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Review Article

Effectiveness (P4K) with the Si Dora Backpack Innovation (Save Pregnant Women Movement with Blood Donor Alert) in Anticipating Pregnancy Risks at the Mantup Lamongan Health Center

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ABSTRACT. *The Maternity Planning and Complication Prevention Program (P4K) proposed by the Government aims to monitor pregnancy towards safe and secure delivery. The Movement to Save Pregnant Women with Blood Donor Alert (Si Dora Backpack) is part of the implementation of the P4K program. The purpose of the study was to analyze the effectiveness of P4K with the innovation of the Dora Backpack to anticipate pregnancy risk in pregnant women in the working area of the Mantup Health Center in Lamongan Regency.This type of research is quasi-experimental with Post-test Only Control Group Design. The population of this study were pregnant women in the third trimester in the work area of the Mantup Health Center and Tikung Health Center totaling 262 pregnant women. The sampling technique is purposive sampling. The number of samples was 176 pregnant women, consisting of 88 control pregnant women and 88 intervention pregnant women. Univariate data analysis with frequency distribution table, bivariate analysis with Mann Withney and Logistic Regression. Based on the results of the Mann Withney test in the control and intervention groups, ap value of 0.000 means that P4K with the Si Dora Backpack Innovation is effective in increasing the ability of pregnant women to anticipate the risk of pregnancy and based on the results of the Logistics Regression test, external variables do not affect the ability to anticipate pregnancy risk factors, namely age with p value 0.341, education with p value 0.587, and occupation with p value 0.631. P4K With Si Dora's Backpack Innovation is effective in increasing the ability of pregnant women to anticipate the risk of pregnancy*

Keywords: *P4K, Si Dora's Backpack, Ability to perform early detection of pregnancy risk*

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1. INTRODUCTION

Maternal Mortality Rate (MMR) is one of the indicators of the success of a country's services. In the Sustainable Development Goals (SDGs), the target for maternal mortality is expected to fall below 70 per 100,000 live births by 2030. From the 2018 Riskesdas data, it was reported that there was a decrease in the absolute number of maternal deaths from 4,999 mothers in 2015 to 4,295 mothers in 2017. The decrease in the absolute number of infant deaths from 33,278 babies in 2015 to 27,875 babies in 2017 throughout Indonesia. However, this decrease is still above the SDGs target. (Ministry of Health of the Republic of Indonesia, 2021).

The current condition in Indonesia based on the results of the 2015 Inter-Census Population Survey (SUPAS) proves that the MMR is 305 per 100,000 live births. The results of the 2017 Indonesian Demographic Health Survey showed that the MMR was 24 per 1000 Live Births. Reducing the Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) is a priority for health development as stated in Presidential Regulation Number 18 of 2020 concerning

the National Medium-Term Development Plan for 2020-2024, for this reason various efforts are needed to reduce MMR and IMR. The target in 2024 is to be able to reduce MMR by 183 per Live Births, and IMR of 16 per 1000 Live Births. (Ministry of Health of the Republic of Indonesia, 2021).

The problem of maternal mortality and morbidity in Indonesia is still a major problem. Reducing the Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) is one of the indicators of the success of regional development. Maternal death is the death of a woman caused during pregnancy or within 42 days after delivery. This can occur due to a condition related to or aggravated by her pregnancy or in its management, but does not include maternal deaths caused by accidents (WHO 2014).

Pregnancy is a physiological condition, but normal pregnancy can also turn into pathological pregnancy. Pathology in pregnancy is a complication disorder or complication that accompanies the mother during pregnancy. High risk in pregnancy can be found when approaching pregnancy, early pregnancy, middle pregnancy, inpartu and even after delivery. Pregnant women who experience medical disorders or health problems will be included in the high-risk category, so the need for implementation of care during pregnancy will be great (Manuaba 2010).

The government-initiated Childbirth Planning and Complication Prevention (P4K) program aims to monitor pregnancy towards a safe and secure delivery with the target being all pregnant women. P4K with the installation of stickers consisting of birth attendants, birth places, birth companions, transportation, and prospective blood donors. It is hoped that the implementation of the P4K program can reduce maternal mortality. Because all pregnant women who have been given stickers can be monitored by all components of society, husbands, families and midwives quickly and accurately. In order for monitoring to be successful. From the community's perspective, it is necessary to prepare with a village preparedness system by and for the community (Indonesian Ministry of Health, 2012).

