

Effective Clinical Teaching Practice and Associated Factors among Midwifery Educators in Public Universities of Ethiopia, 2019

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Abstract

Abstract Background: Despite the fact that effective clinical teaching realistically enhances learners to be competent, in Ethiopia only 31.6% of midwifery graduates passed the national standard of competence for graduation in 2013. Likewise, evidence is lacking on effective clinical teaching practice of midwifery educators in Ethiopia. As a result, this study aimed to assess effective clinical teaching practice and associated factors among midwifery educators in Public Universities of Ethiopia. **Methods:** Institution based cross-sectional study was conducted among midwifery educators in Ethiopia in April, 2019. A total of 424 educators were randomly selected to participate in this study. Data were collected through email then entered into Epi-data version 3.1 and transported to SPSS version 23 for analysis. The data presented using frequency, percentage and tables. Multivariable logistic regression analysis was done to identify associated factors of effective clinical teaching practice. The odds ratio at 95% confidence interval used to ascertain association. Statistical significance declared at $P < 0.05$. **Results:** Only 178(47.3%) of participants had effective clinical teaching practice. Clinical teaching experience (AOR= 4.72; 95%CI=1.97, 11.29), training on higher diploma in teaching profession (AOR=2.78; 95%CI=1.61, 4.82), clinical teaching workshop (AOR=4; 95%CI=1.98, 8.05), students per clinical unit (AOR= 3.71; 95%CI= 1.66, 8.26), giving objectives of clinical learning for students (AOR= 4.74; 95%CI=2.43, 9.25), using performance based assessment tool (AOR =1.82; 95%CI=1.04, 3.16) and having good interest in clinical teaching (AOR=8.63; 95%CI=2.91, 25.56) were factors positively associated with effective clinical teaching practice. **Conclusions:** Less than half of midwifery educators of Ethiopian Public Universities had effective clinical teaching practice. The educators' clinical teaching experience, training and adhering to clinical teaching standards were identified to affect effective clinical teaching positively. Therefore, the educators should adhere to the standards for effective clinical teaching and receive trainings on effective teaching. **Key words:** Effective clinical teaching, associated factors, Midwifery educators, Ethiopia

Background

Midwifery is a profession concerned with provision of holistic care for women during maternal life, for newborn, and infants (1). Ability to perform midwifery competency in real situation can't be achieved through classroom learning alone (2). Thus, the preponderance of clinical experience in the training of midwifery students cannot be undervalued. It is noteworthy in guiding midwifery education process (3). To enable midwifery students acquire intended clinical experience, effective clinical teaching (ECT) is compulsory (4). But the quality and competence of midwifery graduate is affected by the excellence and capability of midwifery educators to teach effectively (5).

Midwifery educator has obligation to deliver ECT that optimally facilitate students' learning (6). These include consistently performing ECT attributes such as establishing rapport with learners, and maximizing the use of case-based learning opportunities (7), being knowledgeable, providing support, role modeling, being clinically competent, knowing how to teach and being communicative (6,8,9). ECT build students' clinical knowledge, skill, attitude, critical thinking, clinical judgment and decision making ability (4). Accordingly, ECT can lead to the fulfillment of the 5th Ethiopian educational sector

development plan for educational relevance and quality improvement in midwifery context. Which is to produce demand-driven and competent midwifery graduates (10).

Ethiopia is a developing country committed at expanding equitable access to quality tertiary education (10–12). But the graduation rate of students by first degree from university is as low as 79% partly due to low quality of instruction (10). Even among midwifery diploma and first degree graduates, only 31.6% passed the national standard ($\geq 60\%$) of competence for graduation in 2013 after examined at the point of their graduation which leads to failure to satisfy country's demand for competent and qualified midwifery professional (13).

Related studies done previously were focused on describing how frequently each effective clinical teaching attributes were implemented by clinical educators (4,14–16). In addition, none of these studies identified factors associated with effective clinical teaching practice (ECTP). However, the current study was aimed to identify factors associated with ECTP using regression analysis. Hence, the findings contribute new knowledge on ECTP among midwifery educators in public universities of Ethiopia. In addition, it helps midwifery educators to maximize ECTP and so does the competency of midwifery graduates that can satisfy the country's demand for competent midwifery professional. Moreover, it establishes baseline information for further study. Lastly, it serves as springboard for stakeholders to deal with the problem.

