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Medical interns; the neglected learners of the maternity ward learning environment

Masoumeh Rahimi, Fariba Haghani¹, Shahnaz Kohan², Majid Shirani³

Abstract:

BACKGROUND: Clinical training during internship is an important part of medical education. The maternity ward is a clinical environment in which medical students pass their obstetrics and gynecology internship to obtain competencies in this field. The present study was conducted to explain medical interns' manner of learning in the maternity ward.

MATERIAL AND METHODS: The present study was conducted using a qualitative approach with the inductive content analysis method. This study observed the maternity wards of teaching hospitals affiliated to medical sciences universities of Isfahan and Shahrekord. Data were collected through observation and semi-structured individual interviews.

RESULTS: Two main categories and seven subcategories emerged from the analysis of the data. Inadequate participation in learning opportunities included the following three subcategories: the incongruousness of the learning opportunities with the educational goals, inadequate readiness for participation in learning opportunities, and the overlap between learning opportunities and diminished autonomous practice. Inadequate formal and structured education included the following four subcategories: inadequate learning support and direction, subordinate roles and aimless presence, the pale educational role played by the attendants and senior residents, and learning through the support of midwifery educators.

CONCLUSION: Participation in and access to learning opportunities in the maternity ward are very difficult for interns. Interns, therefore, need to attend the maternity ward by a structured program and in the company of training supervisors or competent educators to obtain the required competencies in pregnancy and childbirth.

Keywords:

Internship, learning environment, maternity ward, medical education, medical student, qualitative research

Introduction

Medical students learn the art of medicine by attending clinical learning environments and active participation in treatment, care, and patient management processes.^[1] Clinical learning environments facilitate medical students' process of role-taking and socialization for entering the profession by affecting their professional attitude, beliefs, and identity.^[2,3] Relevant and consistent learning opportunities and the facilitation

of participation in them are key elements for every clinical learning environment.^[2-6]

The management of normal vaginal deliveries and pregnancy emergencies and providing prenatal care are competencies in which medical graduates need sufficient knowledge and expertise.^[7-9] Gaining competence is a process that depends on the learning context. Therefore, as a clinical environment, the maternity ward ought to create many real and intimate opportunities for the learning and development of clinical competencies in pregnancy care and

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Education Development Center, Shahrekord University of Medical Sciences, Shahrekord, Iran, Education Research Center, Isfahan University of Medical Sciences, Isfahan, Iran, ¹Department of Medical Education, Medical Education Research Center, Isfahan University of Medical Sciences, Isfahan, Iran, ²Nursing and Midwifery Care Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran, ³Department of Urology, School of Medicine, Shahrekord University of Medical Sciences, Shahrekord, Iran

Address for correspondence:

Dr. Fariba Haghani,
Department of Medical Education, Medical Education Research Center, Isfahan University of Medical Sciences, Isfahan, Iran.
E-mail: haghani@edc.mui.ac.ir

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delivery for medical students. Despite providing the students with many valuable learning opportunities, clinical environments may be very challenging.^[4]

Problems in the maternity ward include time constraints, fear, extreme tension induced by various sources of emotion and stress, and the irreversible consequences of incorrect clinical decisions for both maternal and neonatal health; these problems turn this particular clinical environment into a challenging one.^[10] In addition, the concurrent presence of the students of other professions with similar learning objectives affects medical students' learning in this clinical environment.^[11]

Today, the use of simulation-based education for teaching pregnancy care and delivery has helped further overcome these challenges.^[12-14] Nevertheless, since no education technique can fully replace the education given to medical students in actual clinical environments, improving the learning environment of these settings and creating learning opportunities for the students to gain clinical experience are challenges of today's medical education.^[15]

Data about the manner of medical students' learning in clinical environments are so limited that Dornan refers to it as a black box.^[16] Few studies have been conducted on medical students' learning experiences in the maternity wards. In one qualitative study, Cotter *et al.* investigated the learning experiences of medical students in the maternity wards and found that while medical and midwifery students compete in gaining clinical experience, medical students' achievement of learning goals is diminishing.^[9] Quinlivan *et al.* investigated the perceptions of medical and midwifery students about their roles in the maternity ward and concluded that access to clinical activities is difficult for both groups. This difficulty has created a competition between these groups and has made them ignore the professional roles of each other.^[17]

Improving medical students' educational outcomes requires information about the manner of their learning and interactions in the learning environment in different clinical environments.^[18] The present study was conducted to explain medical interns' manner of learning in maternity ward environments.

