

EFFECTIVENESS OF SIMP KS3B APPLICATION IN IMPROVING FAMILY PLANNING SERVICE QUALITY

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Abstract

Injectable contraception is a hormonal contraceptive method administered through injection and consists of two types, namely DMPA (Depo Medroxy Progesterone Acetate) and combination. Monitoring and management of data on participants in the 3-month injectable contraception program is carried out through the SIMP KS3B application so that health workers can provide more targeted services. This study aims to assess the effectiveness of using the SIMP KS3B application in improving the quality of family planning services in the working area of the Denkesyah Garut Clinic. The research method used a quasi-experimental design with a posttest nonequivalent control group. The research population consisted of midwives in the working area of the Denkesyah Clinic, with purposive sampling technique. Univariate data analysis used frequency distribution, while bivariate analysis used the Mann Whitney test and multivariate analysis used logistic regression. The study was conducted from December 30, 2024, to January 17, 2025. The results showed that the dimensions of ease, usefulness, interest, and actual use had a value of $p = 0.000$. Multivariate analysis showed that the dimension of actual use was the most influential with a beta coefficient value of 2.310 ($p = 0.000$). In conclusion, the SIMP KS3B application is more effective than manual family planning records in improving the quality of family planning services. It is recommended that this application be recommended by the Health Office as a medium for recording and reporting family planning services.

Keywords: SIMP KS3B application, Quality of family planning services

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1. Introduction

According to WHO [1] Worldwide, there are 4,000,000 (45%) injectable contraceptive users. In the United States, approximately 30% of the population uses injectable contraceptives, while in Indonesia, 31.6% of the population uses

injectable contraceptives. In Indonesia, the most commonly used contraceptives are Depo Medroxy, a three-monthly injectable, and Cyclofem, a one-monthly injectable.

Based on data obtained from the 2021 Indonesian Health Profile, the

number of active family planning (KB) participants in Indonesia is 24,196,151. Active KB participants according to the type of contraception in Indonesia are 301,436 (1.2%) using condoms, 15,419,826 (63.7%) using injectable KB, 4,123,424 (17.0%) using pills, 1,790,336 (7.4%) using IUD/AKDR, 118,060 (0.5%) using MOP, 661,431 (2.7%) using MOW, and 1,781,638 (7.4%) using implants [2].

The 3-monthly injectable contraceptive program is one of the most widely used contraceptive methods in Indonesia. Accurate data management related to the use of the 3-monthly injectable is crucial to ensure smooth distribution, evaluation, and monitoring of its use.[3] Without a good information system, manual recording or a non-integrated system will increase the risk of recording errors, data duplication, or even negligence in providing services to KB participants [1].

Better monitoring process through the application, health workers can provide more timely and relevant services to KB participants [4]. For example, staff can remind participants about their next injection schedule or identify users who may need further consultation. This supports efforts to improve the quality of reproductive health services that meet the needs of 3-monthly injectable contraceptive users [2].

The author created an innovation to overcome these problems, namely the 3-Month Injectable KB Program Monitoring Information System (SIMP KS3B) application. One of the existing media that can be used to record the use of 3-Month Injectable KB is manual Midwifery Care, but in the current digital era, the latest innovations in the form of electronic media are needed as a means of documentation activities, such as the 3-Month Injectable KB Program Monitoring Information System Application (SIMP KS3B) (3-Month Injectable KB Program Monitoring Information System). The 3-Month Injectable KB Program Monitoring Information System Application (SIMP KS3B) is an application that contains information on 3-month Injectable KB

acceptors with attractive menus in it, namely the recording/documentation menu, as well as follow-up and therapy. The advantages of this application are: data entered by users is guaranteed confidentiality, data recapitulation is stored digitally, makes it easier to search for therapy history, and shortens recording time and can be more accurate in providing therapy [5].

2. Method

The type of research used is a quasi-experimental method with the research design is a posttest nonequivalent control group design, namely a design that assesses the posttest use of the 3-Month Injectable KB Program Monitoring Information System (SIMP KS3B) application and manual Askeb recording through a comparison of the effectiveness of the dimensions of ease, usefulness, interest and real users of the 3-Month Injectable KB Program Monitoring Information System (SIMP KS3B) application compared to manual Askeb recording. The population is midwives in the Denkesyah Clinic work area (Denkesyah Clinic, Kodim Clinic, Yonif 303 Clinic, Yonif 323 Clinic, Pratama Baleendah Clinic and Rumkitban Clinic 03.08.02 Galunggung). The sampling technique uses purposive sampling.