The birth planning and complication prevention (P4K) program has been implemented in Lamongan Regency. Prospective donors have been prepared and written on the P4K sticker. However, there are still obstacles when pregnant women need blood immediately. When needed for donation, prospective donors are often in a condition where they cannot donate, so it takes time to find other prospective donors. The Blood Transfusion Unit (UTD) also needs enough time for the blood collection process, screening tests for Transfusion Transmitted Infections (IMLTD), blood type confirmation tests and blood crossmatch test reactions to determine the reaction between donor blood and patient blood. This condition means that the need for blood cannot be met immediately, thus worsening the condition of pregnant women in need. (Mantup Health Center, 2020).

In Lamongan Regency, the maternal mortality rate in 2020 reached 14 cases, 83.67 per 100,000 live births. while in the Mantup Health Center work area in 2020 there were no maternal deaths. (2020 Mantup Health Center KIA Report). The number of pregnant women in the Mantup Health Center work area, Mantup District in 2020 reached 617 people (2020 PWS KIA Report). The number of obstetric service coverage with complications was 123

people. 10 of them were cases of postpartum hemorrhage. The case of hemorrhage was a delivery at the Mantup Health Center, bleeding occurred due to uterine atony or retained placenta. Referral to the Hospital was made and required a blood transfusion. To get blood to the Lamongan PMI, the family must provide a replacement donor. This is because the availability of blood at the PMI is lacking, especially in the era of the COVID-19 pandemic there has been a decrease in donors. It takes a long time for families to find replacement donors, which has a negative impact on mothers who experience bleeding, because they cannot get blood donors quickly. From the assessment and analysis of obstetric complication cases, the KIA program implementers created the Save Pregnant Women Movement with Blood Donor Alert (Ransel Si Dora) innovation (Puskesmas Mantup, 2020).

The Save Pregnant Women with Blood Donor Alert (Ransel Si Dora) Movement is a program that is part of the implementation of the birth planning and complication prevention (P4K) program by strengthening the implementation of the blood donor alert pillar to ensure the availability of blood needed for pregnant, childbirth and postpartum women. The target of Ransel Si Dora is that every pregnant woman has at least 2 donors who have donated their blood to PMI. Donors do not have to have the same blood type as the pregnant woman. All donated blood will be managed by the PMI Lamongan UTD, and pregnant women who have been registered in this program can be guaranteed the availability of blood when they need blood. If the pregnant woman, childbirth until the end of the postpartum period does not need blood, then the blood that has been donated by the donor for the pregnant woman can be used for other patients in need (Mantup Health Center, 2020).

UTD PMI Lamongan district collaborates with the Mantup Health Center in implementing P4K with Ransel Si Dora to ensure the availability of blood for pregnant women in need. In this program, if there are pregnant women who need blood, UTD PMI only needs to perform a blood crossmatch test reaction. Meanwhile, the blood collection process, screening test for Transmitted Infections Through Blood Transfusion (IMLTD), and blood type confirmation examination have been carried out at the beginning. Bleeding cases in pregnant women usually require complete blood transfusions. Whole blood is stored at a temperature of 2oC to 6oC with a shelf life depending on the anticoagulant and preservative (Ministry of Health, 2015), currently the shelf life of whole blood is 30 days. Blood processing for pregnant women is carried out using the FIFO (First In First Out) system, a blood processing method to remove the first blood that comes in as the first blood to come out. Every day four blood bags are provided for each blood type. (Ministry of Health, 2015).

2. METHOD

The type of quasi-experimental research with Post-test Only Control Group Design. The population of this study was pregnant women in the third trimester in the working area of Mantup Health Center and Tikung Health Center totaling 262 pregnant women. The sampling technique was purposive sampling. The number of samples was 176 pregnant women consisting of 88 control pregnant women and 88 intervention pregnant women. Univariate data analysis with frequency distribution table, bivariate analysis with Mann

Withney and Logistic Regression. An ethical feasibility test has been carried out at KEPK STIKES Guna Bangsa Yogyakarta.

3. RESULTS

In this univariate analysis, the frequency distribution of each external variable studied will be described, which is shown in the following table:

Table 1. Frequency Distribution of Age, Education, and Occupation, Between Experimental ,Group and Control Group

External Variables	Group			
	Experiment		Control	
	N	%	N	%
Age				
Teenager	29	33	33	37.5
Mature	59	67	55	62.5
Total	88	100	88	100
Education				
Low	7	8	13	14.8
Tall	81	92	75	85.2
Total	88	100	88	100
Work				
Work	44	50	26	29.5
Doesn't work	44	50	62	70.5
Total	88	100	88	100

Based on table 1. above, it shows that based on the external variable of age, the majority of respondents are adults aged > 25 – 45 years, namely 59 (67%) respondents in the experimental group and 55 (62.5%) respondents in the control group.