Methods

Study area, period and design

Institution based cross-sectional study was conducted in 30 Ethiopian Public Universities (EPU) in April, 2019. These universities were selected because they have at least Bachelor of Science degree in midwifery education regular program (BScMERP) and have started teaching clinical courses. In Ethiopia, there are 47 public universities distributed in all 11 regional states of the country. The 30 EPU with BScMERP had 807 midwifery educators of whom 584 of them are male. At the data collection period, 502 midwifery educators were active staffs while the rest 279 were learning their master's degree and 26 were learning their PhD degree.

Study population and sampling procedures

The study population was all midwifery educators who were working in 30 EPU which have BScMERP. Midwifery educators recruited as regular academic staff in the 30 EPU for position of graduate assistant II and above and who taught at least 1 clinical course within this (2018/2019) and/or last (2017/2018) academic year were eligible for this study. Midwifery educators who were learning their master's degree or PhD were excluded from this study since they are on education hence their response could probably be the result of the education they are learning but may not be what they actually practice during their

clinical teaching. On the other hand, since they might be busy on their study, the concern they give for such extra responsibility may be low and may not provide their response.

The sample size was calculated using single population proportion formula ($n = (z \alpha/2)^2 p(1-p) / d^2$) with the assumption of (50%) proportion of ECTP, 95% confidence level, 5% level of precision and 10% of non-response rate resulting 424 sample size. Simple random sampling technique was used to select study participants. The sample size was proportionally allocated for the 30 EPU using the sampling frame taken from the midwifery department of respective universities.

Data collection tool, procedures and quality assurance

Data collection tool was semi-structured questionnaire partially developed incorporating both locally relevant factors those were not studied previously and factors identified by different studies conducted elsewhere (17–20). In addition, it was partially adopted from clinical teachers effectiveness inventory tool developed by Mogan & Knox and cited in Marcia (14). The questionnaire was developed in English and did not translated to local language as respondents were university midwifery educators and they were considered as they understand English as it is the official working language at university level in the country. Pretest was done on 43(10%) of the sample size among nurse educators of Jimma University before the actual study. The purpose of the pretest was to test validity and reliability of the questionnaire and to check the wording, logic and order of the questions. Finally, the questionnaire was found valid and reliable with Cronbach alpha coefficient 0.88 which shows good internal consistency and modification was made concerning the syntax of the questionnaire accordingly.

ECTP was defined as practicing qualities that enable clinical educators to teach effectively. These qualities include being knowledgeable, clinically competent, skillful in clinical teaching and evaluation of clinical learning of students, interpersonal relationships with students, and personal characteristics of clinical educator those facilitate clinical learning of students. ECTP was measured using 47 items that describe qualities that enable clinical educators to teach effectively using 1–5 points. Sum of the score was used to classify the status of ECTP of respondents using 75% as cut point as EPU use it as criteria for effective teaching. As an example the legislation of Jimma University was referenced (21). As a result, respondents those had sum of score ≥ 188 (75%) were considered as having ECTP and those had sum of score < 188 (75%) were considered as having not ECTP.

Data were collected through email. To assure quality of data, pretested, valid and reliable questionnaire was used to collect data. Objective of the study was clarified for participants and confidentiality of their response was assured to encourage them to provide their genuine response. Questionnaires with unfilled and/or inconsistent part were sent back to respective respondents and made to be corrected and sent back again for the principal investigator.

Data processing and analysis

The collected data were checked for completeness, coded and entered into Epi-data version 3.1 and exported to SPSS version 23 for data processing and analysis. Data cleaning was performed using frequencies, sorting, and listing to see missed values and outliers and then correction was made accordingly. Descriptive statistics such as frequency and percentages were used to describe the study participants. Multivariable logistic regression analysis was done to identify associated factors of ECTP. Odds ratio with 95% confidence interval was estimated to measure the strength of association between independent and outcome variable. Variables that have p-value of < 0.2 at bivariate analysis were included in multivariable logistic regression to control possible confounding factors. Statistical tests at p-value of < 0.05 were considered as cut off point to determine statistical significance. Forward stepwise likelihood ratio method of analysis was used to develop final model due to large number of independent variables that did not allow to use the enter method. Multicollinearity was tested using variance inflation factor (VIF) and it was indicating absence of significant co-linearity (all less than ten). Hosmer and Lemeshow model fitness chi-square test was 6.569 and p-value was non-significant (0.58) indicating the model was good in fitting the data.