3. Results And Discussion

The results of the frequency distribution of respondent characteristics based on age and education can be seen in table 1 as follows:

Table 1. Frequency Distribution of Respondent Characteristics (n=46)

Variable	Categor y	Groups				Sig
		SIMP KS3B		Manual Recording		
		F	%	F	%	
Age (years)	20–25	16	35	13	28	0,071
	26–35	16	35	18	39	
	36–45	12	26	12	26	
	46–50	2	4	3	7	
Education	D3	32	70	26	57	0,157
	D4	7	15	11	24	
	S1	5	11	7	15	
	S2	2	4	2	4	

Total 46 100 46 100

Source: Primary Data Processing Results, 2025

Based on Table 1, it can be seen that the p value on the confounding variable $p > 0.05$, this indicates that the variable does not have a significant influence on the relationship being studied, so each variable is worthy of being compared. It is known that the majority of respondents in the intervention group were aged between 20 years to 25 years, namely 16 people (35%) and aged 26 years to 35 years as many as 16 people (35%) and in the control group were aged between 26 years to 35 years, namely 18 people (39%). Based on education, the majority of respondents in the intervention group were D3 Midwifery education, namely 32 people (70%), the same as the control group with a majority of D3 Midwifery education as many as 26 people (57%).

Table 2. Frequency Distribution of the Effectiveness of Using the SIM PM KS3B Application in Improving the Quality of Family Planning Services in the Health Office Clinic Area

Variabel	Kategori	Groups			
		Intervention		Control	
		F	%	F	%
<i>(ease of use)</i>	Low	0	0	10	22
	Moderate	10	22	32	70
	High	36	78	4	9
<i>(usefulness)</i>	Low	0	0	6	13
	Moderate	6	13	36	78
	High	40	87	4	7
<i>(behavioral intention)</i>	Low	0	0	3	7
	Moderate	3	7	31	67
	High	43	93	12	26
<i>(actual system use)</i>	Low	2	4	1	2
	Moderate	3	7	32	70
	High	41	89	13	28
Total		46	100	46	100

Description: Univariate Test

Based on Table 2, in terms of ease of use, most of the intervention group had a good perception of ease, namely 36 people (78%), while in the control group, those who had the sufficient category were 32 people (70%). In terms of usefulness, most of the respondents in the intervention group had a good category regarding usefulness, namely 40 people

(87%), while in the control group, respondents had a sufficient category, namely 36 people (78%). In terms of behavioral intention, the respondents in the intervention group had a good category, namely 43 people (93%), while in the control group, respondents had a sufficient category, namely 31 people (67%). In terms of actual system use, the respondent group had a good perception of real users, namely 41 people (89%), while in the control group, most of the respondents had a sufficient category, namely 32 people (70%).

Table 3. Effectiveness of Using the SIM PM KS3B Application in Improving the Quality of Family Planning Services in the Health Office Clinic Area

Group	N	Mean	Difference	Std. Deviasi	P value
Ease of use SIMP KS3B	46	2,78		0,542	
Manual Recording Usefulness of SIMP KS3B	46	1,87	0,91	0,417	0,000
Manual Recording Behavioral intention of SIMP KS3B	46	2,78		0,469	
Manual Recording Actual System use of SIMP KS3B	46	1,96	0,82	0,341	0,000
Manual Recording Behavioral intention of SIMP KS3B	46	2,93		0,542	
Manual Recording Actual System use of SIMP KS3B	46	2,20	0,73	0,250	0,000
Manual Recording Actual System use of SIMP KS3B	46	2,85		0,491	
Manual Recording Actual System use of SIMP KS3B	46	2,26	0,59	0,470	0,000

Description: Mann-Whitney test

Table 3 shows that the average value of the ease of use aspect for the 3-Month Injectable Family Planning Program Monitoring Information System

(SIMP KS3B) group is greater than that for the manual Askeb recording group, with a value of $\rho=0.000$ ($\rho<0.05$). Therefore, it can be concluded that there is a significant difference in the ease of use aspect for the 3-Month Injectable Family Planning Program Monitoring Information System (SIMP KS3B) and manual Askeb recording.