Based on the education obtained in the experimental group and the control group regarding the ability to anticipate pregnancy risks, almost all respondents had a higher education, namely 81 (92%) respondents in the experimental group and 75 (85.2%) in the control group.

Based on the work obtained in the experimental group and the control group regarding d regarding the ability to anticipate pregnancy risks, the majority of respondents worked as many as 62 (70.5%) in the control group, half of the respondents worked and 44 (50%) did not work.

1. Frequency Distribution Data on the Ability to Anticipate Pregnancy Risks

In this univariate analysis, the frequency distribution of the ability to anticipate pregnancy risks for each component studied will be described, as shown in the following table.

Table 2. Frequency Distribution of Knowledge, Mother's Ability to Detect Risk, Independence in Getting Help, and Ease of Getting Blood Donors Between the Experimental Group and the Control Group

External Variables	Group			
	Experiment		Control	
	N	%	N	%
Knowledge				
Good	74	84.1	58	65.9
Enough	8	9.1	5	5.7
Not enough	6	6.8	25	28.4
Total	88	100	88	100
Risk Detection Capability				
Good	82	93.2	62	70.5
Not enough	6	6.8	26	29.5
Total	88	100	88	100
Independence				
Good	82	93.2	71	80.7

Not good	6	6.8	17	19.3
Total	88	100	88	100
Convenience				
Easy	3	3.4	1	1.1
Not easy	0	0	2	2.3
No Need	85	96.6	85	96.6
Total	88	100	88	100

Based on table 2. above, it shows that based on the knowledge component, almost all respondents in the experimental group have good knowledge, namely 74 (84.1%). Respondents and most of the respondents in the control group had good knowledge, namely 58 (65.9%) respondents.

Based on the components of the mother's ability to detect pregnancy risks early, almost all respondents in the experimental group had good abilities, namely 82 (93.2%) respondents and the majority of respondents in the control group, namely 62 (70.5%) respondents.

Based on the component of maternal independence to obtain assistance, almost all respondents had good abilities, namely 82 (93.2%) respondents in the experimental group and 71 (80.7%) respondents in the control group.

Based on the component of the ease of mothers to obtain blood donors, almost all respondents did not need it, namely 85 (96.6%) respondents in the experimental group and 85 (96.6%) respondents in the control group.

Bivariate Analysis

1. **The Effectiveness of P4K Si Dora Innovation on the Ability to Anticipate Pregnancy Risks in the Experimental Group and Control Group**

Analysis to see the ability of pregnant women to anticipate pregnancy risks after being given the P4K program with the Si Dora innovation and only using P4K without innovation in both groups, the results of the data processing are as follows:

Table 3. Mann-Whitney Analysis of Risk Anticipation Ability Pregnancy

Group	N	Anticipation Ability Risk		NormalityData
		Post test		
		Mean Rank	*P-value*	
Experiment (P4K Innovation Si Dora)	88	98.00	0,000	0,000
Control (P4K)	88	79.00		

Based on Table 4.3, it can be interpreted that the results of data normality with a significance value of 0.000 indicate that the data is not normally distributed, so a non-parametric statistical test is used, namely the Mann-Whitney Test. The results of the Mann-Whitney analysis show that the mean rank value in the experimental group is 98.00 and in the control group is 79.00 with a significance value of

0.000 is smaller than 0.05 ($p<0.05$). So the conclusion is that P4K with the Si Dora Backpack Innovation is effective in anticipating the risk of pregnancy.

Multivariate Analysis

1. **Analyzing the Influence of External Variables on the Ability to Anticipate Pregnancy Risks in the Experimental Group and Control Group**

Based on bivariate analysis, significant variables are then analyzed multivariately using a statistical regression test model to test the effect of using external variables on the dependent variable. Basically, the statistical regression test is used to test whether the equation model (regression) formed is suitable for predicting variable Y. To analyze the effect of external variables on the ability to anticipate risk using logistic regression. The results of the analysis are as follows:

Table 4. Results of the Logistic Regression Test analysis between external variables (age, education, occupation) and the dependent variable (ability to anticipate pregnancy risks).

Variables in the Equation		Sig.	Exp(B)
Step 1a	Age	.341	.666
	Education	.587	.710
	Work	.631	1.219
	Constant	.745	.570

Results of the analysis: it can be concluded that all external variables do not affect the ability to anticipate pregnancy risks, namely age with a p value of 0.341, education with a p value of 0.587, and occupation with a p value of 0.631.

