

RESEARCH ARTICLE

Effect of Integrated Antenatal Care Training on Midwife Service Quality Improvement

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Abstract

Antenatal care (ANC) is the most effective strategy for preventing complications in pregnancy. However, the current quality of midwife antenatal care services is still considered low. One of the indicators used for assessing midwifery service quality is the technical competency indicator that includes history taking, physical examination, case management and follow up, examination recording, and effective information, communication, and education (IEC). This study aimed to measure the effect on integrated antenatal care training on the quality of midwife services. The design was a pre-test and post-test quasi-experimental study conducted in Manonjaya Public Health Center, Tasikmalaya district, from November to December 2017. Simple random sampling was applied to get 20 respondents for each intervention and control groups. The bivariate analyses used in this study were the paired t test and the Mann-Whitney test. Results showed an overall increase in service quality scores in the intervention and control groups by 5.5% and 0.86%, respectively, with a significant difference in the increase between the two groups ($p < 0.05$). Therefore, there is a significant increase in the quality of midwife after implementing the integrated ANC module and training to midwives.

Key words: Integrated antenatal care, midwife, training

Pengaruh Pelatihan *Antenatal Care* Terpadu terhadap Peningkatan Kualitas Pelayanan Bidan

Abstrak

Antenatal care (ANC) merupakan strategi pencegahan komplikasi dalam kehamilan paling efektif. Namun, kualitas pelayanan *antenatal care* bidan saat ini dinilai masih rendah. Salah satu indikator yang digunakan untuk menilai kualitas pelayanan kebidanan adalah indikator kompetensi teknis yang meliputi anamnesis, pemeriksaan fisik, penatalaksanaan dan tindak lanjut kasus, pencatatan pemeriksaan, serta komunikasi, informasi, dan edukasi (KIE) yang efektif. Penelitian ini bertujuan mengukur pengaruh pelatihan *antenatal care* terpadu terhadap kualitas pelayanan bidan. Desain penelitian ini menggunakan *pre-test and post-test quasi-experimental* yang dilaksanakan di Puskesmas Manonjaya Kabupaten Tasikmalaya dari November hingga Desember 2017. Pengambilan sampel dilakukan secara *simple random sampling* untuk mendapatkan 20 responden untuk tiap-tiap kelompok intervensi dan kontrol. Analisis bivariat yang digunakan dalam penelitian ini adalah uji t berpasangan dan Uji Mann-Whitney. Hasil penelitian menunjukkan peningkatan skor kualitas pelayanan secara keseluruhan pada kelompok intervensi dan kontrol sebesar 5,5% dan 0,86% masing-masing dengan perbedaan peningkatan yang signifikan antara kedua kelompok ($p < 0,05$). Simpulan, terdapat peningkatan kualitas bidan yang signifikan setelah penerapan modul ANC terintegrasi dan pelatihan kepada bidan.

Kata kunci: *Antenatal care* terpadu, bidan, pelatihan

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Introduction

The Indonesia Demographic and Health Survey (IDHS) 2012 recorded an increase in MMR to 359 maternal deaths per 100,000 live births, which then decreased to 305 maternal deaths per 100,000 live births in Intercensal Population Survey 2015.^{1,2} The World Health Organization (WHO) estimates that most of these deaths are avoidable through adequate access and good quality antenatal care.^{3,4} Antenatal care (ANC) is the most effective prevention strategy that aims to reduce complications during pregnancy.⁵⁻⁸ Antenatal care comprised of 10T standard includes maternal weight and height measurement; blood pressure check; upper arm circumference measurement; fundal height measurement; fetal presentation and heart rate assessment; TT vaccination status screening and vaccine provision if necessary; iron tablet provision; simple lab testing; case management; and counseling. However, the quality of ANC services is still not optimum due to the low compliance to the 10T standard.^{5,9,10}

The evaluation of ANC service quality in 2014 used the technical competency indicators that include the midwife's level of knowledge as one of the measurable indicators. This evaluation suggested that there was inadequate knowledge on ANC among midwives reflected from the fact that of the 218 midwives participated in the evaluation, only 47 (21.6%) had insufficient knowledge.^{5,6,11} Hence, improving knowledge regarding ANC service is an essential and necessary step to do.^{3,4}

