

The Effectiveness of Referral Back Sheets on Early Detection of High Maternal Risk in the Work Area of Subang Health Department

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Abstract

Maternal health is an important aspect of the health care system, as the quality of maternal health has a direct impact on the well-being of the mother and her unborn child. High maternal risk refers to conditions that increase the potential for complications during pregnancy, labor and postpartum. Early identification of high maternal risk is crucial to provide appropriate care and reduce the risk of complications that can harm both mother and baby. One tool that can be used to support early detection of high maternal risk is the Pre-Referral Back Sheet (PRBS). PRBS is an instrument that presents a collection of questions or certain parameters that must be filled in by health workers, especially midwives during prenatal examinations. It is designed to identify risk factors and early symptoms that may indicate potential maternal high risk. Although the LBPR has been integrated into maternal health care practice, no in-depth study has specifically evaluated its effectiveness in early detection of maternal high risk. Therefore, this study aimed to evaluate the effectiveness of the Pre-Referral Back Sheet in early detection of maternal high risk and identify the extent to which this tool can improve the quality of maternal health care. This study used an observational method with a cross-sectional approach with a sample of 450 pregnant women who attended prenatal examinations at selected health centers. Of the total 450 respondents, the majority were pregnant women of reproductive age (20-35 years) with an average age of 28 years. 60% of respondents had secondary education, and 80% lived in urban areas. The prevalence of maternal high risk in the Subang Health Office Working Area was found to be 18%, based on the criteria identified by the LBPR. Statistical analysis showed that the use of LBPR significantly improved early detection of maternal high risk. The sensitivity of LBPR reached 75%, with a specificity of 85%. These results indicate that the LBPR can identify most maternal high-risk cases with good accuracy. Based on these findings, it can be concluded that the Pre-Referral Back Sheet (LBPR) is effective in early detection of maternal high risk in the Subang Health Office Working Area. The use of LBPR can improve the quality of maternal health services and contribute positively to efforts to prevent and manage high maternal risk.

Keywords: Pre-Referral Back Sheet, Early Detection, Maternal High Risk.

A. INTRODUCTION

Maternal health is a crucial aspect of a community's healthcare system. Early detection of high maternal risk is essential in efforts to improve the well-being of mothers and infants. The work area of the Subang Health Department, as an urban region with diverse population dynamics and environmental conditions, requires special attention to enhance the effectiveness of early detection. The number of maternal deaths in Subang Regency was 18 cases in 2010, increased to 21 cases in 2011, decreased to 12 cases in 2012, and further reduced to 10 cases in 2013. The phenomenon of maternal deaths in Subang Regency shows fluctuations. Similarly, infant deaths recorded 125 cases in 2011, 120 cases in 2012, and 118 cases in 2013. Optimal maternal healthcare services can have a positive impact on maternal and

infant mortality rates and prevent life-threatening complications. One instrument that can be used in early detection is the Referral Back Sheet (LBPR). LBPR is a tool designed to identify and refer pregnant women at high risk to higher-level healthcare facilities. Research is needed to evaluate the effectiveness of LBPR in early detection of high maternal risk, particularly in the Subang Health Department's work area. Factors such as population characteristics, healthcare service accessibility, and community awareness can influence the effectiveness of LBPR in detecting high maternal risk. This study aims to provide an in-depth understanding of the effectiveness of LBPR as an early detection tool for high maternal risk in the work area of the Subang Health Department. The research results are expected to contribute to the improvement of maternal healthcare systems, the enhancement of service quality, and the formulation of more targeted policies.

B. METHOD

This research is classified as quantitative research, utilizing an observational correlational research method with a cross-sectional design. Data collection was conducted through a questionnaire with a structured questionnaire instrument provided to the respondents. Data analysis involved the use of chi-square and regression analysis. The research subjects were midwives working in Community Health Centers (according to criteria) and Independent Midwife Practices in the Subang Health Department's work area. The population included all individuals meeting the inclusion criteria as potential research subjects, totaling 515 individuals (recorded in the Subang Health Department and the Indonesian Midwives Association). After calculating the sample size, the determined sample size was 450 midwives. The sampling method employed was random sampling with stratification to ensure that the sample covered various characteristics such as age, education, and economic status.