Ethical consideration

Ethical approval was obtained from the institutional ethical review board of Mekelle University College of Health Sciences with protocol number: ERC 1243/2019. Support letter was obtained from department of midwifery. Both ethical approval and support letter was submitted to respective head midwifery department of the 30 EPU. Each study subjects were informed about the purpose, benefit, risk, confidentiality of their response through information provided on participant information sheet and written informed consent was obtained.

Results

Socio-demographic characteristics of respondents

In this study, 376 midwifery educators were participated making a response rate of 88.7%. Around four-fifth 298(79.3%) of respondents were male. While the median age was 30 with interquartile range (the first and third quartiles) was 27 and 32 years, respectively (Table 1).

In-service training status of respondents

Just more than three-fourth 292(77.7%), two-fifth 161(42.8%), and one-fourth 97(25.8%) of respondents were trained on basic effective teaching skill, trained on higher diploma in teaching profession (HDP) and had clinical teaching workshop respectively. But, nearly all 367(97.6%) of respondents were not trained on training of trainers of effective teaching skill.

Clinical teaching site characteristics

More than two-fifth 166(44.2%) of respondents teach clinical courses where students were learning in same clinical teaching site at the same time from five (midwifery, nurse, public health officer, pharmacy and medicine) departments (Table 2).

Faculty characteristics

Near to two-third 241(64.1%) of respondents give students objective of clinical teaching for every clinical teaching session in written form. In addition, more than half 209(55.6%) of respondents had classroom teaching as additional workload during their clinical teaching. Similarly, around two-fifth 156(41.5%) of respondents use performance based assessment tool for assessing students' clinical learning objectively. In contrast less than one-fifth 67(17.8%) of respondents use guideline for clinical teaching.

Self-reported attributes of respondents toward clinical teaching

Respondents' attribute toward clinical teaching was measured by single item using 5-point likert scale indicating 1-very poor, 2-poor, 3-fair, 4-good, and 5- very good. As a result, there was no response as very poor and poor. Then response with good and very good was condensed as good and response with fair was kept as it was. In general, most 345(91.8%), 298(79.3%), 311(82.7%), 316(84%), and 334(88.8%) of respondents reported that they had good interest in midwifery profession, had good midwifery curriculum knowledge competency, had good midwifery skill competency, had good interest in clinical teaching, and had good communication skill respectively.

Effective clinical teaching practice and factors associated with it

More than half 198(52.7%) of respondents had not ECTP. From multivariable binary logistic regression analysis seven variables were statistically significantly associated with ECTP. Those variables were clinical teaching experience, training on HDP, clinical teaching workshop, number of students per clinical unit, provision of clinical learning objective of clinical teaching for every clinical teaching session in written form, using performance based assessment tool for assessing students' clinical learning objectively, and interest in clinical teaching.

The odds of ECTP among midwifery educators those had 1–3 and 4–6 years of experience in clinical teaching was 3.31 and 4.72 times higher respectively compared to midwifery educators those had ≤ 1 year of clinical teaching experience (AOR = 3.31; 95%CI = 1.46, 7.44) & (AOR = 4.72; 95%CI = 1.97, 11.29).

Similarly, the odds of ECTP among midwifery educators those were trained on HDP was 2.78 times higher compared to their counterpart (AOR 2.78; 95%CI = 1.61, 4.82).

The odds of ECTP among midwifery educators who had clinical teaching workshop was 4 times higher compared to midwifery educators who did not have clinical teaching workshop (AOR = 4; 95%CI = 1.98, 8.1). In addition, the odds of ECTP among midwifery educators those teach 5–8 and 9–12 students per clinical unit was 3.71 and 2.39 times higher respectively compared to midwifery educators those teach ≥ 13 students per clinical unit (AOR 3.71; 95%CI = 1.664, 8.265) at (p-value = .001) & (AOR 2.39; 95%CI = 1.26, 4.54).

Moreover, the odds of ECTP among midwifery educators those provide objective of clinical learning in written form to students for every clinical teaching session was 4.74 times higher compared to midwifery educators those did not provide it for students (AOR 4.74; 95%CI = 2.43, 9.26). Furthermore, the odds of ECTP among midwifery educators those use performance based assessment tool for assessment of clinical learning of students' was 82% higher compared to those did not use it to assess clinical learning of students (AOR 1.82; 95%CI = 1.05, 3.16) Lastly, the odds of ECTP among midwifery educators those had good interest in clinical teaching was 8.63 times higher compared to midwifery educators those had fair interest in clinical teaching (AOR 8.63; 95%CI = 2.91, 25.56) (Table 3).