The Government of Indonesia, through its Ministry of Health, has issued a policy regarding ANC services. The Ministry of Health Republic of Indonesia Regulation, Number 25 of 2014 on Child Health Efforts, in Article 6 sub-article one letter b stated that a comprehensive and quality antenatal care service provided to all pregnant women through integration with other programs.^{1,5,12,13} A midwife is required to be able to detect problems and diseases that may be experienced by a pregnant woman as early as possible that the pregnant woman will be well prepared to have a normal delivery process.¹³⁻¹⁵ The integrated ANC training performed in this study is based on the module developed by researcher consul results with experts in their fields covering theory and 10T practice guidelines.¹³ The first

day's activities included exposure to the material and simulation of practice and the second day of the participant's field practice, accompanied by the facilitator doing the integrated ANC directly to the client. The training itself involved resource persons with the qualifications and certification as trainers (ToT, CTS) comprising of practicing midwives, obgyn specialists, Head of Tasikmalaya District Health Office Chairperson, and Head of Tasikmalaya Branch of Indonesian Midwife Association. The respondents participated in a 2-day training, with no one dropped out of the training. The training started with the ice-breaking activities since the respondents seemed to be passive at the beginning of the training. The fact that this training designed using the adult learning method by combining lectures, case studies, and group discussion helped the participants be actively involved in the training until the end of the training.^{16,17}

Manonjaya Public Health Center is the public health center with the most significant contribution to MMR. It has a low K1 (first contact between the health provider and pregnant woman in the first trimester) and K4 (the fourth contact or more in the third trimester) coverage compared to other regions. Results of interviews with midwives regarding antenatal care service revealed that there was still a lack of understanding of the concept of integrated ANC service among midwives because midwives only used the 7T service standards.¹⁸ Also, shortage of medical staff to implement the immunization program; the absence of the integrated management of childhood illness (IMCI) as a cross-sectoral intervention closely related to pregnancy examination; inadequate facilities and infrastructures; inadequate equipment for laboratory testing including for hemoglobin, HIV/AIDS, tuberculosis, and diabetes mellitus; and lack of tetanus toxoid immunization screening observed.¹⁵

This study aimed to measure the effect on integrated antenatal care training on the quality of midwife services.

Methods

The study was a quantitative quasi-experiment with pre-test and post-test control group design conducted in the working area of Manonjaya Public Health Center, Tasikmalaya District, from

November to December 2017. Participants of this study were midwives who work in the health center area of Manonjaya. Participants (40 midwives) recruited using simple random sampling 40. Participants divided into intervention (n=20) and control (n=20) groups, and both groups were given a pre-test on the quality of service.¹⁷

The intervention group then received a 2-day training program using the integrated ANC module with trainers from the health office. At the same time, the control group only received the same ANC module without any training. The control group expected to read the module independently. Both groups asked to carry out integrated ANC independent practice to the client directly for four weeks. Both groups received a post-test after four weeks to assess through a post-test to measure service quality four weeks later. Bivariate analyses used the chi-square test to see the characteristics of respondents the study and Mann-Whitney test to see differences in the quality score of ANC services before and after the intervention in the two groups.^{16,19}

This study has been through ethical studies by the Health Research Ethics Committee of the Faculty of Medicine of Universitas Padjadjaran with letter number: 976/UN6.C.10/PN/2017.

Results

Before data were analyzed, a normality test

performed to assess the distribution of data using the Shapiro-Wilk test, resulting in a normal distribution of data. The homogeneity test results revealed that the two groups had no significant differences at the time of pre-test measurements. Further analysis performed on the difference in the quality improvement of the Integrated ANC service. The detailed results of this study described in Table 1.

Table 1 shows no significant difference between the two groups in terms of age, education, and length of work experience, as evident from the chi-square test result (p>0.05). It means that the two groups were homogenous and comparable.

Then the two groups before being given modules and training, the ANC service quality measurements were carried out using a questionnaire by the facilitator. After giving modules and training, measurements retaken with the same questionnaire.