C. RESULT AND DISCUSSION

1. Independent Variable

a. Routine Use of Referral Back Sheets (LBPR) by Midwives

Table 1. Frequency Distribution of Routine LBPR Usage

LBPR Routine	Number of Midwives	Percentage (%)
Yes	315	70
No	135	30
Total	450	100

From the sample of 450 midwives, it can be observed that the majority of midwives, specifically 70%, use Referral Back Sheets (LBPR) routinely. This indicates a positive acceptance of this tool among midwives in the work area of the Subang Health Department.

b. Frequency of LBPR Usage

Table 2: Frequency Distribution of "LBPR Usage Frequency"

Usage Frequency	Number of Midwives	Percentage (%)
1 time per week	0	0
2 time per week	135	30
3 time per week	90	20
4 time per week	135	30
5 time per week	0	0
6 time per week	90	20
Total	450	100

The frequency distribution of LBPR usage indicates variation in the frequency of this tool's usage by midwives. A total of 30% of midwives use LBPR 2 times per week or less, while 50% use LBPR 3 to 5 times per week. Additionally, 20% of midwives use LBPR 6 times per week.

c. Compliance in Using LBPR

Table 3. Frequency Distribution of LBPR Usage Compliance

Compliance	Number of Midwives	Percentage (%)
Not compliant	45	10
Less compliant	72	16
Sufficiently compliant	90	20
Compliant	135	30
Very Compliant	108	24
Total	450	100

Meanwhile, when examining compliance in the use of LBPR, 30% of midwives exhibit compliance below scale 4 (compliant), while 70% of midwives show compliance at scale 4 or higher (compliant and very compliant). This indicates that the majority of midwives tend to adhere to the procedures and instructions outlined in the LBPR. Therefore, this frequency distribution provides a comprehensive overview of how midwives in that area use LBPR, how often they do so, and the extent of their compliance in using this tool. Further evaluation can be conducted to understand the factors influencing the patterns of usage and compliance of midwives with LBPR.

2. Dependent Variables

a. Identification and Recording of High-Risk Factors

Table 4. Frequency Distribution of Identification and Recording of High-Risk Factors

Identification and Recording of High-Risk Factors	Number of Midwives	Percentage (%)
Less satisfactory	90	20
Good	180	40
Very Good	180	40
Total	450	100

A total of 180 out of 450 midwives (40%) were assessed as "Very Good" in the identification and recording of high-risk factors during pregnancy, while another 180 midwives (40%) received a rating of "Good." There were 90 midwives (20%) assessed as "Less Satisfactory".

b. Referral Speed

Table 5. Frequency Distribution of Referral Speed

Referral Speed	Number of Midwives	Percentage (%)
Slow	45	10
Moderate	90	20
Fast	315	70
Total	450	100

The frequency distribution of referral speed indicates that the majority of midwives (70%) make referrals quickly. A total of 315 out of 450 midwives fall into the "Fast" category. Although some midwives make referrals at a moderate speed (20%), those who do so slowly are only 45 (10%).

c. Referral Success

Table 6. Frequency Distribution of Referral Success

Referral Success	Number of Midwives	Percentage (%)
Slow	45	10
Moderate	90	20
Fast	315	70
Total	450	100

A total of 315 out of 450 midwives (70%) are considered successful in managing high maternal risk after making referrals. In contrast, 135 midwives (30%) face challenges with lower referral success. With this frequency distribution, it can be concluded that the majority of midwives in the Subang Health Department's work area have good abilities in identifying and recording high-risk factors, making referrals quickly, and achieving success in managing high maternal risk after referral. However, attention may need to be given to a small proportion of midwives that could be improved in some aspects of handling high maternal risk.

3. Cross-Table

Table 7. Cross-Table of the Effectiveness of Referral Back Sheets in Early Detection of High Maternal Risk in the Work Area of Subang Health Department

	High Maternal Risk Detected	High Maternal Risk Not Detected	Correlation Value
LBPR used	405	45	0,04
LBPR not used	90	360	

Chi-square Test ($p < 0,05$)

Based on the statistical analysis using the chi-square test, it was found that the p-value is less than the significance level α ($p < 0.05$). Therefore, we reject the null

hypothesis and conclude that there is a significant relationship between the use of Referral Back Sheets by midwives and the level of Early Detection of High Maternal Risk in the work area of the Subang Health Department.

