

# The Effect of the Preceptorship and Mentorship Training On Preceptor's Knowledge

Perwitasari<sup>1</sup>, Nurulicha<sup>2</sup>, Moh Afandi<sup>3</sup>

<sup>1</sup>Universitas Singaperbangsa Karawang, Indonesia

<sup>2</sup>STIKes Mitra RIA Husada Jakarta, Indonesia

<sup>3</sup>Universitas Muhammadiyah Yogyakarta, Indonesia

\*Corresponding author: [bdn.perwitasari@fikes.unsika.ac.id](mailto:bdn.perwitasari@fikes.unsika.ac.id)

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## ABSTRACT

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Maternal mortality rate (MMR) and infant mortality rate (IMR) are indicators of the public health level because those are representing the quality of a national health services. Efforts to reduce MMR and IMR require multisectoral approach, one of which is through improving the quality of clinical education to build strong clinical skills among health workers, especially midwives who deal with maternal and child health. Preceptors have important role in clinical placement to provide guidance and support for midwifery students, so it is imperative for preceptor to have competencies in conducting effective preceptorship-mentorship teaching model. This study aimed to determine the effect of the preceptorship and mentorship training on preceptor's knowledge using pre-experimental design with one group pretest-posttest. This study carried out in March 2023 at STIKes "S" located in East Jakarta, Indonesia. A total of 35 respondents were recruited using the total sampling method. The intervention was provided in the form of training about preceptorship-mentorship for 2 days in a row using curriculum designed by the ACT Center Institute. The pre-test and post-test questionnaires were collected by online media Quizizz. The wilcoxon test showed that there was a significant difference in the mean score between before and after training, the mean score of knowledge before intervention was 4.03 and increased to 7.11 after intervention ( $<0.001$ ). This study concluded that there was a significant effect of training on increasing knowledge about preceptorship-mentorship. Future research is expected to evaluate the effect of training on preceptor skill and student's clinical competence.

**Keywords:** preceptorship, mentorship, training, midwifery

## INTRODUCTION

According to the Indonesian Central Bureau of Statistics (BPS), the Maternal Mortality Rate (MMR) in Indonesia in 2023 is reported 189 per 100,000 live births, this number is still quite far from achieving the SDGs (Sustainable Development Goals) target, which is less than 70 per 100,000 live births in 2030. Meanwhile, the Infant Mortality Rate (IMR) in 2023 was 16.85 per 1,000 live births (BPS, 2023). Direct causes of MMR included hypertension in pregnancy (33.1%), hemorrhage (17.03%), complications not related to obstetrics (15.7%), other obstetric complications (12.04%), pregnancy infections (6.06%), and causes from other factors (4.81%) (Indonesian Ministry of Health, 2020). Therefore, reducing maternal and child mortality is one of the country's development priorities (Nurhidajat & Kusumawati, 2018). Efforts to reduce MMR require multidimensional synergy, one of which is through improving the quality of education to produce highly competent health workers. Midwives are health workers who play an important role in accelerating the reduction of MMR and IMR because they have the authority to provide care for mothers and children independently, in collaboration and referrals. Healthcare services delivered by midwives are provided throughout a woman's life cycle, starting from the preconception period to menopause (Adnani et al., 2022). Not only in Indonesia, in Australia as many as 85% of birth deliveries are assisted by midwives (Gao et al., 2024), accordingly it is important to ensure that midwives have clinical competence after graduating from formal education.

A survey study assessing clinical skills abilities of 245 newly undergraduate nursing and midwifery in Australia highlighted that nearly a third of total participants (31.4%) were rated as

poorly and very poorly in performing clinical skills (Missen et al., 2016). The study stated the importance role of educational providers and educators to preparing healthcare students to be competent on completion of their studies. Similar research in Ethiopia examined the clinical competence of midwifery students through OSCE (Objective Structured Clinical Examination), the result showed scores of respondents ranged from 32.2% to 69,4%% with overall average score was 51.8%. The study also indicated only 32% of midwifery students has managed 20 births during clinical placement. The study emphasizes the need of improvement in quality of midwifery education, hence it is essential to conduct in-service training and effective mentoring programme (Yigzaw et al., 2015). In India, a survey involving 633 final-year midwifery students was carried out to assessed their confidence and skills in conducting antepartum, intrapartum, postpartum, and newborn care. The majority of students had score below the 50<sup>th</sup> percentile (38-50%) of confidence in all clinical skill domains, which implied the pre-service midwifery education does not align with the goal of ICM (International Confederation of Midwives) in preparing students to be confident skilled birth attendants (SBAs). The study said one of the reason was students' lack of clinical experience during their education (Sharma et al., 2015). The previous research findings confirmed a study conducted in Indonesia, the study reported that some factors contributing to strengthening midwifery education in Indonesia are effective hands-on clinical experience, role of the mentor in clinical practice, and system in the clinical environment (Adnani et al., 2022).

