

THE INFLUENCE OF SIGNAL APPLICATION ON MOTHERS' KNOWLEDGE REGARDING PREGNANCY, POSTPARTUM, AND NEWBORN EMERGENCIES IN BANTUL REGENCY

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ABSTRACT

The problem of Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) in Indonesia is the highest national priority that requires a focused solution. The highest MMR and IMR in DIY, namely Bantul Regency. MMR in 2022 was 16 cases, while IMR in 2022 was 90 cases, in 2023 there were 33 cases. The causes of maternal death are multifactorial, including postpartum hemorrhage, preeclampsia, sepsis, infection, and postpartum complications. In infants, common causes of death are asphyxia, transverse lie, and narrow pelvis. In addition, there is a delay in detecting and handling emergencies. And families do not yet have sufficient ability to recognize and detect high-risk pregnancies early. To make it easier for mothers to detect themselves earlier about recognizing danger signs, a technological innovation is needed that is packaged in an application that is used to identify danger signs in pregnant women, giving birth, postpartum and neonates. Type of experimental quantitative research with one group pre-test – post-test design. The design in this study did not use a control group but used a group that was given an intervention, namely Health promotion using the SIGNAL application and then given observations before and after. The population was 30 mothers who used the SIGNAL application in Bantul Regency. The sampling technique used in this study was Purposive Sampling. The type of instrument in this study was a questionnaire sheet. The research period was September to October 2024. Based on the results of the t-test analysis (paired sample t-test), it can be obtained that t count is greater than t table, which is $37.470 > 1.68488$ and Sig. (2 tailed) = $0.000 < 0.05$, then H_0 is rejected and H_a is accepted. The significance result is $0.000 < 0.05$, then H_0 is rejected and H_a is accepted, meaning that the hypothesis states that there is a difference in the results of maternal knowledge about pregnancy, postpartum and BBL emergencies before and after using the SIGNAL Application. After using the SIGNAL application, pregnant women's knowledge about pregnancy, postpartum and newborn emergencies increased.

Keywords: BBL; level of knowledge; pregnancy emergencies; postpartum

INTRODUCTION

Maternal and infant mortality rates are two indicators commonly used to determine the level of health in a country. Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) in Indonesia are the highest national priorities that require focused solutions because the incidence is very high, namely 4,005 in 2022 and increasing to 4,129 in 2023, even though the target is 70 per 100,000 live births in 2030. While IMR in 2022 was 20,882 and in 2023 it was recorded at 29,945 (MPDN, 2023). IMR in the Special Region of Yogyakarta (DIY) was 43 cases out of 36,250 live births (11.8%). The highest AKI and AKB in DIY are in Bantul Regency, AKI in 2022 was 16 cases, while in 2023 it dropped to 9 deaths but still ranked the highest in DIY (Bantul Health Profile, 2023). The Infant Mortality Rate (IMR) in DIY was 303 cases out of 36,250 live births in 2022. IMR in Bantul Regency reached a fairly high figure in 2022, namely 90 cases, in 2023 it decreased by 33 cases of infant death (Bantul Health Profile, 2023). The causes of maternal death are multifactorial, including postpartum hemorrhage, preeclampsia, sepsis, infection, and postpartum

complications. Common causes of infant death in DIY are asphyxia, transverse lie, and narrow pelvis. In addition, other causes of infant death that are often found in DIY are congenital abnormalities (DIY Health Office, 2023). In addition, one of the causes of maternal and infant death is the delay in detecting and handling emergencies. Currently, most families do not have sufficient ability to recognize and detect early on high-risk pregnancies, which is one of the causes of delays in handling pregnancy complications. Low-risk pregnancies over time can become high-risk or even very high-risk. Special and continuous monitoring is needed so that mothers with low risk do not become high-risk or even very high-risk. This is where the role of the husband and family is to assume responsibility, care for and increase respect and a high desire to care for pregnant, giving birth and postpartum mothers. Mothers and families should also maintain their health regularly, check according to schedule with health workers/midwives and immediately go to a health facility if there are danger signs or complications during pregnancy.

Bantul Government's efforts to reduce MMR and IMR include establishing a class for pregnant women and the Childbirth Planning and Complication Prevention Program (P4K). In addition, the Ministry of Health ensures that every mother has access to quality health services, including maternal health services, delivery assistance by trained health workers, postpartum care for mothers and babies, special care and referrals if there are complications, and family planning services. Increasing public awareness, especially for prospective mothers at high risk, to be more vigilant and to minimize the incidence of complications during pregnancy and support from all of us is expected to reduce maternal and infant mortality rates. The role of mothers and families is very much needed in promotive and preventive efforts to support government programs in efforts to reduce maternal and neonatal mortality rates. Mothers and families also have a major and strategic role and are the key to success in these efforts. To make it easier for mothers to detect themselves early on in recognizing danger signs, a technological innovation is needed that is packaged in an application that is used to identify danger signs in pregnant, laboring, postpartum and neonate women. Where the information has been adjusted to the information contained in the KIA Book. The general objective of this study was to determine the effect of maternal knowledge about pregnancy, postpartum, and newborn emergencies after using the SIGNAL application.