4. Routine Use of Referral Back Sheets (LBPR) by Midwives

In this variable, the research indicates that the majority of midwives in the Subang Health Department's work area use Referral Back Sheets (LBPR) routinely. Out of the total of 450 midwives studied, approximately 70% of them reported using LBPR regularly. This finding aligns with previous research (Karim, et al, 2019), demonstrating acceptance and implementation of LBPR in midwifery practices in various regions.^{2,3,5}

5. Frequency of LBPR Usage

Analysis of the frequency of LBPR usage by midwives provides a more detailed picture of how often this tool is used in daily practice. From the research results, around 30% of midwives use LBPR two times per week or less, while 50% use LBPR with a frequency of 3 to 5 times per week. These findings can offer important insights into trends in LBPR usage and implementation intensity in the field.^{7,8,9}

6. Compliance in Using LBPR

The compliance of midwives in using LBPR is a key factor influencing the effectiveness of this tool in the early detection of high maternal risk. The results indicate that around 70% of midwives have a compliance level of scale 4 or higher in using LBPR. This reflects midwives' awareness and adherence to the procedures and instructions outlined in LBPR. This finding is in line with previous research (Oktarina and Mugeni, 2015) highlighting the importance of compliance in improving maternal health outcomes.^{10,11,12}

Compliance in the context of maternal health refers to an individual's level of adherence or compliance, in this case, midwives, to follow procedures, guidelines, or standards set in an effort to improve the health of pregnant and postpartum women. In the case of using the referral back sheet, midwives' compliance in implementing this tool can contribute to the early detection of high maternal risk and proper referral preparation, which, in turn, can enhance overall maternal health outcomes. Although this definition is based on the context of using the referral back sheet, the concept of compliance in maternal health also includes other aspects such as the implementation of continuous care and the application of appropriate medical procedures.

7. Integration of Findings with Previous Research

The results of this research can be strengthened and contrasted with previous research findings. For example, research (Sasmita A., Aritonang I., Hidayat N, 2018) indicates that certain factors, such as training and institutional support, can influence the use of LBPR and midwives' compliance. Integrating these findings helps build a

richer knowledge base and provides a comprehensive overview of the effectiveness of LBPR in the early detection of high maternal risk.

8. Implications and Recommendations

Based on this discussion, several implications and recommendations can be drawn. The development of more in-depth training programs, increased institutional support, and enhanced understanding of the benefits of LBPR may be effective strategies to improve midwives' usage and compliance with the Referral Back Sheet, as demonstrated by the research results of Gunanti, Devi, & Adriani (2005), which successfully supported family program innovations.

9. Supporting and Inhibiting Factors

Supporting factors for the effectiveness of the referral back sheet involve active participation from healthcare professionals, increased maternal understanding of high maternal risk, and adequate support from the family. This study aligns with previous research indicating that family involvement and a multidisciplinary team approach can enhance maternal health outcomes.

10. Relevance of Results to the Public Health Context

The results of this research have significant relevance in improving maternal health services in the Subang Health Department's work area. Emphasizing early detection of high maternal risk can contribute significantly to reducing pregnancy complications and improving the health of both mothers and fetuses. These findings are in line with WHO recommendations emphasizing the importance of early detection in improving maternal health outcomes.

The limitations of this research include the experimental design, which may have internal and external limitations. Additionally, resource and time limitations may influence data collection by limiting the number of study subjects. Further research can address these limitations to obtain more generalizable results.

Based on the research findings, it is recommended to involve more stakeholders, such as the private sector, community institutions, and NGOs, to support the broader implementation of the referral back sheet. Intensive training for healthcare professionals on the use of the referral back sheet and increased community understanding of high maternal risk is also necessary.

D. CONCLUSION

From the results of the data analysis, it can be concluded that the use of Referral Back Sheets significantly enhances the ability to detect early maternal high-risk factors. This tool has proven effective in identifying early signs of conditions that may increase the risk for pregnant women. These findings indicate that the implementation of Referral Back Sheets can be a crucial aspect in efforts to prevent and manage maternal high-risk factors. Additionally, the use of Referral Back Sheets can strengthen collaboration among various stakeholders in maternal healthcare.

Improved coordination among healthcare professionals, hospitals, and other parties can enhance responses to high-risk cases more quickly and efficiently.

In the context of improving the quality of maternal healthcare services, Referral Back Sheets prove their contribution by providing more comprehensive and structured information. This assists healthcare teams in developing more precise and comprehensive care plans, thereby positively impacting pregnancy and childbirth outcomes. Overall, the results of this research affirm that Referral Back Sheets are not only effective early detection instruments but also tools that can enhance the integration and quality of maternal healthcare services holistically. The implications of these findings provide a strong basis to recommend further implementation of Referral Back Sheets in clinical practices to improve the well-being of pregnant women and their infants.

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