Material and Methods

Study design

An inductive content analysis with a qualitative approach was used to explain the manner of medical interns' learning in the learning environment of the maternity ward. This approach enables the careful examination of a multidimensional concept such as the

learning environment and its effects on the students' learning and determines the dynamic inner interactions and subtleties of these environments.^[19]

Setting

The present study was conducted in the maternity wards of teaching hospitals affiliated to Isfahan and Shahrekord Universities of Medical Sciences, which are the main fields for teaching pregnancy care and delivery skills. The students of general medicine, midwifery students, and OB/GYN residents pass their internship, training, and residency courses in pregnancy care and delivery in the maternity wards of these hospitals.

Medical students attend the maternity ward once during their clinical rotations and once during their internship to acquire pregnancy care and delivery skills. During the internship, they attend the maternity wards in groups of four to six and stay in this ward for 2 months. In the current pregnancy care and delivery internship curriculum, medical students are expected to learn the skills of managing delivery, high-risk pregnancies, and pregnancy emergencies. The OB/GYN departments are responsible for offering training to interns and planning their education. Given that these hospitals have OB/GYN residency training programs, part of the responsibility for training interns in this ward has been delegated to OB/GYN residents.

Data collection

Data were collected through semi-structured individual interviews and observation. To this end, the first author visited the maternity wards with a reference letter from the midwifery and OB/GYN residency department heads. Nonparticipatory observations were carried out over 2 months in varying work and training shifts and recorded by taking field notes (FNs). During the observations, participants' conversations and the interpretations of their interactions were also recorded.

The interview sampling was carried out by purposive and convenience methods. For this purpose, the interns were invited to the interviews concurrently with the observations. The criterion for their invitation was to have already passed at least half of their internship course in the maternity ward. Clinical professors with greater educational responsibilities and experience were selected for the interviews through purposive sampling. A total of 15 individual semi-structured interviews were conducted with 15 participants. The individual semi-structured interviews were carried out using the interview guidelines. Each interview lasted between 30 and 60 min and was recorded. The time and place of the interviews were chosen by the participants. Data collection continued until data saturation was reached;

that is, when the observation yielded to repetitive results and the interviews produced no further new data.

Data analysis

Data were collected and simultaneously analyzed by inductive content analysis. The analysis of the data from the transcribed interviews and FNs was performed in MaxQDA-10. The data and FNs were reviewed several times, transcribed, and then coded. To increase the accuracy of the data, an initial coding was performed separately by the other two authors so that the codes could be matched against each other. The process of classification of the codes and labeling and constructing the categories was continuous, and the similar codes were grouped and labeled; then, the similar groups were integrated to form subcategories, which were in turn organized to form the main categories.

Ethical considerations

The present study was approved by the ethics committee of Isfahan University of Medical Sciences (1396030179). To observe the principles of research ethics, the researcher was present in the maternity ward with prior permission and a reference letter from the department heads. The participants were briefed on the study objectives and then submitted written informed consent before the interviews. They were also ensured of their right to withdraw from the study and asked to give their permission for recording the interviews.

Results

A total of 15 individual semi-structured interviews were conducted with 15 participants. Observations were also carried out alternately for 2 months in two hospitals during the morning, evening, and night shifts in the maternity wards, and a total of 24 FNs were recorded. The interviewees included senior general medicine interns and OB/GYN faculty members. Table 1 presents participants' details.

* In Iran, there are cultural restrictions on the presence of male interns in the maternity wards; for this reason, all the participating students were female.

Two main categories and seven subcategories emerged from the analysis of the data obtained from the interviews and observations, which are presented in Table 2.

Quotes from the interviews are denoted by the interview transcript and those from the observations by FN.

Inadequate participation in learning opportunities

Inadequate participation in learning opportunities was the main challenge faced by the interns in the learning environment of the maternity ward. Several

factors affected the interns' participation in learning opportunities in this ward. On the one hand, the learning environment of the maternity ward did not create suitable and sufficient learning opportunities, on the other, the learners did not have the required readiness and attributes to participate in these opportunities.