Table 1. Socio-demographic characteristics of midwifery educators of Ethiopian Public Universities, Ethiopia, 2019, (N = 376)

Variables	Category	Frequency	Percent (%)
Age in years	</=24	21	5.6
	25-34	323	85.9
	>/=35	32	8.5
Marital status	Married	263	69.9
	Single	113	30.1
Professional qualification	BSc	98	26.1
	MSc	278	73.9
Clinical experience before becoming academic staff (in years)	None	148	39.4
	<2	82	21.8
	≥2	146	38.8
Clinical teaching experience (in years)	</= 1	81	21.5
	1-3	160	42.6
	4- 6	119	31.6
	>6	16	4.3
Sum of clinical courses ever taught	</=5	140	37.2
	6-10	144	38.3
	≥11	92	24.5

***Table 2* Clinical teaching site characteristics where midwifery educators of Ethiopian Public Universities teach clinical courses, Ethiopia, 2019, (N = 376)**

Variables	Category	Frequency	Percent (%)
Clinical teaching site	General and primary hospital	29	7.7
	Teaching, general & or primary hospital	122	32.4
	All public hospitals & health center	201	53.5
	public and private hospital & health center	24	6.4
Number of students per clinical unit	<4	19	5
	5-8	63	16.8
	9-12	144	38.3
	>/=13	150	39.9
Coordination between theoretical and clinical teaching	Relevant theoretical fully covered	309	82.2
	Only some theoretical teaching covered	57	15.2
	No appropriate case for theory covered	10	2.6
Availability of necessary resource for clinical teaching	All adequately available	19	5
	Only some adequately available	104	27.7
	Some available but not adequate	253	67.3

Table 3. Bivariate and multivariable analysis of factors associated with effective clinical teaching practice among midwifery educators of Ethiopian Public Universities, Ethiopia, 2019, (N=376)

Variables	Category	ECTP		COR(95%CI)	AOR(95%CI)	P-value
		No (N, %)	Yes (N, %)			
Experience in clinical teaching (in years)	≤1	66(81.5)	15(18.5)	1	1	
	1-3	86(53.7)	74(46.3)	3.79(1.99, 7.19)	3.31(1.47, 7.44)	.004
	4-6	41(34.5)	78(65.5)	8.37(4.26, 16.46)	4.72(1.97, 11.29)	.000
	>6	5(31.3)	11(68.7)	9.68(2.93, 32.03)	3.68(.79, 17.19)	.098
Trained on HDP	No	150(69.8)	65(30.2)	1	1	
	Yes	48(29.8)	113(70.2)	5.43(3.48, 8.48)	2.78(1.61, 4.82)	.000
Attended clinical workshop	No	176(63.1)	103(36.9)	1	1	
	Yes	22(22.7)	75(77.3)	5.83(3.42, 9.93)	4(1.98, 8.05)	.000
Student per clinical unit	≤4	13(68.4)	6(31.6)	.69(.25, 1.92)	1.15(.33, 4.08)	.827
	5-8	21(33.3)	42(66.7)	3(1.62, 5.56)	3.71(1.66, 8.27)	.001
	9-12	74(51.4)	70(48.6)	1.42(.89, 2.25)	2.39(1.26, 4.54)	.008
	≥13	90(60)	60(40)	1	1	
Provide CLO for students	No	84(62.2)	51(37.8)	1	1	
	Yes	114(47.3)	127(52.7)	1.84(1.19, 2.82)	4.74(2.43, 9.26)	.000
Using PBA tool	No	135(61.4)	85(38.6)	1	1	
	Yes	63(40.4)	93(59.6)	2.34(1.54, 3.57)	1.82(1.05, 3.16)	.034
Interest in clinical teaching	Fair	55(91.7)	5(8.3)	1	1	
	Good	143(45.3)	173(54.7)	13.31(5.19, 34.13)	8.63(2.91, 25.56)	.000

Discussion

This study found that less than half 178(47.3%) of midwifery educators of Ethiopian Public Universities had effective clinical teaching practice. Clinical teaching workshop, training on HDP, clinical teaching experience, number of students a clinical educator teach per clinical unit, using performance based assessment tool for assessing clinical learning of students, provision of objective of clinical learning in

written form to students for every clinical teaching session, and interest in clinical teaching were found to be factors associated with effective clinical teaching practice.