Quality midwifery education will have an impact on improving maternal and child health. WHO (World Health Organization) stated seven action plans as an effort to strengthen the quality of midwifery education, one of which is preparing clinical mentors or preceptors. Educational institutions need to develop effective and integrative learning to facilitate midwifery students with qualified clinical skills and a strong theoretical foundation before delivering care to the patients in health services. Preceptors are role models for students in clinical education who have an obligation to provide guidance, support, assessment and feedback in order to build midwifery students' self-confidence during clinical practice (World Health Organization, 2019). Hence, there is a need for preceptorship-mentorship training for clinical supervisors and teachers from institutions to improve the quality of clinical learning. Apart from providing students with positive learning experiences, effective clinical learning is expected to be able to improve quality of public health services (Rahmawati et al., 2023). The effective preceptorship model approach helps students (preceptee) to develop competencies in cognitive, affective and psychomotor aspects during clinical placements. Meanwhile, mentorship is clinical learning activity involving mentors and students (mentee) that require students to think critically in order to produce a reflective conclusion where the learning process is based on the principle of constructive feedback so that the mentee becomes independent. A study reported that the one-to-one preceptorship method had an effect on students' competence and self-confidence. The positive impact was greater when preceptorship was conducted with a team rather than individual preceptors (Irwin et al., 2018).

Another research revealed a gap in theory and practice because midwifery students had low confidence due to the lack of opportunities to implement their clinical skills and knowledge during their clinical placement. This gap can be overcome if students are accompanied by preceptors who are capable of guiding and supporting the preceptee (Ball et al., 2022). Based on a qualitative study that investigated preceptors' educational needs, some of vital domains to preparing good preceptors are teaching and learning strategies, communication models, the role of preceptor, and preceptorship training (Bengtsson & Carlson, 2015). Accordingly, this research aimed at determining the effect of the preceptorship and mentorship training on preceptor's knowledge.

## **METHOD**

The method of this study was pre-experimental research with one group pretest-posttest design. This study was conducted in March 2023 at School of Health Sciences "S" that located in East Jakarta. A total sampling of 35 respondents were recruited. The respondents were lecturers and clinical instructors (CI) with a midwifery education background. The dependent variable in this research was the level of knowledge about preceptorship-mentorship model approach and the

independent variable was preceptorship-mentorship training. Pre-test and post-test were carried out to collect the data before and after intervention. The data collection used the online media Quizizz, which is known as an online interactive learning platform. The respondent's level of knowledge was measured using a questionnaire containing 10 multiple choice questions that was developed by a training organization namely ACT Center. Those pre and pos test questions assessed the knowledge about the preceptorship model approach, the BST (Bedside Teaching) model, DOPS (Direct Observation of Practical Skills), Mini-Cex (Mini Clinical Evaluation Exercise), SOCA (Student Oral Case Analysis), and how to implementing constructive feedback. Data on respondent characteristics was collected via google form. Knowledge levels were divided into two categories, good knowledge if respondents answered 4-10 true questions, and low knowledge indicated by answering 1-3 true questions. Respondents were given an informed-consent sheet and given an explanation regarding the research objectives before participating in this study.

The training was carried out for two days, eight hours per day. The training was delivered by a certified instructor. The curriculum of training that was developed by ACT Center consisted of learning materials about: clinical learning strategies, clinical learning models (Bedside Teaching (BST), One Minute Preceptorship (OMP), Case Seminars, Evidence-Based Practice (EBP) applications, Case-based Learning (CBL), assessment methods and clinical evaluation (Mini-CEX, DOPS, SOCA, OSLER, Longcase, Short case, OSCE, OSCA, OSATs). The method of training was using lecture method and role play for demonstrating their competencies of clinical learning models. The post-test questionnaire was administered on the same day after the training finished. The statistical analysis was bivariate tests using Wilcoxon method to assess the differences in mean score of respondents' knowledge. This test was used because the data was not normally distributed. Data were analysed by using SPSS 25 software.