Table 2 presents the service quality scores from before and after the intervention and the percentage for each sub-variable. It is apparent that, except for examination and recording sub-variables, higher increases were seen for all sub-variables in the intervention group. For the examination sub-variable, the intervention group showed a slightly lower increase when compared to the control group (4.6% vs 4.7%). In comparison, no increase found for recording sub-variable (0%) for both intervention and

Table 1 Respondent Characteristics

Characteristics	Groups		p Value*
	Intervention (n=20)	Control (n=20)	
Age (years)			0.730
20–29	9	10	
30–39	6	7	
40–49	5	3	
Education			0.723
Diploma III	14	15	
Bachelor	6	5	
Master	10	0	
Length of work experience (years)			0.928
<5	6	6	
5–9	8	9	
≥10	6	5	

Note: *chi-square test

Table 2 Comparison of ANC Service Quality Score before and after Intervention

Midwife ANC Service Quality Score	Intervention Group (n=20)			Control Group (n=20)			p Value*
	Before	After	Increase	Before	After	Increase	
History taking			9.8%			1.8%	0.199
Median	57.5	60.4		44.6	43.8		
Range	45-62.5	55.8-65.0		35-49.3	33.3-51.7		
Examination			4.6%			4.7%	0.507
Median	64.0	66.2		57.4	59.6		
Range	55.9-76.5	61.8-75		48.5-72.1	52.9-73.6		
Case management			4.3%			0%	<0.001
Median	61.4	66.0		72.6	75.6		
Range	57.6-74.3	59-78.5		65.3-86.8	65.3-86.8		
Recording			0%			0%	1.0
Median	50	50		75	75		
Range	50-75	50-75		75-100	75-100		
IEC			8.8 %			0.6%	<0.001
Median	51.3	57.0		47.4	48.1		
Range	38.5-62.2	48.7-66.7		35.9-57.0	32.7-53.8		
Combined			5.5 %			0.86%	<0.001
Median	57.0	62.0		57.5	57.5		
Range	47.2-63.0	57.5-67.5		48.8-65.0	48.8-65.0		

Note: *Mann-Whitney test

Table 3 Effect of Integrated ANC Training on Midwife Service Quality

Service Quality (Dimension)	Groups		p Value	RR (95%CI)*
	Control (n=20)	Intervention (n=20)		
History taking				
≤median	12	8	0.206	1.50 (0.79-2.86)
>median	8	12		
Examination				
≤median	10	10	1.0	1.0 (0.54-1.86)
>median	10	10		
Case management				
≤median	20	2	<0.001	10.0 (2.68-37.24)
>median	0	18		
Recording				
≤median	20	20	1.0	
>median	0	0		
IEC				
≤median	14	6	0.011	2.33 (1.13-4.83)
>median	6	14		
Combined				
≤median	15	5	0.002	3.00 (1.35-6.68)
>median	5	15		

Note: *RR (95%CI): relative risk and confidence interval of 95%

control groups. In the control group, no increase observed for the case management sub-variable.

Overall, there was a statistically significant difference in the total scores of service quality between the intervention group (5.5% increase) and the control group (0.86%, $p < 0.05$).

Table 3 shows that for the history-taking sub-variable, the participants in the control group had a 1.5 times higher risk to provide low-quality history taking when compared to those in the intervention group. The same condition was also seen for the risk of low-quality examination, where the participants in the control group had a one-time higher risk of providing low-quality examination than the intervention group. The results for case management and IEC sub-variables also presented higher risks for lower quality in the control group compared to the intervention group by showing ten times higher risk for case management and 2.3 higher risks for IEC.

When combined, the quality of care provided by participants who did not receive intervention was three times lower than those who received the intervention.

Discussion

Antenatal care is the most effective strategy to prevent complications in pregnancy.^{7,20} However, the current quality of midwife antenatal care services in Indonesia is still considered low.^{5,15} This may be attributed to the inadequate knowledge of the standardized antenatal care among midwives.⁴ This study investigated the effect of integrated antenatal care training on the quality of midwife services by comparing the quality of midwife services before and after receiving the training. Two groups of midwives were assessed, namely the intervention group ($n=20$) and control group ($n=20$).

Most of the respondents were in the age group of 20–29 years old ($n=9$ in the intervention group and $n=10$ in the control group, $p=0.730$). This age group represents the young adulthood period, which is the optimum period for applying previously learned knowledge and skills. Age influences how fast a person understands things and how developed a person's mindset is. As people get older, the mindset and the ability to understand things become more developed.^{19,21,22} The respondents in this study, therefore, were at

their peak age to learn and apply the knowledge and skills they would learn in the training.