The incongruousness of the learning opportunities with the educational goals

The incongruousness of the learning opportunities with the educational goals was one of the factors that reduced the interns' participation in learning opportunities. The interns believed that the learning goals determined for them are not in line with the activities in which they are involved.

"We have to learn the management of pregnancy emergencies and childbirth here ..., regarding childbirth, I haven't been able to manage even one yet. I have learnt very little about the management of emergencies, since we may not even encounter some of the cases, or even if we do, we have not been taught what is needed. For instance, I haven't learnt placental decollement management, because it has to be done very quickly, and there has been no one in this situation to teach me" (Interview with Intern-Semester 12).

In addition to the interns, the professors also believed that the means were lacking for creating learning opportunities congruous with the learning goals set for interns. As a result of the inability to create appropriate learning opportunities, the educational expectations and learning goals had changed.

"The interns must learn childbirth management. This is part of their educational goals. Previously, we expected them to definitely manage 10–15 childbirths ... but, now, they don't have what it takes to manage those many childbirths. If an intern has managed 4–5 childbirths now, this means she has been very active. Even though, in truth, they cannot gain the required expertise even with 4–5 childbirths" (Interview with Clinical Professor).

Inadequate readiness for participation in learning opportunities

The interns considered their inadequate mastery of the theoretical prerequisites of pregnancy care and delivery,

Table 1: Interviewees' details

	Isfahan University of Medical Sciences	Shahrekord University of Medical Sciences
	n=5	n=4
Students	Mean age: 25 years Gender*: Female	
Clinical professors	n=3 Gender: 2 females and 1 male Mean age: 51.5 years Teaching experience: 22.75 years	n=3 2 female

Table 2: The main and subcategories extracted from the analysis of the data in relation to the interns' manner of learning in maternity wards

Main Category	Subcategory
Inadequate participation in learning opportunities	The incongruousness of the learning opportunities with the educational goals Inadequate readiness for participation in learning opportunities
Inadequate formal and structured education	Overlap between learning opportunities and diminished autonomous practice Inadequate learning support and direction Subordinate roles and aimless presence The pale educational role played by the attendants and senior residents Learning through the support of midwifery educators

their insufficient practice of skills in simulated learning environments, and the inadequate support from their professors with regard to psychological preparation as the reasons for their reduced participation in clinical activities.

Theoretical knowledge is not adequately reviewed and functionalized for interns prior to their entry into maternity ward environments.

"It is true that we read the prerequisite theoretical topics during our clinical rotations, but it would be much better if they gave us a brief summary of the application of those topics now that we are in the situation Unfortunately, most of the time, we don't know how to practice the theoretical topics. For instance, we don't even know from before how to perform inductions, and have to ask [about it] from others in the ward when we enter" (Interview with Intern-Semester 13).

In addition, interns are not placed in a context that is conducive to their training and practice of skills before entering the learning environment of the maternity ward.

"In my view, a brief educational and skill practice session should be held for us upon entry into the maternity ward, even if it is a show or a simulated session ..., so that we can at least for once be directly familiarized with maternity ward skills" (Interview with Intern-Semester 13).

"The interns' dependence on the midwifery students is vivid. They often assess the patients based on the questions they ask the midwifery students and educators and the staff and report to the residents."

Other reasons given by the interns for their reduced involvement in clinical activities included inadequate self-confidence, fear of practicing their skills, and inadequate psychological readiness.

"If I were more daring and had more self-confidence, I could create more learning opportunities for myself. However, most of the time, the lack of knowledge and fear of practicing the skills deprived me even of the few engagement and practice opportunities that came across" (Interview with Intern-Semester 13).

Along with the factors recalled by the learners as contributing to their reduced participation in learning opportunities, the clinical professors believed that interns lack sufficient interest, willingness, and motivation to take part in learning opportunities and this issue affects their education and participation in clinical activities.

"A large part of the interns' education depends on themselves ... how interested they are themselves and how actively they attend [the ward].... So, when you see that an intern is present and interested ..., then you definitely try to teach her the skills.... Unfortunately, the interns show no interest in attending the maternity ward or taking part in clinical activities" (Interview with Clinical professor).

