



The Correlation between Work Duration and Midwives' Knowledge of Contraceptive Implants with Their Implant Insertion Proficiency

Iman Surihartini¹, Sri Rahayu², Ni Komang Yuni Rahyani³

^{1,2,3} Midwifery Department, Poltekkes Kemenkes Denpasar, Bali, Indonesia

Corresponding Author: imansurihartini.kb@gmail.com

ABSTRACT

Article history:

Submitted, 2025/07/12

Accepted, 2025/10/06

Published, 2025/10/31

Keywords:

Knowledge; Length of Work; Skills; Midwives; Implantable Family Planning.

Cite This Article:

Surihartini I, Rahayu S, Rahyani NKY. The correlation between work duration and midwives' knowledge of contraceptive implants with their implant insertion proficiency. *J Ilm Kebidanan (The J Midwifery)*. 13(2):132-138.
doi:[10.33992/jik.v13i2.4229](https://doi.org/10.33992/jik.v13i2.4229)

The success of implant insertion is influenced by the skills of midwives as health workers. Factors such as length of service and level of knowledge are thought to be related to midwives' skills in implant insertion. The purpose of this study was to determine the relationship between length of service and midwives' knowledge of contraceptive implants with their skills in implant insertion. This study was a quantitative correlation study with a cross-sectional design. The population in this study was all midwives in the Darek Community Health Center working area, and the sample was determined using total sampling technique, where the entire population was used as the sample. The number of samples obtained was 49 midwives in the Darek Community Health Center working area. The data were analyzed using Fisher's exact test. The results of this study indicate a significant relationship between length of service and skills (p -value = 0.002) and knowledge and skills (p -value = 0.002). This study proves that there is a significant relationship between length of service and midwives' knowledge and skills in implanting contraception. The longer the work experience and the better the midwife's knowledge, the better the skills in implanting contraceptive implants tend to be.

INTRODUCTION

The government's Family Planning and Birth Control Program aims to reduce population growth and maternal mortality rates. One of the most widely used methods of contraception is the contraceptive implant, which is a plastic capsule containing the hormone levonorgestrel. The advantage of the contraceptive implant lies in its high effectiveness in preventing pregnancy. Out of 100 users, only about 1 person still experiences pregnancy, which indicates a very good success rate ¹

The success of implant placement is highly dependent on the skills of midwives as healthcare providers. Factors such as length of service and knowledge about implant contraception are thought to play an important role in improving midwives' skills. The experience of healthcare providers is considered important for the workplace because the success of a workplace is influenced by the skills and performance of the healthcare providers themselves. Performance skills are the actual behaviors displayed by each person as work achievements produced by healthcare providers in accordance with



their roles in the workplace². However, limited training budgets are one of the obstacles to improving midwives' skills in contraceptive services. In West Nusa Tenggara Province (NTB), only about 50 midwives receive family planning training each year. Data from NTB Provincial Health Office in 2024, only 4 of them were from Central Lombok District. There are 49 midwives in Darek Community Health Center, only one attended contraception training in 2024. As a result, midwives' skills in family planning services, especially implant insertion, are still not optimal. Many fail to conduct pre-placement counseling, follow standard operating procedures, or provide adequate post-placement counseling.

Several previous studies have shown that midwives' skills in implant insertion are influenced by factors such as work experience and knowledge. Sugiana, (2021)³ reported that midwives' work experience and knowledge influence their long-term contraceptive service skills. Meanwhile, Septiyana, (2024) emphasized that the clinical skills of health workers correlate with the length of practice, whereby the longer the work experience, the better the technical skills.

Based on existing research, various studies still highlight aspects of knowledge or work experience separately, and have not been conducted extensively in regions with limited access to training, such as Central Lombok. Therefore, this study aims to analyze the correlation between length of service and midwives' knowledge of implant contraception with implant insertion skills at the Darek Community Health Center, Central Lombok Regency.

