



The Effectiveness of Health Education in Increasing Knowledge of Early Detection Danger Signs During Pregnancy

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Abstract. Background Several studies show pregnant women have less knowledge about health risks during pregnancy. It indicates that pregnant woman needs some effective health education methods. Objective. This study aims to determine the effectiveness of health education in increasing knowledge of the early detection of danger signs during pregnancy. Methods. The design of this study used a quasi-experimental method with a one-group pretest-posttest design. The population of this study was pregnant women who had an examination at the Independent Midwife Practice in Jakarta, with a sample size of 111 pregnant women. The data was analyzed using bivariate analysis using Wilcoxon Sign Test. Results. The results of this study showed that the health education intervention about the danger signs during pregnancy given to pregnant women could increase knowledge about the danger signs during pregnancy from 1.22 (before the intervention) to 2.14 (after the intervention), a p-value of 0.0001 was obtained, so it can be concluded that there is a relationship between health education in increasing knowledge of early detection of dangerous signs of pregnancy. Conclusions. Health education effectively increases pregnant women's understanding of pregnancy's dangerous symptoms.

Keywords: Health education · Danger signs · Pregnancy · Knowledge

1 Introduction

The mortality rate (MMR) in developing countries is the highest globally, with around 415 per 100,000 live births. This figure is 40 times higher than the MMR of European countries and almost 60 times higher than Australia's [1, 2].

The WHO estimates that about 580,000 women die each year from complications during pregnancy and childbirth; every minute, at least one woman dies from complications related to pregnancy or childbirth, and 99% of these deaths occur in developing countries [3–5]. Some literature stated that 75% of MMR was caused by direct obstetric complications such as bleeding, hypertension in pregnancy, prolonged labor, unsafe

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abortion, and infection [6]. The study's results in the Urban area of Tanzania showed that of the 384 pregnant women, 67 (17.4%) had experienced danger signs during pregnancy, and 61 (91%) of them immediately came to the hospital or other health facilities when experiencing danger signs of pregnancy [7]. In Ethiopia, out of 632 pregnant women interviewed, only 98 (15.5%) respondents knew about the danger signs of pregnancy [1].

Complications of Pregnancy can endanger the life of the mother and fetus. However, not all women who experience pregnancy complications or abnormal conditions have sufficient knowledge about pregnancy's danger signs and complications. Danger signs of pregnancy are not only related to obstetric complications, but these symptoms can also be recognized from other non-clinical symptoms. Danger signs of pregnancy complications common in pregnant women include vaginal bleeding, convulsions, severe headache with blurred vision, fever and inability to get out of bed, severe abdominal pain, and rapid or difficult breathing [2].

Millennium Development Goals (MDGs) target the Maternal Mortality Rate (MMR) to decrease to 102/per 100,000 live births in 2015. However, the Inter-Census Population Survey (SUPAS), AKI, in 2015 reported 305 per 100,000 live births that showed the target for reducing MMR in Indonesia has yet to be achieved. As a continuation of the Sustainable Development Goals (SDGs) globally, the target is to reduce the MMR to less than 70 per 100,000 KH by 2030. This condition indicates the need for more strategic and comprehensive efforts. It needs to reduce the mortality to achieve the target of falling the MMR by 5.5% per year [8].

Based on the 2017 Indonesian Basic Health Survey (IDHS), 19% of pregnant women experienced complications during pregnancy. Among women with pregnancy complications, 5% had excessive bleeding, 3% had persistent vomiting, swelling of the feet, hands, and face, or headache with seizures, and 2% each had heartburn before nine months and amniotic fluid. Premature rupture and 8% of women experienced other pregnancy complications such as high fever, seizures, anemia, and hypertension [9].

Every pregnant woman, her partner, and family must be able and concerned to recognize the signs of danger and detect emergency complications early to avoid the danger of death due to pregnancy [10]. Several studies showed that pregnant women had less knowledge about health risks during pregnancy. The results indicated that pregnant women need several methods of effective health education to help them increase their knowledge that will support them healthily in going through their pregnancies. One of the health education programs is through health education and classes for pregnant women [2].

This research is expected to contribute to science, especially in the field of health and midwifery, especially in increasing knowledge and practice of pregnant women in early detection of danger signs and complications in pregnancy to reduce morbidity and mortality of pregnant women due to complications in pregnancy, especially in developing countries. This study aimed to determine the effectiveness of health education in increasing knowledge and practice of early detection of danger signs of pregnancy.

2 Methods

This study used a quasi-experimental time series design with only one group pretest-posttest design to examine the effect of health education on the level of knowledge of pregnant women about the danger signs of pregnancy. They were given a pretest to determine the extent of their knowledge about the danger signs of pregnancy, followed by counseling on the danger signs of pregnancy. A post-test was obtained to gain knowledge after the intervention. Research activities were carried out from July to December 2020. The study population was pregnant women screened and examined at Independent Practice Midwives in Jakarta and surrounding areas. The study sample was pregnant women who came to perform antenatal care (ANC) examinations at the Independent Practice Midwife and met the inclusion and exclusion criteria. The sampling method used purposive sampling of as many as 111 pregnant women. The independent variable in this study was health education about the danger signs of pregnancy, and the dependent variable was the knowledge of pregnant women about the danger signs of pregnancy. This study used primary data collected using a questionnaire developed through Google Forms. Analysis of the data in this study using bivariate analysis using a nonparametric test: Wilcoxon Sign Test (Fig. 1).