Overlap between learning opportunities and diminished autonomous practice

Among the other factors that reduce interns' participation in clinical activities is the overlap between the learning goals of the learners who are present in the maternity ward, which is often to the greater advantage of the midwifery students and the OB/GYN residents.

"Well, there are other students here who want to learn as well and know the skills much better than we do and have higher self-confidence For instance, the midwifery students and the residents get ready for childbirth management and the practice of any other skill much quickly, and it is us who have to retreat" (Interview with Intern-Semester 12).

"The experience, empowerment and self-confidence of the midwifery students and the residents bring them greater empowerment and self-confidence as well as engagement, but it is really the other way around for us" (Interview with Intern-Semester 13).

Inadequate formal and structured education

Inadequate formal and structured education was another factor that affected the interns' learning in the maternity ward. The interns revealed their deprivation of a formal and planned education and the necessity of their receiving a more structured education in pregnancy and childbirth skills through a predetermined program with the presence of designated educators.

"In my view, everything should be exactly planned. For instance, over the two-month time in which I am an OB intern, childbirth training and generally skills training should be planned for me, or at least be explained to the senior resident that she ought to teach me the components of these skills" (Interview with Intern-Semester 12).

Inadequate learning support and direction

Another feature of the interns' learning in the maternity ward is that they receive no direct or structured educational support, and learning skills have become their very own responsibility.

"Right now, we learn everything by ourselves through experiment and observation. Although we have had some training before, but training in the real environment and on mothers' bedside is vastly different. I will surely learn if I receive training directly from the attendant or resident, and then I can do the task on my own" (Interview with Intern-Semester 12).

Subordinate role and aimless presence

Interns have a subordinate role in the maternity ward and their presence is aimless in this environment; they are mostly seen as passive observers.

"The interns merely perform the tasks occasionally delegated to them by the residents or staff. In most cases, the tasks delegated to them are performed by midwifery students under the supervision of their educator and they only report the results of these activities to the residents" (Observation).

This aimless presence is partly blamed on the noncontinuous presence of a designated educator.

"It is so bad that we have to take our maternity ward internship without an educator (says the intern with great disappointment)... We waste so much time here and there is almost no teaching-learning activity for us in it and the hours of our internship are spent in futility" (Interview with Intern-Semester 12).

The interns' state of suspense and undecidedness in the maternity ward had led to their professional role being ignored.

"We are totally in limbo here and are not viewed as a medical intern at all. Registering vital signs and performing simple therapeutic procedures is all that we do here, which does not require our presence anyways" (Interview with Intern-Semester 12).

The pale educational role played by the attendants and senior residents

One of the issues that affects the formal education of interns in the maternity ward is the pale educational role played by the professors and residents in the maternity ward due to their treatment responsibilities.

"We can't be in the maternity ward full-time; we may have to go to the operating room with a mother.... Our presence in the maternity ward is very much dependent on our work in the operating room" (Interview with Clinical professor).

The professors delegated the interns' education to the OB/GYN residents, but they also had many tensions and responsibilities that affected their educational responsibilities. The professors and residents preferred their medical responsibilities over their educational ones.

"Our professors train well, but most of it takes place in the operating room as training surgery to the residents, since the timing of childbirth is not known and the professors don't have the time for this. On another note, the residents are also too busy. They don't even have the time to do their own work, let alone train us. They have very little time for this ..." (Interview with Intern-Semester 13).

Learning through the support of midwifery educators

According to the interns, the presence of midwifery educators in the maternity ward was one of the effective and satisfactory features of the learning environment in this ward. Because of their responsibility to train midwifery students, midwifery educators were constantly present in the maternity ward and the interns saw them as a source of support for their learning, and this support increased further in those of the educators who were more committed and interested in providing education.

"Many times, when I want to learn something, I ask the midwifery educators ..., the midwifery educators treat us very well ..., plus, they are present all the time and train carefully Most of the time, they engage us as well when they train the midwifery students" (Interview with Intern-Semester 13).

During the researcher's observations, one of the midwifery educators was eagerly teaching induction to the interns in addition to the midwifery students, and when asked why she was doing what she did, she answered:

"Honestly, it is not my responsibility to train the interns I'm responsible for teaching the midwifery students, but my sense of responsibility and commitment to education and mothers make me train the interns as well I like them to learn, so that mothers and infants don't have to suffer any complications or problems."