The majority of the respondents were Diploma III graduates ($n=14$ in the intervention group and $n=15$ in the control group, $p=0.723$). Education, which is a conscious and systematic process in school, family, and community to convey the purpose of a defined concept, is an important process to empower students to live a better life.¹⁰ Thus, education level also determined who empowered the respondents in receiving the training.

In terms of the length of work experience, most respondents had been working as a midwife for 5–9 years ($n=8$ in the intervention group and $n=9$ in the control group, $p=0.928$). This experience also influenced how the respondents' performance in the training.

The analysis of the three aspects of characteristics demonstrated that the two groups were homogenous, thus suitable for comparison. Since the quality of services before the intervention was significantly different among the respondents, it was decided to compare the quality level achieved before and after the intervention in the same group first. Both the intervention and control groups showed an increase in quality. A comparison was then made between the increase in the intervention group and the increase in the control group.

The intervention group that received the ANC module and training achieved a higher increase in the quality of services (5.5%) than the control group that only received the ANC module and learned it independently (0.86%). This difference is statistically significant ($p < 0.01$). This suggested that the integrated ANC training can improve the quality of midwife services in the work area of Manonjaya Public Health Center better than just providing the module. Training is also considered an acceptable approach by the midwives.

The Indonesian Health Profile 2015 stated that efforts to improve the quality of services, including antenatal care services, can take the training and training of trainers. It expected that by participating in training, midwives would be able to improve their competencies, which will eventually improve their quality of service.²³ A similar statement is also made by Mikrajab and Rachmawati¹⁵ that routine technical training to improve obstetric competencies for midwives is very much needed.

The quality of antenatal care in Indonesia is still far from ideal, as depicted in a study by Ariyanti²⁵ that involved 69 midwives from an area in Indonesia. This study demonstrated that more than half of the respondents (60.4%) did not maintain complete patient history records, and only 56.5% performed all necessary steps when doing examinations. Although all midwives provided the necessary care to the patients, 65.2% did not have complete documentation of the patients, and only 52.2% provided complete IEC.

Training can improve a person's knowledge, skills, and attitudes because training generally aims to increase productivity.^{5,19,24} Training defined as a short-term educational and learning process aimed at increasing knowledge, attitudes, and skills to improve individual competencies.¹³ Integrated ANC training that adapted to various existing needs, especially those related to the ability to do tasks and the necessary competencies to provide the service, is very much needed.¹⁸ The content of the integrated antenatal care module and its related training has been developed based on various needs that arise in various maternal health and antenatal care situations. It also considers actual issues faced during maternal health and antenatal care services, the policies and strategies to increase the coverage and quality of antenatal services, and the monitoring and implementation of the integrated antenatal services. The core materials in this training include integrated antenatal service concepts, history taking, physical examination, follow-up management, examination result recording (MCH/cohort/PWS/P4K), and effective IEC. These strengthened with materials regarding the latest developments in a maternal emergency, the role of midwives in improving ANC service quality, and integrated ANC practices.^{3,5,25,26}

The integrated ANC training in this study considered successful because when the training provided to respondents who had never attended integrated ANC training before, it was able to increase the quality of midwife services. This training especially increases the midwives' knowledge and skills in conducting history taking, examination, case management, follow-up management, antenatal examination recording, and effective information, education, and communication (IEC) provision. Integrated ANC training is effectively designed to ensure

optimal learning efficiency is achieved through a well-developed module and good resource persons.^{7,9,20,27}

A significant increase in the quality of midwife services observed after the midwives receive the integrated ANC module and training. Nevertheless, further studies are needed to gain a more in-depth understanding of how the training affects the quality of service by comparing the implementation of the integrated ANC module in groups using different implementation technics.

Since many midwives still could not provide good quality antenatal services, the integrated ANC training should be available to them. It expected that the training would improve the midwives' capacity, and the pregnancy-related complication rate reduced.

Conclusion

There is a significant increase in the quality of midwife after implementing the integrated ANC module and training to midwives.

Conflict of Interest

All authors stated that there no conflict of interest in this study.

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