The average value of the usefulness aspect for the 3-Month Injectable Family Planning Program Monitoring Information System (SIMP KS3B) group is greater than that for the manual Askeb recording group, with a value of $\rho=0.000$ ($\rho<0.05$).

It can be concluded that there is a significant difference in the usefulness aspect for the 3-Month Injectable Family Planning Program Monitoring Information System (SIMP KS3B) and manual Askeb recording.

Showing the average value of the interest of the users of the 3-Month Injectable KB Program Monitoring Information System (SIMP KS3B) group is greater than the manual Askeb recording group with a value of $\rho=0.000$ ($\rho<0.05$), it can be concluded that there is a significant difference in the interest of the users of the 3-Month Injectable KB Program Monitoring Information System (SIMP KS3B) with manual Askeb recording. Showing the average value of the real users of the 3-Month Injectable KB Program Monitoring Information System (SIMP KS3B) group is greater than the manual Askeb recording group with a value of $\rho=0.000$ ($\rho<0.05$), it can be concluded that there is a significant difference in the real users of the 3-Month Injectable KB Program Monitoring Information System (SIMP KS3B) with manual Askeb recording.

Table 4. Multivariate Test

Media	B	Partial Eta Squared	Sig
SIMP KS3B			
Ease of Use	1,870	0,000	
Usefulness	1,957	0,000	

Behavioral Intention	2,196	0,000		
Actual System use	2,261	0,000		
Pillai's Trace		0,995	0,000	<0,05
Manual Medical Record				
Ease of Use	0,913	0,000		
Usefulness	0,913	0,000		
Behavioral Intention	0,739	0,000		
Actual System use	0,587	0,000		
Pillai's Trace		0,285	0,000	<0,05

Description: Pillai's Trace Test

Based on the results in Table 4, the beta coefficient value of the 3-Month Injectable Family Planning Program Monitoring Information System (SIMP KS3B) group is more effective than the manual Askeb recording group. The partial eta-squared value of the 3-Month Injectable Family Planning Program Monitoring Information System (SIMP KS3B) group is more effective than the manual Askeb recording group, and the significance value for Pillai's Trace is 0.000. Therefore, the significance value is less than the 0.05 level, or $0.000 < 0.05$, so the H_a decision is accepted. Therefore, it can be concluded that the 3-Month Injectable Family Planning Program Monitoring Information System (SIMP KS3B) application is effective in improving the quality of family planning services in the Denkesyah Clinic work area.

Based on the research results that the average value of the ease aspect of the 3-Month Injectable Family Planning Program Monitoring Information System (SIMP KS3B) group is greater than the manual Askeb recording group with a value of $\rho = 0.000$ ($\rho < 0.05$), it can be concluded that the 3-Month Injectable Family Planning Program Monitoring Information System Application (SIMP KS3B) is more effective than manual midwifery care recording seen from the ease of use dimension, usefulness aspect, behavioral intention aspect, and actual system dimension using the Technology Acceptance Model (TAM).

In line with the research results of Priliani N, [6] that the Use of the SIGA application by DP2KBP3A Employees, DP2KBP3A Employee Training and Development related to SIGA has a positive and significant effect on the Effectiveness of DP2KBP3A Services both partially and simultaneously or together.

The 3-Month Injectable Family Planning Program Monitoring Information System (SIMP KS3B) application is an application developed using PHP RAD as the basis for creating a localhost web-based application that can be used by multiple users using a custom localhost or IP address.

Manual documentation has long been used and is a common practice among healthcare workers. However, it has several weaknesses that make it less effective than the 3-Month Injectable Family Planning Program Monitoring Information System (SIMP KS3B), particularly in terms of ease of use. Challenges with manual recording include a longer and more repetitive recording process. Manual recording often requires entering the same data across multiple forms, which increases the risk of redundancy and errors, and the potential for document loss or damage.

The implementation of an information technology-based health information system has become a key strategy for improving the quality of health services, including family planning services. An information system designed to meet user needs will positively impact service effectiveness by increasing the speed, accuracy, and continuity of data recording [7]. In this study, the SIMP KS3B application was proven to significantly improve the quality of 3-monthly injectable family planning services compared to manual recording, as reflected in all dimensions of the Technology Acceptance Model (TAM).