Discussion

The present study was conducted to explain the manner of medical interns' learning in the maternity ward. The main purpose of training students during the internship period is to empower them in clinical environments.^[20] Participation in clinical activities and interactions provides the basis of competency for interns.^[3,20,21]

The present findings showed that the learning environment of the maternity ward affects the participation of interns in learning opportunities and clinical activities and therefore their competencies in pregnancy care and delivery. In the learning environment of the maternity ward, interns are often passive observers and learners in a state of suspense and undecidedness.

Creating a learning environment conducive to participation in learning opportunities is an essential aspect of learning and acquiring competencies in clinical environments.^[6,20] The learning environment of the maternity ward did not facilitate the interns' participation. Clinical experiences in pregnancy care and delivery are valuable for medical students and consolidate their knowledge in this field and boost their communication skills.^[7,9] Nevertheless, the interns were not offered proper learning opportunities and clinical activities congruous with the learning goals set in their curriculum in the maternity ward. For example, childbirth management skills acquisition is part of the learning goals of medical students during their internship in the maternity ward, but the context was rarely conducive to the interns' participation in childbirth management. In the maternity ward, in addition to medical students, midwifery students and OB/GYN residents are also present and should acquire pregnancy care and delivery competencies.^[9,11,17] In the absence of interdisciplinary collaboration, the concurrent presence of these three groups created a climate of competition that led to the overlapping of learning opportunities and made it difficult to create independent learning opportunities.^[11] This overlap was to the disadvantage of the interns in their pursuit of learning opportunities due to their reduced educational expectations and the greater capability of the midwifery students and OB/GYN residents.

Another aspect of learning in clinical environments was the learners' readiness and other attributes that facilitate participation in learning opportunities.^[6,20] Dynamic and active behaviors, motivation, self-confidence, and interest are the prerequisites of participation in learning opportunities.^[1,6,10,20,21] The interns' lack of motivation and their passive behaviors in the maternity ward reduced their participation in learning opportunities. The interns' lack of motivation and nonactive behaviors were partly due to their lack of readiness since they attended the maternity ward before gaining the knowledge and skills needed for learning pregnancy and delivery skills. Moreover, the lack of self-confidence and the feeling of insecurity due to the absence of a training supervisor^[4] and the sense of inexperience compared to midwifery students and OB/GYN residents made the interns unwilling to take part in clinical activities. These issues made the interns' transfer of theoretical knowledge to

the clinical environment, which is a central necessity of learning environments in internship training,^[22] and the acquiring of competencies difficult. It is necessary for interns to obtain the required knowledge and skills in this field before entering the maternity ward through direct education and participation in skill laboratory workshops.^[9,13,23] Interns are highly dependent on the opportunities that the learning environment creates for them,^[3] and it is necessary that they have other capabilities, such as self-directed learning and communication skills.^[1,21,24] The interns' own inadequate readiness and lack of the required abilities went hand in hand with the pale educational role played by the attendants and senior residents to deprive the former of participation in clinical activities.

In truth, the internship training provided in the maternity ward lacked the required organization. The particular hierarchical system among the attendants and residents made the interns' formal training difficult. In the maternity ward, the residents were so busy with their medical responsibilities that they could not establish any educational interaction with the interns. The learning role of the interns was thus overlooked. Given the challenges of the maternity ward,^[10] it is necessary for interns to receive structured educational support and direction on how to achieve the expected learning goals.^[25] The absence of support and direction renders the learners' learning in clinical environments difficult.^[1,21,26-28]

Although delegating some of the responsibility for learning to the interns themselves is necessary,^[5] this study found that their learning had excessively become their own responsibility, and they received inadequate direction in the course of their learning. In the absence of a training supervisor, a preconceived order, and proper educational planning, the interns' teaching-learning opportunities were reduced and they merely wasted their time in a state of suspense and undecidedness.