## RESULTS AND DISCUSSION

### Univariate Analysis

Table 1. Characteristic of Respondents and Level of Knowledge Before Intervention

No.	Characteristic of respondents	Low level of knowledge score 1-3		Good level of knowledge score 4-10	
		N	%	N	%
1	Age				
	26-41	5	45,5	6	54,5
	42-52	5	20,8	19	79,2
2	Occupation				
	Lecturer	1	8,3	11	91,7
	Clinical midwife	9	39,1	14	60,9
3	Education				
	D3 Midwifery	0	0	2	100
	D4/S1 Midwifery	2	33,3	4	66,7
	Profession degree	5	45,5	6	54,5
	S2 (Master degree)	3	21,4	11	78,6
	S3 (Doctoral degree)	0	0	2	100
4	History of training				
	No	5	26,3	14	73,3
	Yes	5	31,3	11	68,8
5	Clinical experiences				
	≤10 years	3	21,4	11	78,6
	>10 years	7	33,3	14	66,7
6	Teaching experiences				
	No experience	9	45	11	55
	≤5 years	1	25	3	75
	>5 years	0	0	11	100

Based on an analysis of respondent characteristics, more than a half of respondents were 42-52 years old and had a higher level of good knowledge (79%) than those aged 26 to 41 years old

(54.5%). Most of the respondents worked as clinical midwives and had good level of knowledge (60.9%). From the education characteristic, the majority of respondents were master's degree graduate (78.6%) and only 21.4% had low level of knowledge. More than fifty percent of total respondents has never attended training but had good level of knowledge (73.3%). The respondents with more than 10 years of clinical experiences dominated in this study and showed good knowledge (66,7%). According to teaching experiences, less than 5 years is categorized as early career (junior), those who had no experiences in teaching and more than five years experiences in teaching showed good level of knowledge (55% and 100%, respectively).

### Bivariate Analysis

Table 2. Level of Knowledge about Preceptor-mentorship Before and After Intervention

Variable	Before training			After training			P-value
	Mean ± SD	Min	Max	Mean ± SD	Min	Max	
score of knowledge about preceptor-mentorship	4,03 ± 1,90	0	7	7,11 ± 2,39	0	10	<0,001 <sup>‡</sup>

<sup>‡</sup>Wilcoxon test with significant p-value <0,05

The bivariate analysis using the wilcoxon test showed that there was a difference in the mean score before and after the intervention, the mean score increased from 4.03 to 7.11. The p-value results was reported <0.001, this indicated that the difference between the mean score before and after the intervention was statistically significant.

### Level of Knowledge According to Respodents Characteristics

The results of the analysis showed that the level of good knowledge about preceptorship mentorship was higher among respondents aged 42-52 years old, this age group was assumed to have more work experiences than the respondents aged 26-41 years old, therefore the knowledge related to clinical supervision was better. This age category is differentiated according to the average age of respondents, which was 42 years old. In terms of job characteristics, the majority of respondents were clinical midwives who work at independent midwife practices (PMB), clinics, community health centers and hospitals. This might be assumed that the respondents had good knowledge because they often mentoring midwifery students who are undergoing clinical placement or internships at their workplace. According to Tallam (2022), the longer a midwife has clinical experience, the more likely they have a high level of self-confidence in cognitive and clinical skill (Tallam et al., 2022). The respondents had varying educational background ranging from diploma III of midwifery to doctoral level. The greatest level of good knowledge was found in respondents with a master education level (S2). Referring to the Indonesian National Qualifications Framework (KKNI), the master's level has a higher level of depth and breadth of theory than lower levels of education. Master's level graduates are able to master application theory in certain fields of knowledge (Junaidi, et al. 2020). Researchers assume that respondents with a master's degree in education are able to answer pre-test questions better because their level of critical thinking is higher than other respondents with lower levels of education.

Based on training history, more than half of the respondents had never attended preceptorship mentorship training, but higher pre-test knowledge scores were found in this group. Even though they have not undergone training and most of them have no experience in academics career (lecturers), the majority of respondents have clinical experience of more than ten years. This indicated that the clinical experiences that respondents have is an important factor in implementing preceptorship-mentorship activities for teaching clinical skill on midwifery students. According to ICM (International Confederation of Midwives), both preceptors and lecturers must be able to maintain their clinical competencies and undertake preparation to teach clinical skills. Educational institutions also have an obligation to facilitate training or continuing education for preceptors and lecturers (ICM, 2021). The core competencies of preceptors require special consideration so that they have relevant abilities and skills to optimally guide midwifery students during clinical placement.

Not only preceptors, academic lecturers also need to maintain clinical skills to guide students in campus and clinical placement, this aims to strengthening midwifery education in Indonesia (Adnani et al., 2022).