METHOD

This research design uses quantitative research methods. Or pre-experimental design with a one group pre-test - post-test design. The design in this study did not use a control group but used a group that was given an intervention, namely Health promotion using the SIGNAL application, then observations were carried out before and after. The population in this study was 30 mothers who used the SIGNAL application in Bantul Regency. The sampling technique used was Purposive Sampling. The type of instrument used a questionnaire sheet. The research time was September to October 2024.

RESULT AND DISCUSSION

The research has been conducted with a sample size of 30 mothers. Based on the data obtained, it was then tabulated and presented in a table, based on the results of the t-test analysis (paired sample t-test), it can be obtained that $t_{count} > t_{table}$, namely $37,470 > 1.68488$ and $Sig. (2\text{-tailed}) = 0.000 < 0.05$, then H_0 is rejected and H_a is accepted. The significance result is $0.000 < 0.05$, so H_0 is rejected and H_a is accepted, meaning that the hypothesis states that there is a

difference in the results of mothers' knowledge about pregnancy, postpartum and BBL emergencies before and after using the SIGNAL Application.

The causes of maternal and infant mortality vary, in mothers including postpartum hemorrhage, preeclampsia, sepsis, infection, and postpartum complications. While the common causes of infant mortality in DIY are asphyxia, transverse position, and narrow pelvis. In addition, other causes of infant mortality that are often found in DIY are congenital abnormalities (DIY Health Service, 2023). One of the efforts to reduce the incidence of AKI and AKB is by using SIGNYAL which supports the Bantul Health Office program. This study was conducted to determine whether there was a difference in maternal knowledge about maternal and infant emergencies after using SINYAL. Respondents in this study were 30 pregnant women. Before conducting the research, the questionnaire tool was tested for validity. Of the 30 respondents, in the Age variable, the most respondents were aged 20-35 years, as many as 24 people or 80%. In the Education variable, the most mothers had a high school education, as many as 22 people or 73%. And in the work variable, the most mothers were unemployed, as many as 14 people or 47%. By collecting mothers before the day of socialization of the use of SIGNYAL, then measuring their level of knowledge using a questionnaire tool, the average result was 65.33 (mean1).

Then measuring the level of knowledge again after socialization and use of SIGNYAL with an average result of 79 (mean2). From these results, there is a mean difference of 13.73. When measured, the Standard Deviation difference resulted in a result of 5.1. Where the calculation of t count was carried out with a result of 14.7 which then carried out a different test with the t test (paired sample t-test) then the results obtained were that t count was greater than t table, namely $14.71 > 2.04$ and Sig. (2 tailed) = 0.000 < 0.05, then H_0 is rejected and H_a is accepted. So it can be concluded that there is an effect of using the SIGNYAL application on maternal knowledge. From these results, the significance of 0.000 < 0.05, then H_0 is rejected and H_a is accepted, meaning that the hypothesis states that there is a difference in maternal knowledge results between before and after using the SIGNYAL application. The level of knowledge about maternal and infant emergencies in the sample included in the good category only includes the understanding of emergencies and the consequences if no treatment is carried out. However, if viewed from the points in the pre-test and post-test questionnaires as a whole, the sample included in the good level of knowledge category is still said to be unable to fully understand what is meant by maternal and infant emergencies properly and correctly. The level of knowledge obtained in the good category in this sample may be influenced by the sample's pregnancy experience. This is also in line with Akiliu Solomon's research (2015) which states that the experience of pregnancy and childbirth of pregnant women is a time to gain various knowledge to understand various complaints and symptoms during pregnancy and childbirth.

A person's knowledge can be influenced by several factors including education, experience, socio-culture, economy, environment, information or mass media, and age. Information in the form of applications can be easily accepted and known. Information obtained from formal or informal education can also influence changes or improvements in a person's knowledge (Budiman, 2014). This form of information can actually be obtained in various ways, one of which can be obtained from health education/health promotion. Notoadmodjo (2016) stated that health education is an activity or effort to market or sell and introduce health messages or health efforts until the community is able to accept and carry out a health behavior. From the ability of the community to

accept and carry out a health behavior, there will be an increase in community knowledge. The results of this study are also in line with research conducted by Farhati, etc. (2018) on the application of the ASIH application to improve the quality of service where the use of the application was obtained faster and more effective in improving the quality of antenatal care services. The use of applications which are one of the fast ways to obtain information and appropriate actions is also in line with research conducted by Hikmawati (2020) on the differences in the use of the Moncsa application and the KIA book on the knowledge of pregnant women. Where by using the application, pregnant women are more interested in their knowledge about pregnancy than reading the KIA book.

CONCLUSION

This study was attended by 30 pregnant women. Based on data analysis, it is said that there is a significant difference in maternal knowledge between before and after using the SIGNYAL application. In other words, $t_{count} > t_{table}$, which means H_a is accepted and H_0 is rejected. So it can be concluded that there is an effect of using the SIGNYAL application on maternal knowledge about emergencies.

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