METHOD

This study is an analytical observation with a cross-sectional approach. Data were collected using two main instruments: (1) a knowledge questionnaire consisting of 15 closed questions that had been validated using the Pearson Product Moment test ($p < 0.05$) with a Cronbach's alpha reliability score of 0.787, and (2) an observational checklist for implant placement skills based on standard operating procedures. The observation of midwives' skills was conducted directly by the researcher assisted by trained enumerators. Before data collection, the enumerators received standardized training to ensure assessment consistency. The observation was conducted in a non-blind manner, as the enumerators were aware of the purpose of the study. The population of this study was all midwives in the working area of the Darek Community Health Center, Central Lombok Regency, totaling 49 people. Meanwhile, the sample in this study was determined using total sampling technique, where the entire population became the sample of 49 people. Data analysis consists of univariate and bivariate analysis. Univariate analysis aims to explain each research variable grouped according to their respective characteristics, namely respondent characteristics (last education, employment status, length of employment), knowledge, and skills. Meanwhile, bivariate analysis is conducted to determine the relationship between the variables of length of employment and midwife knowledge with skills using the chi-square statistical test. The analysis was performed using the SPSS v.26 data processing program.

RESULT AND DISCUSSION

Respondent Characteristics

The characteristics of the respondents studied in this research included their level of education, employment status, and length of service as midwives in the Darek Community Health Center working area. These characteristics were important to analyze because they could influence the knowledge, skills, and performance of midwives in providing health services⁴. The characteristics of the respondents in this study are shown in Table 1.





Table 1. Respondent Characteristics

Characteristic	Frequency (n=49)	Percentage (%)
Education		
Bachelor's Degree (Midwifery)	6	12.24
Diploma III (Midwifery)	43	87.76
Employment Status		
Civil Servant (PNS)	9	18.37
Government Contract Worker (P3K)	7	14.29
Honorary/Intern	33	67.35
Work Experience		
≤3 Years	27	55.10
>3 Years	22	44.90

The majority of respondents (87.76%, n=43) held a Diploma III (D III) in Midwifery, meeting the minimum educational standard for midwives. In contrast, only 12.24% (n=6) had a Bachelor's degree (S1), indicating that most healthcare providers in this field rely on diploma-level education. Most respondents were honorary/intern workers (67.35%, n=33), suggesting that non-civil servant staff form the backbone of healthcare services at Darek Community Health Center. The remaining participants consisted of civil servants (PNS, 18.37%, n=9) and government contract workers (P3K, 14.29%, n=7). A total of 27 respondents (55.10%) had ≤3 years of work experience, while 22 (44.90%) had worked for >3 years. This indicates that over half of the midwives in the region are relatively new, though a significant proportion have longer-term experience.

Frequency Distribution of Midwives' Knowledge and Skill Level

Table 2. Frequency Distribution of Midwives' Knowledge and Skill Level

	Frequency (f)	Percentage (%)	Cumulative Percentage (%)
Knowledge Level			
Good	14	28.6	28.6
Fair	35	71.4	100
Skill Level			
Good	34	69.4	69.4
Fair	15	30.6	100

Table 2 shows the Frequency Distribution of Midwives' Knowledge Levels. The univariate analysis revealed variations in midwives' knowledge regarding Implant contraception. Out of 49 respondents, 14 (28.6%) demonstrated good knowledge, while 35 (71.4%) fell under the fair knowledge category. These findings indicate that most respondents had a moderate understanding of Implant contraception. This highlights the need for targeted interventions to comprehensively improve midwives' knowledge in the region. The data can serve as a foundation for designing evidence-based strategies tailored to the respondents' needs.

Table 2 also presents the frequency distribution of midwives' skill levels. The univariate analysis revealed variations in midwives' skill levels regarding implant contraception. Of the 49 respondents, 34 (69.4%) demonstrated good skills, while 15 (30.6%) had fair skills. These findings indicate that all respondent midwives possess adequate technical proficiency to perform implant contraception procedures.



The results also reflect positively on the quality of services provided by midwives in the working area of Darek Community Health Center, West Southwest Praya District, Central Lombok Regency. The predominance of good skill levels suggests technical readiness to deliver implant contraception services effectively. These findings can serve as a foundation for maintaining or enhancing training and supervision programs aimed at further improving midwives' competency in implant contraception provision.

Knowledge is the result of a cognitive process in which an individual gains understanding through sensory perception of a specific object, influenced by various factors⁵. Factors affecting knowledge levels include age, education, and work experience⁶.

