midwifery	Final year student	-
5	22	Undergraduate student of Midwifery	Final year student	-
6	23	Undergraduate student of Midwifery	Final year student	-
7	55	PhD in Reproductive Health	Faculty member of midwifery department/ Member of Midwifery Board/ Head of midwifery department	25
8	43	PhD in Reproductive Health	Faculty member of midwifery department/ Member of Midwifery Board	10
9	56	PhD in Reproductive Health	Faculty member of midwifery department/ Member of Midwifery Board/ Head of midwifery department	28
10	47	Master's degree in Midwifery	Faculty member of midwifery department/Dean	22
11	48	PhD in Reproductive Health	Faculty member of midwifery department	23
12	33	Master's degree in Midwifery	Clinical instructor of midwifery department	5
13	56	PhD in Midwifery	Faculty member of midwifery department	19
14	31	Master's degree in Midwifery	Clinical instructor of midwifery department	9
15	58	PhD in Reproductive Health	Faculty member of midwifery department	32

Table 3. Analysis of categories, subcategories and sub-sub categories

Sub-sub category	Sub category	Main category
Specific objectives of clinical education	Objectives of clinical education	Mission and goals
Development and review of clinical education goals		
Educational mission	Clarity of mission	
Service mission		
Clinical education curriculum content	Curriculum	Curricula
Accurate implementation of the curriculum		
Hidden curriculum		
Educational strategies		
Comprehensive center for clinical skills training	Virtual clinical education	
Clinical education in non-clinical setting		
Necessary infrastructure for virtual education		
Teaching-learning skills	Skills of clinical instructors	Clinical instructors
Clinical skills		
Communication skills		
Continuation of training of clinical instructors	Empowerment of clinical instructors	
Support for clinical instructors		
Collaboration of faculty members	Collaboration between hospitals and the faculty in terms of clinical education	
Collaboration of clinical staff		
Assessing the scientific status of students	Requirements of starting clinical education	Students
Preparation of students for clinical setting		
Identification of learning problems	Educational services for students	

Handling complaints and criticisms

Comprehensiveness of clinical setting	Educational conditions in clinical settings	Clinical setting
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The match between the internship program and the clinical setting		
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Clinical staff's acceptance of student education	Clinical staff	
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Collaboration of clinical staff with student education		
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Educational assistance facilities	Clinical facilities and equipment	
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Clinical facilities for students		
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Clinical facilities for clinical instructors		
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Assessment of students	Learner assessment	Assessment
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Assessment of topics		
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Assessment of clinical instructors	Assessment of clinical instructors	
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Assessment of feedback		
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Assessment of physical space	Assessment of clinical settings	
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Process assessment		
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