In the current study, years of experience in clinical teaching was found to be positively associated with ECTP. This result is consistent with the result of study done in six Universities of North America where effect of teacher experience on improving ECTP was strongest during the first few years of teaching (19). Similarly, in the current study, training on higher diploma in teaching profession and clinical teaching were found to promote provision of ECTP. This finding is consistent with the result of study done in Malaysia where in-service training had improved ECTP by empowering teachers to be systematic and logical (17).

In addition, the current study showed that class size per clinical teaching unit is positively associated with ECTP. This result is consistent with the result of study done at Department of Midwifery in Mekelle University that suggested 5–8 students per clinical unit to effectively provide clinical education(22). It is also in-line with the result of study done at Oman Nursing College that suggested 4 students per clinical teaching unit to maximize ECTP (9).

Moreover, the current study revealed that provision of objective of clinical learning in written form to students for every clinical teaching session promoted the ECTP. This finding is consistent with the existing knowledge that clinical educator should give to students clinical competencies for every clinical teaching session in written form and should clarify it for students until they clearly understood it to foster ECTP (7).

The current study showed using performance based assessment tool for assessment of clinical learning of students' increased the chance of ECTP by educators. This finding is consistent with the result of study done in Iran at Guilan University where using clear evaluation system affected effective clinical teaching practice by 62.1% (18). Possibly because educators who use performance based assessment tool probably make their teaching approach in-line with what students were going to be assessed on and also student themselves may stimulate the educators to teach them focusing on what they were going to be assessed on. In addition, using performance based assessment tool allows identifying students' area of weakness and strength that would enable clinical educators to align their teaching approach with students' level of readiness that would enable them to practice effective clinical teaching.

Midwifery educators' interest in clinical teaching was found to increase the chance of ECTP by clinical educators. This finding is consistent with the finding of study done at Guilan University in Iran where interest in clinical teaching affected ECTP by 93.9% (18). This finding might indicate that interest in clinical teaching affects ECTP as it is universal that without having interest it is impossible to achieve whatever is needed to be achieved (23).

Strengths And Limitation

This study was conducted at national level using large sample size and probability sampling method to minimize selection bias and to ensure its generalizability. To minimize information bias pretested, valid and reliable questionnaire was used to collect data. Study participants were also limited using exclusion criteria to those who were on clinical practice at data collection period to reduce recall bias. Similarly, the objective of the study was clearly described for study participants and confidentiality of their response were assured to enable participants to be free of fear of social desirability bias and to encourage them to provide their genuine response. In addition, data quality was maintained throughout and appropriate statistical analysis method was used with strong model goodness of fit test. However, it was not without limitation. It was better to support the finding of this study by data collected by observational method to further strengthen the validity of the findings.

Conclusions

Less than half of midwifery educators of Ethiopian Public Universities had effective clinical teaching practice. Several factors were found to have effect on ECTP among Ethiopian midwifery educators. Clinical teaching experience, training on higher diploma in teaching profession, attaining clinical teaching workshop, number of students a clinical educator teach per clinical unit, providing objectives of clinical learning in written form to students for every clinical teaching session, using performance based assessment tool for assessing students' clinical learning and interest in clinical teaching of educators were positively associated with ECTP. Therefore, the higher diploma program and clinical trainings for educators should to be strengthened in order to deliver the clinical education effectively and efficiently. In addition, the educators and the department should adhere to the guide for ECTP such as limiting the class size to the standard for provision of effective clinical teaching.

Abbreviations

BScMERP: Bachelor of Science Degree in Midwifery education regular program; ECT: Effective Clinical Teaching; ECTP: Effective Clinical Teaching Practice; EPU: Ethiopian Public Universities; HDP: Higher Diploma Program.

Declarations

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Authors' contributions

KA designed the study, prepared the proposal, obtained funding and data, analyzed and interpreted the data and prepared this manuscript. SWG and ABB had provided guidance to the corresponding author throughout the course of the study, reviewed the paper from beginning to end and approved the manuscript for publication.

Competing interests

The authors declare that they have no competing interests.

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