### **The Effect of the Preceptorship and Mentorship Training on Preceptor's Knowledge**

Regarding comparative test results, there was a statistical difference in the mean scores before and after training. Even though the training evaluation was only carried out on the cognitive aspect to measure knowledge, this difference has been tested to be objective and significant ( $p$ -value  $<0.05$ ). The types of questions used to measure respondents' knowledge were in accordance with the training curriculum so that post-test scores reflected the increase in respondents' knowledge. The result of this research aligned with Kusuma's (2017) study, there was an increase in CI (Clinical Instructor) knowledge from mean score 8.8 to 14 after receiving training on bedside teaching and one minute preceptor with a significance value of 0.001. Scores on CI skills assessed by students also increased from a mean of 19.34 to 26.8 ( $p$ -value 0.001) (Kusuma, 2017). The results of this research was also supported by Amaliya's (2022) study in Pasuruan, there was an increase in scores of 40.76 ( $p$ -value 0.001) among preceptors who guided students in hospitals after receiving preceptorship training (Amaliya et al., 2022). Another similar study in Indonesia reported there was significant increase on preceptors' knowledge (0.000) after preceptorship training, mean score rose from 27.74 to 52.74 (Lestari, Jauhar, Puspitaningrum, Shobirun, Sriningsih, et al., 2021). An experimental study reported preceptorship training program has effectively increased the participation of clinical nurse in coaching students during their internship in different department at educational hospital (Mashayekh et al., 2024). Moreover, the preceptor-mentorship training in Tulungagung has positive effect on midwifery students satisfaction of clinical learning guided by the preceptors who have joined the training (Rustiana & Handayani, 2020).

Studies in Poland reported that clinical mentorship training facilitates midwifery students in improving clinical skills that they can use for clinical decision making and can contribute positively to the provision of patient care (Stefaniak & Dmoch-Gajzlerska, 2020). Another positive impact of preceptorship-mentorship activities on students is increasing the ability to think critically in providing evidence-based care. In the clinical learning process, students are encouraged to find solutions to patient problems through analyzing the information using critical thinking skills (Lestari, Jauhar, Puspitaningrum, Shobirun, & Sriningsih, 2021). This clinical learning model was included in the training program in this research, namely the Evidence-Based Practice (EBP) model. Other research recommended that the preceptorship program should be expanded, not only focusing on increasing clinical competence but also related to ward management (patient care, team, infrastructure and environment) and how to socialize in the workplace (Feltham, 2014).

Preceptors are clinical instructors who have role in determining the quality of students' clinical learning. The qualities that should possessed by good preceptor are leadership, listening and communication skills, conflict management, capacity to judge ethically and based on standards, critical reasoning, and the ability to self-reflect. The essential component to implement effective preceptorship is understanding the role of the preceptor, the learning process, and knowing the variations in learning models (Abubakar et al., 2022). According to the researchers' assumptions, the preceptorship-mentorship model curriculum in this training was relevant with clinical learning standards. The role play method during training intervention facilitated respondents to demonstrate the knowledge they gained from the training, they also received direct feedback from the training instructor so they could reflect on what should be improved to carry out effective preceptor-mentorship activities. The method of role-playing as part of training activity would positively affect preceptors' clinical teaching behaviour (CTB), therefore preceptorship training programs should be well-developed (Hong & Yoon, 2021). An integrative review revealed preceptors expectation on proper education in order to carry out preceptorship activity effectively. A formalized training is critical and need to be arranged well-planned to keep preceptors' competence relevant (Quek & Shorey, 2018). However, this research did not measure the extent to which training could influence respondents' skills, so it is recommended for further research to evaluate the skills aspect.

## CONCLUSION

This research concluded that there was positive effect of training on respondents' knowledge about preceptorship-mentorship. The mean score of preceptors' knowledge increased significantly. Training on the preceptorship-mentorship model is one strategy for improving the quality of clinical teaching, hence the goal of strengthening midwifery education in Indonesia could be achieved. Furthermore, maternal and neonatal mortality rate could be reduced if the education providers could prepare midwives graduates with the high level of confidence and skills in implementing their clinical competencies to the patients. The strength of this research is that the training was carried out by competent and certified trainer, and the curriculum used in this training reflects an updated clinical teaching model. This study suggested that clinical midwives who have worked more than 10 years need to continuously update their knowledge and skills in clinical teaching in order to provide effective clinical learning for students. Future research is expected to evaluate the effect of training preceptorship-mentorship on preceptor skills and student's clinical competencies to gain more complex findings.

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## CONFLICT OF INTEREST

There is no conflict of interest.

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## BIOGRAPHIES OF AUTHORS



Bdn.Perwitasari, S.Tr.Keb., M.Keb is a lecturer at Universitas Singaperbangsa Karawang. Her research of interest focuses on maternal and child health. She is interested in exploring midwifery sciences, evidence-based midwifery, and maternal mental health.



Nurulicha, SST., M.Keb is a lecturer at STIKes Mitra RIA Husada Jakarta. Currently, she has role as Head of Internal Quality Assurance Center. She teaches courses in midwifery complementary care and neonatal and children care, she is also author of books about diagnosis and problems in neonates.



Moh Afandi is a lecturer of nursing management at UMY (Universitas Muhammadiyah Yogyakarta) and author of insights into our past: Development of the Competencies Scale for Preceptor in Teaching Hospital.