4. DISCUSSION

Mantup Health Center and Tikung Health Center are located in Lamongan Regency. The respondents in this study were pregnant women. The respondents were selected using proportional sampling. Factors that influence the ability to detect early pregnancy risks in this study include age, education, and occupation. Most of the respondents were adults > 25 - 45 years old, namely 59 (67%) respondents in the experimental group and 55 (62.5%) respondents in the control group. This criterion is taken based on adult age and adolescent age because in adulthood and adolescence there are differences in receiving information or knowledge. Age is one of the relative indicators for the stage of physical, cognitive and psychosocial development. Adults are able to make their own decisions based on the value system and knowledge they have so that they can determine what is good and what is not good for them. The age between 21-60 years is also called adulthood where at this age emotions are not too turbulent (Rohmah, 2013).

In this study, almost all respondents were highly educated, as many as 81 (92%) respondents in the experimental group and 75 (85.2%) in the control group. In Law no. 12 of 2012 concerning Higher Education, Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual religious strength, self-control, personality, intelligence, noble morals and skills needed by themselves, society, nation and state. The levels of education according to this Law consist of basic education, secondary education and higher education, but in this study

the levels or levels of education used are low and high education levels. Low education levels consist of no school, not graduating from elementary school, graduating from elementary school, and junior high school. While the levels of higher education are high school and college.

Based on the work obtained in the experimental group and the control group about the ability to anticipate pregnancy risks, most respondents worked as many as 62 (70.5%) in the control group, half of the respondents worked and did not work, namely 44 (50%). According to research by Hasnah and Atik (2013), the type of work done by pregnant women will affect their pregnancy and childbirth. Excessive workload causes pregnant women to get less rest, which results in red blood cell production not being formed optimally and can cause mothers to have anemia or be called anemia. According to the researcher's assumption, based on the results of the study above, it is known that pregnant women who are likely to have a greater workload cause pregnant women to get less rest, causing pregnant women to experience fatigue without realizing it.

Descriptive of Mother's Ability to Anticipate Pregnancy Risks

In this study, maternal knowledge about the Birth Planning and Complication Prevention Program (P4K) was obtained from the results of the answers to the knowledge question group, namely about P4K Stickers, Standard Antenatal Services, Pregnancy Danger Signs, Blood Donation, Village Ambulances and Postpartum Contraception. The question group was arranged based on the contents of the P4K sticker components (P4K stickers, blood donation and village ambulances) and also based on the indicators of program success to be achieved (P4K Stickers, Standard Antenatal Services, Pregnancy Danger Signs and Family Planning/KB).

Based on the results of univariate analysis data processing, it was found that most of the knowledge question groups were answered correctly by respondents. In general, almost all respondents in the experimental group had good knowledge, namely 74 (84.1%) respondents and most respondents in the control group had good knowledge, namely 58 (65.9%) respondents. Knowledge is very necessary for survival so as not to be left behind by the progress of the times. The better the knowledge, the better a person will behave because if behavior is not based on knowledge and awareness, behavior will be temporary or not last long (Notoatmojo, 2012).

Knowledge is the result of knowing and this occurs after the person senses a particular object. Most human knowledge is obtained through the eyes and ears. Knowledge or cognitive is a very important domain for the formation of a person's actions. Because from experience and research it turns out that behavior based on knowledge will be more lasting than behavior that is not based on knowledge. This will have a positive impact on pregnant women, namely helping the government reduce morbidity and mortality rates. The innovation decision process begins with the knowledge stage where at this stage individuals learn about the existence of an innovation and seek information about the innovation (Roger, 2003).

The results of this study are supported by previous research conducted by Sukesi, entitled "The Effect of Counseling on Mothers' Knowledge and Attitudes About P4K Stickers"

showing that it can be seen in the results of the statistical test, the p-value (0.001) <α (0.05) is obtained. This shows that there is an effect of counseling on mothers' knowledge about P4K stickers (Astik, 2021).

According to the researcher's assumption that knowledge is one of the factors that influence the utilization of the complication prevention childbirth preparation program when the mother's knowledge increases where the aim is to gain the ability to make decisions and actions related to the complication prevention childbirth preparation program. The formation of new behavior in a person begins with someone knowing in advance about the stimulus in the form of material or objects outside it so that it creates knowledge in that person. Knowledge is a basic aspect in determining a person's behavior to realize or not, to be able to regulate their own behavior.

The Effectiveness of P4K with the Si Dora Backpack Innovation on Mothers' Ability to Anticipate Pregnancy Risks

In this study, it was found that the ability of pregnant women to anticipate pregnancy risks through P4K with the innovation of Ransel Si Dora was more effective than the ability of pregnant women to anticipate pregnancy risks through P4K alone without innovation. The results of this study are also in line with Pratiwi Putu Irma (2021), namely that the results of using web-based applications have an effect on increasing the knowledge of posyandu cadres regarding early detection of stunting, this means that there is a real difference in the knowledge of posyandu cadres before and after the intervention.