The research findings, presented in the table 2, reveal that out of 49 respondents, 14 (28.6%) exhibited good knowledge, while 34 (71.4%) had adequate knowledge. This indicates that most respondents possessed sufficient understanding of implant contraception. Work experience was identified as a key factor influencing knowledge levels⁷. Respondents with >3 years of experience tended to have better knowledge compared to those with ≤3 years. Data showed that 33 respondents (67.3%) with >3 years of experience had good knowledge, whereas only 1 respondent (2%) with ≤3 years of experience demonstrated good knowledge. Conversely, 6 respondents (12.2%) with >3 years and 9 (18.4%) with ≤3 years had adequate knowledge. These results suggest that longer work experience significantly enhances knowledge of implant contraception, underscoring its role in improving midwives' comprehension.

Another factor contributing to midwives' knowledge levels is their educational background⁸. Education plays a crucial role in shaping an individual's ability to comprehend new information. According to Law No. 20 of 2003 on the National Education System of the Republic of Indonesia, formal education consists of primary, secondary, and tertiary levels⁹. Higher education is generally associated with improved capacity to absorb and apply knowledge in professional practice¹⁰.

The study findings indicate that the majority of midwives held a Diploma III (D-III) qualification (87.76%, n=43), while only 12.24% (n=6) had a Bachelor's degree (S-1). A strong educational foundation is essential for midwives to understand and implement knowledge about implant contraception, thereby enhancing their professional competency.

Additionally, employment status influences midwives' knowledge¹¹. The data revealed that most midwives worked as honorary staff or interns (67.35%, n=33), followed by civil servants (PNS) (18.37%, n=9) and contract-based employees (P3K) (14.29%, n=7). A supportive work environment and opportunities for continuous learning can positively impact midwives' knowledge enhancement.

Overall, the findings of this study indicate that midwives' level of knowledge about Implant Contraception is influenced by several factors, including work experience, educational background, and employment status. Although the majority of midwives demonstrated adequate knowledge, continuous efforts—such as regular training or mentoring—are necessary to further enhance their understanding of Implant Contraception.

Correlation Between Work Duration and Midwives' Skill Level

Table 3. Correlation Between Work Duration and Midwives' Skill Level

Skill Level	Work Duration						<i>p-value*</i>
	≤3 years		>3 years		Amount		
	f	%	f	%	f	%	
Good	1	2,9	33	97,1	34	100	0,002
Adequate	6	40	9	60	15	100	
Amount	7	14,3	42	85,7	49	100	



As shown in Table 3, 34 midwives demonstrated good skills in implant contraceptive services, of whom 33 (97.1%) had >3 years of work experience, while only 1 (2.9%) had ≤3 years of experience. Among midwives with adequate skills (n=15), 9 (60%) had >3 years of experience, and 6 (40%) had ≤3 years. Fisher's exact test revealed a statistically significant association between work duration and skill level ($p=0.002 < 0.05$), indicating that work experience is significantly associated with midwives' competency in implant contraceptive procedures.

Work experience also significantly influences midwives' competency. Data indicate that midwives with over three years of experience tend to demonstrate better skills compared to those with ≤3 years of practice. This is evident among midwives with adequate knowledge, most of whom exhibit proficient skills. Those with longer experience are typically more trained and confident in performing implantable contraceptive procedures. These findings align with Adnyani, (2019)¹⁷ assertion that increased work experience correlates with enhanced professional skills.

However, although most midwives displayed strong competency, a small proportion exhibited only moderate proficiency. This suggests that mastering implantable contraceptive procedures requires sustained time and intensive training. Supporting this, Williams and Hodges (2023)¹⁸ emphasize that skill improvement depends on repeated practice and hands-on experience. Thus, continuous training and iterative practice are essential to enhance midwives' technical skills in implant insertion.