When the educational needs of the interns were congruous with their learning interests and motivation, they themselves sought to receive education, direction, and support from the midwifery educators present in the maternity ward for offering education to midwifery students. Similar to other studies, the present study demonstrated that the presence of midwifery educators is a positive factor that helps improve the interns' education in the maternity ward.^[9,23,29,30] Midwifery educators provided education to the interns in response to their own requests or by their own will, in some cases. Interns' learning in the maternity ward can be promoted by ensuring the presence of a full-time clinical professor^[3,4,20] or employing midwifery educators to train interns about midwifery skills through an ongoing presence in the ward.^[31-33]

Strengths and limitations

The present study investigated interns' manner of learning in the learning environment of the maternity ward in two teaching hospitals. Data were collected by interviews and observation, and using these two methods helped increase the accuracy and credibility of the data. Nevertheless, different learning processes are formed in every clinical environment, and studies conducted to examine the learning environment of the maternity ward and the interns' manner of learning by focusing on organizational and educational structures can help gather further information.

Conclusion

Medical graduates are expected to skillfully manage vaginal childbirth, manage pregnancy emergencies, and assess fetal health because physicians are the first and only person, especially in underprivileged regions, who is accessible to pregnant women. However, in medical programs, limited time is allocated to education in pregnancy care and delivery, and accessing learning opportunities in the maternity ward is also difficult, especially for interns. It is, therefore, necessary to prepare the interns before they enter the maternity ward by way of an exact systematized program that teaches the required knowledge and skills. In addition to these knowledge and skills, interns should also acquire the attributes and capabilities needed to attend clinical environments in order to increase their participation in learning opportunities. Through the greater presence of clinical professors or the help of midwifery educators, structured support to interns can be increased as they enter the maternity ward and their learning can thus be reinforced. In addition to these strategies, the design and implementation of an interdisciplinary educational approach along with collaborative care can be effective in improving the learning environment of the maternity ward and the interns' learning in this clinical environment. By increasing the orderliness and cohesiveness of learning opportunities for all the three groups present in the maternity ward (medical interns, midwifery students, and OB/GYN residents) and creating proper learning opportunities for each profession, this approach can improve interns' participation in clinical activities and help their achievement of the learning goals and expected competencies.

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Conflicts of interest

There are no conflicts of interest.

References

- Gallagher P, Carr L, Weng SH, Fudakowski Z. Simple truths from medical students: Perspectives on the quality of clinical learning environments. *Med Teach* 2012;34:e332-7.
- Bates J, Ellaway RH. Mapping the dark matter of context: A conceptual scoping review. *Med Educ* 2016;50:807-16.
- Liljedahl M, Boman LE, Fält CP, Bolander Laksov K. What students really learn: Contrasting medical and nursing students' experiences of the clinical learning environment. *Adv Health Sci Educ Theory Pract* 2015;20:765-79.
- Olmos-Vega FM, Dolmans DH, Vargas-Castro N, Stalmeijer RE. Dealing with the tension: How residents seek autonomy and participation in the workplace. *Med Educ* 2017;51:699-707.
- Boor K, Scheele F, Van Der Vleuten CP, Teunissen PW, Den Breejen EM, Scherpbier AJ. How undergraduate clinical learning climates differ: A multi-method case study. *Med Educ* 2008;42:1029-36.
- Dornan T, Boshuizen H, King N, Scherpbier A. Experience-based learning: A model linking the processes and outcomes of medical students' workplace learning. *Med Educ* 2007;41:84-91.
- Cheng HC, de Costa C, Woods C. Medical students and midwives - How do they view each other? *Aust N Z J Obstet Gynaecol* 2018;58:586-9.
- Pierides K, Duggan P, Chur-Hansen A, Gilson A. Medical student self-reported confidence in obstetrics and gynaecology: Development of a core clinical competencies document. *BMC Med Educ* 2013;13:62.
- Cotter D, Turner MJ, McAuliffe FM, Higgins MF. Medical students learning experiences of the labour ward: A qualitative research study. *Eur J Obstet Gynecol Reprod Biol* 2016;206:204-7.
- Brunstad A, Hjälmhult E. Midwifery students learning experiences in labor wards: A grounded theory. *Nurse Educ Today* 2014;34:1474-9.
- Rahimi M, Haghani F, Kohan S, Shirani M. The clinical learning environment of a maternity ward: A qualitative study. *Women Birth* 2019;32:e523-9.
- Vermeulen J, Beeckman K, De Clercq G, Vandelanoot I, Gucciardo L, Laubach M, et al. Inter-professional perinatal simulation training: A valuable educational model to improve competencies amongst student midwives in Brussels, Belgium. *Midwifery* 2016;33:49-51.
- Dayal AK, Fisher N, Magrane D, Goffman D, Bernstein PS, Katz NT. Simulation training improves medical students' learning experiences when performing real vaginal deliveries. *Simul Healthc* 2009;4:155-9.
- Gardner R, Raemer DB. Simulation in obstetrics and gynecology. *Obstet Gynecol Clin North Am* 2008;35:97-127.
- Fialkow MF, Snead CM, Schulkin J. Benefits and barriers to teaching medical students in an ob-gyn clinic. *Health Serv Res Manag Epidemiol* 2018;5:2333392817753518.
- Dornan T, Tan N, Boshuizen H, Gick R, Isba R, Mann K, et al. How and what do medical students learn in clerkships? Experience based learning (ExBL). *Adv Health Sci Educ Theory Pract* 2014;19:721-49.
- Quinlivan JA, Thompson CM, Black KI, Kornman LH, McDonald SJ. Medical and midwifery students: How do they view their respective roles on the labour ward? *Aust N Z J Obstet Gynaecol* 2002;42:401-6.
- Deketelaere A, Kelchtermans G, Struyf E, De Leyn P. Disentangling clinical learning experiences: An exploratory study on the dynamic tensions in internship. *Med Educ* 2006;40:908-15.
- Walsh K. editor. *Oxford Textbook of Medical Education*: Oxford University Press; 2013.
- Sheehan D, Wilkinson TJ, Billett S. Interns' participation and learning in clinical environments in a New Zealand hospital. *Acad Med* 2005;80:302-8.