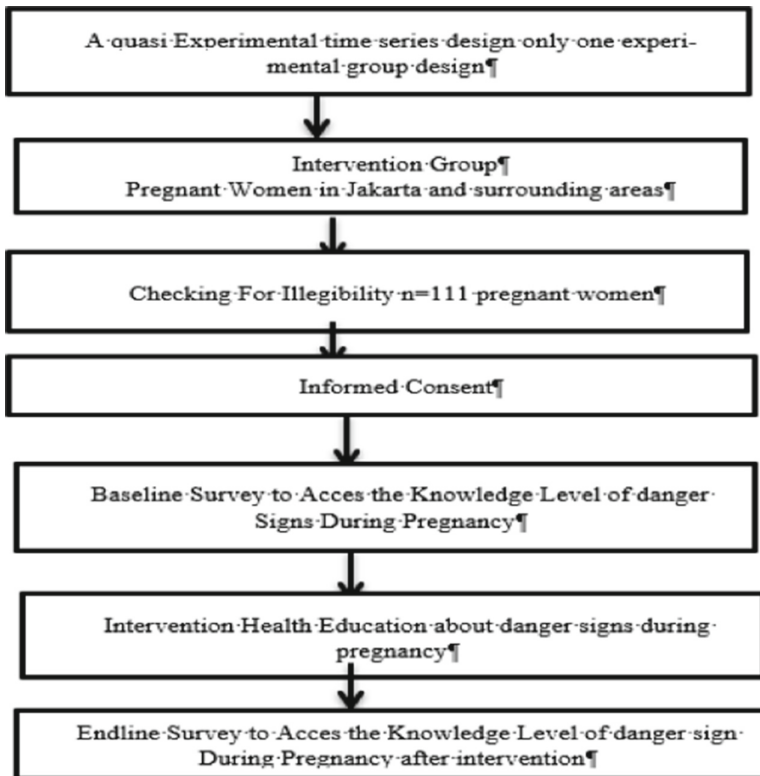


Fig. 1. Design Study

3 Result

Table 1 shows the characteristics of respondents based on age, education, occupation, and the number of pregnancies.

Most participants were in the non-risk group (92.8%), and the risk group was eight respondents (7.2%). Ninety-two respondents (82.9%) had a high education level, and 19 (17.1%) were low-education respondents. Based on the respondent's occupations, 64 respondents were housewives (57.7%), and 47 respondents worked (42.3%). Respondents who were in their first pregnancy were 53 (47.7%) respondents, 45 (40.5%) respondents had a parity of 2–4, and 13 (11.8%) had a parity of >4. Based on the number of ANC visits, respondents with ANC visits less than four times were 61 (55%) respondents, and the number of visits more than four times were 50 (45%) respondents.

Based on Table 2 the description of respondents' knowledge before intervention in the form of Health Education about the danger signs of pregnancy, respondents with

Table 1. Sociodemographic of Respondents

Variable	Frequency (N)	Percentage (%)
Age		
At risk (<20 years and >35 years)	8	7.2
No Risk (20–35 years old)	103	92.8
Education		
Low (SD-Junior High School)	19	17.1
High (SMA-PT)	92	82.9
Work		
Housewives	64	57.7
Working	47	42.3
Number of Pregnancy		
1 time	53	47.7
2–4 times	45	40.5
>4 times	13	11.8
Number of ANC visits		
<4	61	55
>4	50	45

Table 2. Describes the respondents' knowledge before being given intervention in the form of health education about the danger signs of pregnancy.

Variable	Before		After	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Good Knowledge	23	20.7	49	44
Enough Knowledge	27	24.3	51	46
Lack of Knowledge	61	55.0	11	10

Table 3. The Effect of Health Education on Increasing Knowledge of Pregnant Women About Danger Signs During Pregnancy

Health Education Intervention	Mean	Standard Deviation	P-Value
Before Intervention	1.22	1.123	0.0001
After Intervention	2.14	1.172	

a good level of knowledge 23 (20.7%) respondents, sufficient knowledge 27 (24.3%) respondents and respondents with less knowledge of 61 (55.0%) respondents.

After being given health education about the danger signs of pregnancy, respondents with good knowledge were 49 (44%), respondents with sufficient knowledge were 51 (46%), and 11 (10%) respondents lacked knowledge. This study conducted a bivariate analysis using a nonparametric test: the Wilcoxon Sign Test.

Based on the Table 3, it can be seen that the health education intervention about the danger signs during pregnancy given to pregnant women can increase the mother's knowledge by 0.92, from 1.22 (before the intervention) to 2.14 (after the intervention). Based on the Wilcoxon Sign test results, a p-value of 0.0001 was obtained, there was a significant difference in the mother's knowledge about the danger signs of pregnancy before and after the health education intervention.