Correlation Between Knowledge and Midwives' Skills

Table 4. Correlation Between Knowledge and Midwives' Skills

Skill Level	Knowledge Level						<i>p-value*</i>
	Good		Adequate		Amount		
	f	%	f	%	f	%	
Good	14	41,2	20	58,8	34	100	0,002
Adequate	0	0	15	100	15	100	
Amount	14	28.6	35	71.4	49	100	

Table 4 presents the results of the chi-square test of the relationship between midwives' knowledge and skills. The results from 49 midwives showed that 14 (41.2%) midwives who had good knowledge also had good skills. A total of 20 (58.8%) midwives with adequate knowledge also had good skills. Meanwhile, all 15 midwives (100%) with adequate knowledge also had good skills. The appropriate Fisher's exact test yielded a significant p -value of 0.002 (<0.05), indicating a statistically significant relationship between midwives' knowledge and their skills in providing implant contraception services.

Skills refer to an individual's ability to perform an activity or task effectively, acquired through learning, practical training, and experience¹². Proficiency reflects a person's competence in addressing tasks or challenges efficiently, accurately, and with agility¹³. Such abilities develop over time via repeated training and hands-on experience. Skills encompass both technical mastery of specific tools or procedures and non-technical competencies, such as effective communication and decision-making. Strong skills enable individuals to perform tasks optimally and deliver satisfactory outcomes¹⁴.

As shown in Table 4, following training on contraceptive implant insertion, most midwives demonstrated strong proficiency, with 34 respondents (69.4%) rated as skilled. In contrast, 15 respondents (30.6%) exhibited moderate skills but had not yet achieved optimal performance. Key factors influencing midwives' competence in implant insertion include knowledge level and work experience¹⁵. Among the 34 skilled respondents (69.4%), 20 (40.8%) possessed adequate knowledge, while 14 (28.6%) had high knowledge. Conversely, all 15 respondents (30.6%) with moderate skills



had only adequate knowledge. This suggests that comprehensive knowledge of contraceptive implants significantly enhances midwives' ability to perform the procedure effectively¹⁶.

In summary, this study highlights that midwives' competency in implantable contraceptive procedures is shaped by knowledge, work experience, and training exposure. To optimize skills, midwives must receive ongoing training and frequent opportunities for practical reinforcement.

CONCLUSION

There was a significant correlation between Work Duration and Midwives' Knowledge of Contraceptive Implants with Their Implant Insertion Proficiency. These findings indicate that improvements through continuous training, formal education, and strengthened practice are still needed.

ACKNOWLEDGMENTS

Thanks are expressed to the respondents and the research institution who provided support during the research process.

REFERENCES

1. Laelah N, Aprilina HD. Hubungan durasi pemakaian alat kontrasepsi implan dengan perubahan berat badan dan gangguan siklus menstruasi di wilayah kerja Puskesmas Padamara [The Relationship between the duration of use of implantable contraceptive devices and weight changes and menstrual cycle disorders in the Padamara community health center work area]. *J Keperaw Muhammadiyah*. 2020;8(September):171–176.
2. Simanjutak FE, Nababan D, Harefa K, Hakim L, Manurung J. Faktor-faktor yang berhubungan dengan kinerja bidan dalam hubungannya terhadap angka kematian ibu di Kabupaten Labuhanbatu [Factors related to the performance of midwife in relation to maternal mortality rate in Labuhanbatu district]. *J Healthc Technol Med*. 2021;7(2):2615–2619.
3. Sugiana E, Hamid SA, Sari EP. Faktor-faktor yang mempengaruhi penggunaan kontrasepsi implan [Factors influencing the use of contraceptive implants]. *J Ilm Univ Batanghari Jambi*. 2021;21(1):372.
4. Budiarti EM, Kusumaningrum DE, Gunawan I, Sumarsono RB, Aziz AA, Burham ASI, et al. Analisis karakteristik responden dalam menggali pengembangan parents asissted learning model (palm) terhadap kemampuan literasi peserta didik [Analysis of respondent characteristics in exploring the development of the parents assisted learning model (palm) on students' literacy skills]. *Manag Indones J Educ Manag*. 2023;4(2):126–35.
5. Muliawati NK, Ni LPD., Puspawati PD, Putri SM. Hubungan pengetahuan dengan kepatuhan masyarakat dalam adaptasi kebiasaan baru masa pandemi covid-19 di tempat kerja [The relationship between knowledge and community compliance in adapting to new habits during the covid-19 pandemic in the workplace]. *J Keperawatan [Internet]*. 2022;14:19–26. Available from: <http://journal.stikeskendal.ac.id/index.php/Keperawatan>
6. Sitepu DE. Hubungan usia, pekerjaan dan pendidikan pasien terhadap tingkat pengetahuan dagusibu di puskesmas wilayah Lampung Tengah [The relationship between age, occupation and education of patients and the level of knowledge of dagusibu in the Central Lampung health center]. *J Ilm Wahana Pendidik [Internet]*. 2024;10(6):196–204. Available from: <https://jurnal.peneliti.net/index.php/JIWP>
7. Dardi S, Kelen FL. Hubungan tingkat pengetahuan dan pengalaman kerja perawat dengan penerapan protokol kesehatan covid-19 [The relationship of nurses' knowledge level and work experience with the implementation of covid-19 health protocols]. *Diagnosis J Ilm Kesehatan*. 2022;17(1):27–31.
8. Fitriyani. Analisa faktor yang mempengaruhi bidan dalam deteksi dini faktor risiko tinggi kehamilan di kabupaten Pekalongan [Analysis of factors influencing midwives in early detection