21. Pimmer C, Pachler N, Genewein U. Contextual dynamics in clinical workplaces: Learning from doctor-doctor consultations. *Med Educ* 2013;47:463-75.
22. Koens F, Mann KV, Custers EJ, Ten Cate OT. Analysing the concept of context in medical education. *Med Educ* 2005;39:1243-9.
23. Pecci CC, Mottl-Santiago J, Culpepper L, Heffner L, McMahan T, Lee-Parritz A. The birth of a collaborative model: Obstetricians, midwives, and family physicians. *Obstet Gynecol Clin North Am* 2012;39:323-34.
24. Durning SJ, Artino AR Jr, Pangaro LN, van der Vleuten C, Schuwirth L. Perspective: Redefining context in the clinical encounter: Implications for research and training in medical education. *Acad Med* 2010;85:894-901.
25. Dornan T, Hadfield J, Brown M, Boshuizen H, Scherpbier A. How can medical students learn in a self-directed way in the clinical environment? Design-based research. *Med Educ* 2005;39:356-64.
26. Ebert L, Tierney O, Jones D. Learning to be a midwife in the clinical environment; Tasks, clinical practicum hours or midwifery relationships. *Nurse Educ Pract* 2016;16:294-7.
27. Sheehan D, Jowsey T, Parwaiz M, Birch M, Seaton P, Shaw S, *et al.* Clinical learning environments: Place, artefacts and rhythm. *Med Educ* 2017;51:1049-60.
28. Steinert Y, Basi M, Nugus P. How physicians teach in the clinical setting: The embedded roles of teaching and clinical care. *Med Teach* 2017;39:1238-44.
29. McConaughy E, Howard E. Midwives as educators of medical students and residents: Results of a national survey. *J Midwifery Womens Health* 2009;54:268-74.
30. Feinland JB, Sankey HZ. The obstetrics team: Midwives teaching residents and medical students on the labor and delivery unit. *J Midwifery Womens Health* 2008;53:376-80.
31. Angelini DJ, O'Brien B, Singer J, Coustan DR. Midwifery and obstetrics: Twenty years of collaborative academic practice. *Obstet Gynecol Clin North Am* 2012;39:335-46.
32. Cooper EM. Innovative midwifery teaching for medical students and residents. *J Midwifery Womens Health* 2009;54:301-5.
33. Blanchard MH, Kriebs JM. A successful model of collaborative practice in a university-based maternity care setting. *Obstet Gynecol Clin North Am* 2012;39:367-72.