The use of the 3-Month Injectable Family Planning Program Monitoring Information System (SIMP KS3B) application has higher benefits compared

to manual recording in several key aspects, including increasing work efficiency. The application makes it easier for health workers to record, access, and manage patient data more quickly than manual recording. Minimizing the risk of data loss: With a digital system, the risk of data loss or damage due to human error or environmental factors can be significantly reduced. Facilitating clinical decision-making: Patient data stored in the application can be accessed quickly and more accurately. Assisting midwives in making better decisions regarding midwifery care. Improving the accuracy and consistency of recording: The application has validation features and recording standards that ensure more accurate data compared to manual methods that are more prone to writing errors or inconsistent data input. Accelerating reporting and monitoring: Data stored in the system can be directly processed for reporting and analysis purposes without the need for manual recapitulation, thereby increasing effectiveness in clinical management [8].

The perceived ease of use dimension is an initial factor influencing user acceptance of an information system. A system that is easy to learn and operate will reduce user resistance and lessen the cognitive burden on healthcare workers [9]. Hasil penelitian ini menunjukkan bahwa SIMP KS3B is easier to use than manual record-keeping, allowing midwives to focus more on clinical aspects rather than administrative ones. This finding aligns with previous research that found ease of use significantly influences information system adoption in primary healthcare facilities.

In addition to ease of use, perceived usefulness also plays a crucial role in improving service effectiveness. An information system that is perceived as useful will improve user performance, work productivity, and the quality of clinical decisions [10]. SIMP KS3B provides tangible benefits through easier access to acceptor data, monitoring of injectable contraceptive follow-up

appointment schedules, and the provision of more accurate and structured data. This aligns with research showing that an integrated family planning information system can improve the quality of reporting and program monitoring on an ongoing basis.

The behavioral intention dimension in TAM indicates the user's readiness and desire to continue using the system [9]. This interest is formed when users experience the convenience and benefits directly in daily practice [11]. In this study, the high level of interest of midwives in using SIMP KS3B indicates that the application has met the needs of users in the field. This finding is consistent with the results of other studies which state that interest in using health information systems is influenced by the perception of the effectiveness and suitability of the system with the service workflow [12].

Actual system use is the most concrete indicator in assessing the success of implementing an information system [13]. A system that is simply perceived as easy and useful, but not used consistently, will not significantly impact service quality. The KS3B SIMP demonstrated a higher level of actual use compared to manual recording, indicating that the system is truly integrated into family planning practices. This supports the notion that actual use of information systems contributes directly to improved service quality and clinic management efficiency [14].

In line with the research results of Meidiawani M [15] that user satisfaction with an information system is defined as the user's view of an information system in real terms, not only on the technical quality of a system, the higher the user's assessment of the quality of a system, the higher their satisfaction with the system. If the system quality is not good, the user will feel uncomfortable using the ePPGBM Application system which will result in the user being dissatisfied with the Application.

The researcher's assumption is that the actual use of the 3-Month Injectable

Family Planning Program Monitoring Information System (SIMP KS3B) application is the most determining aspect in the effectiveness of improving midwifery services compared to ease of use, usefulness, and user interest. Although ease of use, usefulness, and interest are important factors in the initial stages of use and the sustainability of technology use in daily practice, they can be determined through increased actual use.

4. Conclusion

The 3-Month Injectable Family Planning Program Monitoring Information System (SIMP KS3B) application is more effective than manual midwifery care recording, based on ease of use, usefulness, behavioral intention, and actual system, using the Technology Acceptance Model (TAM) in the Denkesyah Clinic work area.

Theoretical Suggestions: This information is expected to serve as a basis for the development of midwifery science, particularly in the field of family planning midwifery care. Midwives are expected to increase the use of the 3-Month Injectable Family Planning Program Monitoring Information System (SIMP KS3B) application for more effective recording and reporting of family planning acceptors, so that the recorded data can be used to identify risks and take appropriate action. For clinics, it is hoped that the 3-Month Injectable KB Program Monitoring Information System (SIMP KS3B) application can be used to implement the established standard operating procedures (SOPs), and the 3-Month Injectable KB Program Monitoring Information System (SIMP KS3B) can be used to evaluate the effectiveness of the family planning program, so that the program can continue to be improved.

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