- of high-risk pregnancy factors in pekalongan regency]. *J Kebidanan Indones* [Internet]. 2023;14(2):13–24. Available from: <https://jurnal.stikesmus.ac.id/index.php/JKebIn/article/view/853>
9. Syaadah R, Ary MHAA, Silitonga N, Rangkuty SF. Pendidikan formal, pendidikan non formal dan pendidikan informal (Formal education, non-formal education and informal education). *Pema (J Pend Pengabd Kepada Masy)*. 2023;2(2):125–31.
 10. Wiranda. Peran pendidikan dalam membangun pengetahuan masyarakat [The role of education in building public knowledge]. *Jurnal Inov Pendidik*. 2024;7(12):300–5. Available from: <https://journalpedia.com/1/index.php/jip/article/view/1285>
 11. Amalia, Prasetya H, Murti B. Path analysis on factors affecting job performance of midwives at community health centers in Mojokerto, East Java. *J Heal Policy Manag*. 2021;6(1):21–34.
 12. Safitri NA, Ilmiawan MF, Islami D, Khadavi M, Ansori MI. Pelatihan dan pengembangan untuk meningkatkan keterampilan karyawan era digital [Training and development to improve employees' skills in the digital era]. *J Ris dan Inov Manaj*. 2024;2(2):95–110.
 13. Helwida, Mansur A, Kania Rahman I. Peran life skill dalam menumbuhkan wawasan dan kemandirian santri SMPIT As Syifa Boarding School Wanareja Subang [The role of life skills in developing insight and independence of students at SMPIT As Syifa Boarding School Wanareja Subang]. *Rayah Al-Islam*. 2021;5(01):113–28.
 14. Yusniar, Heriyana, Nurlaili. Pengaruh ketrampilan kerja terhadap kinerja karyawan yang dimediasi oleh beban kerja pada usaha kerajinan tas aceh di Ulee Madon (The influence of work skills on employee performance mediated by workload in the acehnese bag craft business in Ulee Madon). *J Visioner Strateg*. 2021;10(2):65–70.
 15. Rasyid PS. Pengaruh pemberian informasi prosedur pemasangan implant terhadap tingkat kecemasan calon akseptor implant di kota Gorontalo (The effect of providing information on implant installation procedures on the anxiety level of prospective implant acceptors in Gorontalo City). *J Nas Ilmu Kesehat*. 2019;1(3):15–27.
 16. Wati TSD, Wahyuni I. Midwife care in ny.r family planning with implant method in mandiri midwife practice Sri Kurniawati. *Sci Midwifery*. 2021;9(2):541–5.
 17. Adnyani RPLN, Dewi KDA. Pariwisata Bali merupakan salah satu destinasi terbaik di dunia. Salah satu jasa penunjang terpenting dalam pengembangan sektor pariwisata tersebut adalah jasa penginapan. *Persai: E-Jurnal Manaj*. 2019;8(7):4073–101.
 18. Williams AM, Hodges NJ. Effective practice and instruction: A skill acquisition framework for excellence. *J Sports Sci* [Internet]. 2023;41(9):833–49. Available from: <https://doi.org/10.1080/02640414.2023.2240630>