4 Discussions

The results of the study on the level of knowledge of pregnant women before being given health education about the danger signs showed a high frequency of pregnant women having a low level of knowledge (55%). The research of Hailu, Gebremariam, and Alemseged (2011) found that many pregnant women did not know the danger signs of pregnancy, which was a serious problem that can cause complications in pregnancy and childbirth. It is expected that pregnant women and their families are able to recognize the danger signs and complications of pregnancy. In that case, reducing the number of delays in making decisions about health services is possible. The focus strategy to reduce maternal and infant mortality is empowering women, families, and communities to recognize risk factors for pregnancy-related danger signs and seek appropriate help if they experience danger signs or complications, one of which is by providing health education [11].

In the results of research by Solomon et al. (2015), of 355 respondents, 202 (56.9%) reported that they had information about danger signs during pregnancy. Of those who had information about danger signs during pregnancy, the most commonly mentioned was vaginal bleeding 161(45,4%). In this study, only 137 respondents (38.6%) had good knowledge about danger signs during pregnancy [12]. In this present study, the level of knowledge of pregnant women about the danger signs of pregnancy increased after intervention in the form of health education about the danger signs of pregnancy. Health education about the danger signs of pregnancy given to pregnant women in this study can increase the mother's knowledge.

Health education is essential to prenatal care, especially for most women experiencing pregnancy for the first time. Several studies in developing countries show that women want more information about their pregnancy, one of which is the early detection of danger signs during pregnancy and how to overcome them [13].

Complications of Pregnancy can endanger the life of the mother and fetus. However, not all women who experience pregnancy complications or abnormal conditions have sufficient knowledge about pregnancy's danger signs and complications. Danger signs of pregnancy complications are not only related to obstetric complications but can also be recognized from other non-clinical symptoms. Danger signs of pregnancy complications that commonly occur in pregnant women include vaginal bleeding, convulsions, severe headaches with blurred vision, fever and inability to get out of bed, severe abdominal pain, and rapid or difficulty breathing [2].

The limitation of this study is that it only uses one intervention group, and there is no comparison group, so it cannot be ascertained how far the effect of the treatment given is.

5 Conclusion

Health education effectively increases pregnant women's understanding of pregnancy's dangerous symptoms. The present study showed that health education given to pregnant women increased the knowledge about the danger signs of pregnancy compared to before the intervention.

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Authors' Contributions. M and MYRA collected the data, LA processed and analyzed the data, M wrote the manuscript, and LA reviewed the manuscript.

References

1. Maseresha, N., Woldemichael, K. & Dube, L. Knowledge of obstetric danger signs and associated factors among pregnant women in Erer district, Somali region, Ethiopia. *BMC Women's Health* **16**, 1–8 (2016).
2. Teng, S. P., Zuo, T. C., Jummaat, F. B. & Keng, S. L. Knowledge of pregnancy danger signs and associated factors among Malaysian mothers. *British Journal of Midwifery* **23**, 800–806 (2015).
3. Lattof, S. R. *et al.* Implementation of the new WHO antenatal care model for a positive pregnancy experience: A monitoring framework. *BMJ Global Health* **5**, 1–11 (2020).
4. World Health Organization. *WHO recommendations on health promotion interventions for maternal and newborn health 2015*. (2015).
5. Akshaya, K. M. & Shivalli, S. Birth preparedness and complication readiness among the women beneficiaries of selected rural primary health centers of Dakshina Kannada district, Karnataka, India. *PLoS ONE* **12**, 1–16 (2017).
6. Hailu, M., Gebremariam, A. & Alemseged, F. Knowledge about obstetric danger signs among pregnant women in Aleta Wondo District, Sidama Zone, Southern Ethiopia. *Ethiopian Journal of Health Sciences* **20**, (2011).
7. Mwilike, B. *et al.* Knowledge of danger signs during pregnancy and subsequent healthcare seeking actions among women in Urban Tanzania: A cross-sectional study. *BMC Pregnancy and Childbirth* **18**, 1–8 (2018).
8. Kemenkes RI. *Profil Kesehatan Indonesia 2020. Kementerian Kesehatan Republik Indonesia* (2021).
9. BKKBN, Badan Pusat Statistik, Kementerian Kesehatan & IFC International. *Survei Demografi dan Kesehatan Indonesia 2017. Sdki* (2017).
10. WHO. WHO recommendations on health promotion interventions for maternal and newborn health 2015. 1–56 (2015).
11. Abadi Kidanemariam Berhe, Achenef Asmamaw Muche, Gedefaw Abeje Fekadu, G. M. K. Birth preparedness and complication readiness among pregnant women in Southern Ethiopia. *PLoS ONE* **6**, 1–10 (2011).
12. Abayneh Akililu Solomon, Negash Waggari Amanta, Endeshaw Admasu Chirkose, M. B. B. Knowledge About Danger Signs of Pregnancy and Associated Factors Among Pregnant Women in Debra Birhan Town, Central Ethiopia. *Science Journal of Public Health* **3**, 269 (2015).
13. Al-Ateeq, M. A. & Al-Rusaies, A. A. Health education during antenatal care: The need for more. *International Journal of Women's Health* **7**, 239–242 (2015).

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