With the innovation of Si Dora Backpack, pregnant women get information about high-risk pregnancies, pregnant women who need blood will get information about blood donor services quickly, accountably along with information on the availability of blood and donors who are ready to donate in real time and this has cut access to the flow of blood needs. P4K with the innovation of Si Dora Backpack (Save Pregnant Women with Blood Donor Alert Movement) has an important role in efforts to prevent maternal morbidity and mortality.

This is supported by similar research also explained by Saputra et al., (2020) where the web application check risk is one part of the internal system in mothers in adapting to every change experienced during their pregnancy including making the right decisions in the face of risk. This is in accordance with the nursing theory according to Roy that humans are seen as holistic adaptive systems in all aspects that are interdependent through the process of input, control, effectors, output and feedback as a form of adaptive behavioral response. And so on from this feedback it returns to being a stimulus that continues to be processed continuously. It can be interpreted that a good understanding related to knowledge about high-risk pregnancy will result in good behavior to carry out regular pregnancy checks.

In knowledge, experience is the most important thing in improving better knowledge, according to Soekidjo Notoatmodjo (2010) that experience can be obtained from one's own experience or that of others. Experience that has been obtained can expand one's knowledge. Experience that can influence knowledge is not only seen from positive experiences, but negative experiences can also increase knowledge.

The Influence of External Variables (Age, Education and Occupation) on Mothers'

Ability to Anticipate Pregnancy Risks

Based on field conditions during the research process, there are several factors that influence the ability of pregnant women to anticipate pregnancy risks, namely:

1. Age

There is no influence between age and the ability of pregnant women to anticipate pregnancy risks in the birth planning and complication prevention (P4K) program with stickers with a p value = 0.341. Age is one of the relative indicators in the stage of physical, cognitive, and psychosocial development of pregnant women. A certain age range is good for carrying out the role of caregiving, if it is too young or too old it may not be able to carry out the role optimally (Supartini, 2004 in Rohmah, 2013). There is no difference based on age between earlier adopters and later adopters in adopting innovation. From various studies on diffusion, there is no relationship between age and innovation, sometimes earlier adopters are found to be young and sometimes there are also those who are elderly (Roger, 2003 in Wawan and Dewi, 2012). According to Delmaifanis, 2016 there is no significant relationship between age and knowledge of pregnant women about STDs and HIV-AIDS at the Tebet Health Center with a p value = 1,000. These results are in line with research Guspianto, 2017, stated that there was no significant relationship between age and midwife competence in ANC standards.

2. Education

Education serves to help women improve their abilities and behavior to achieve optimal health, because educated women have a greater chance of knowing how to detect early pregnancy risks. They also have a better understanding of the danger signs and high risks in pregnancy so that they have a stronger motivation to do early detection. According to Rohmah (2010) the level of education of pregnant women can affect the acceptance of an innovation because education will affect the mother's readiness to carry out her role. Mothers with high school and college education are always able to care for babies, but at this level of education, mothers have good absorption when receiving and understanding information, while mothers with low levels of education show that many are not yet able to care for babies and also take a relatively long time to understand information. People who have higher formal education will be easier to accept/know (early knowers) an innovation than those with low education (Roger, 2003). This result is in line with Ayu's research, 2014, the level of education does not affect knowledge

3. Work

Work and family income are a reflection of women's socioeconomic status. Work has a multidimensional aspect in women's lives. Working women have a higher level of interaction with the environment outside the home. This not only increases knowledge about the availability of health services, but also increases self-confidence in seeking and interacting with health workers. Work is a daily activity to earn income. The average family income is obtained from a working husband. Socioeconomic factors are indirect predisposing factors to maternal complications during pregnancy and childbirth (Simarmata & Bisara, 2014). Based on the results of Sugiarti's research, 2018 showed that employment status did not affect

the ability to detect high-risk pregnancies early

Based on the research results and discussion, the following conclusions can be drawn:

1. Most of the respondents in this study were adults, almost all respondents had a high level of education, and half of the respondents were working and not working.
2. Pregnant women who are able to anticipate pregnancy risks will be able to fulfill the knowledge component.good, ability in early detection of pregnancy risks, independence in getting help, andease in obtaining blood if the mother has a case that requires a blood donor.
3. P4K with the Si Dora Backpack Innovation is effective in improving the ability of pregnant women to anticipate pregnancy risks.
4. There is no influence of age, education and occupation factors in anticipating pregnancy risks in pregnant women.

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