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THE INFLUENCE OF HEALTH EDUCATION WITH BOOKLET MEDIA AND DEMONSTRATION ON PREGNANT WOMEN'S KNOWLEDGE OF ANEMIA PREVENTION

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ABSTRACT

Background: Pregnant women in Indonesia often experience anaemia. Health education about anaemia and its prevention is essential for increasing the awareness of pregnant women, which helps improve the health of both the mother and the fetus. This study aims to determine the influence of health education about anaemia using booklets and demonstrations on the knowledge of pregnant women in Serenan Village, Juwiring District
Methods: Pre-experimental research was used in this study. This study used the one-group pretest-posttest method. Total sampling was used to select 22 pregnant women from Serenan Village, Juwiring District. This study used questionnaires and booklets. This research uses the Wilcoxon test.
Results: Based on univariate analysis, 19 respondents or 86.4% of the sample, were aged between 20 and 35 years. A total of 16 respondents, or 72.7% were primiparas based on parity. The majority of respondents, 16 (72.7%), had completed high school. Regarding the understanding of pregnant women before receiving health education, 14 respondents (63.6%) had sufficient knowledge, eight respondents (36.4%) had inadequate information, and none had good knowledge. After their health education, 20 respondents (90.9%) reported having high knowledge, 2 (9.1%) reported having sufficient understanding, and none reported having poor knowledge. There was an effect of health education using booklets and demonstrations on pregnant women's knowledge about anaemia prevention, with a p-value of 0.000.
Conclusion: The implication of this study is that the combination of booklets and demonstrations can be a good method for increasing pregnant women's knowledge.
Keywords: anaemia, booklet, demonstration, knowledge, prevention

INTRODUCTION

Pregnancy is an important period in a woman's life, which requires certain health care and a proper diet. During pregnancy, pregnant women must meet optimal nutritional needs, because every nutrient consumed will directly affect their health. The health problem of pregnant women is that they often experience anaemia. Anaemia in pregnant women can have an impact on the birth of the baby; besides the mother lacking the strength to push, it also has an impact on the baby's low birth weight. WHO defines anaemia as a disorder when the concentration of haemoglobin in the blood or the number of red blood cells is below normal (WHO, 2017).

Anaemia affects 36.5% of pregnant women worldwide, and in Indonesia, the percentage increases to 48.9%, according to WHO estimates (WHO, 2025). Given the high frequency of anaemia, pregnant women need comprehensive health education to prevent it. Anaemia in pregnant women can have serious impacts on the health of both the mother and the

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unborn baby. If left untreated, the condition of anaemia in pregnant women can lead to complications that may occur during pregnancy, childbirth, and postpartum, and it also affects the fetus they are carrying (Idyawati et al., 2024).

Health education can help pregnant women understand anaemia by providing systematic and targeted teaching. According to a study, health education can increase mothers' knowledge about anaemia during pregnancy, so that pregnant women can take preventive measures early when symptoms of anaemia begin to appear (Anggraeni et al., 2022). Media is needed to support the success of health education (Kristiani & Widyastutik, 2023).

This study used a booklet as media. Booklets are printed media in the form of small books to convey information that is made using attractive visual designs and images, and contains explanations of the material. Booklets have the advantage that readers can easily understand the contents of the booklet, because the contents are interesting, and their small size makes it easy to carry and read anywhere and anytime. Counselling through booklet media is more effective in increasing knowledge than leaflet media (Lubis et al., 2022).

Both pharmacological and non-pharmacological treatments can help overcome and prevent iron deficiency. So other alternative treatments are needed. Guava can increase haemoglobin in pregnant women. This alternative treatment can also be done non-pharmacologically, such as consuming vegetables and fruits that are easily obtained. Guava contains vitamin C, which helps in the formation of haemoglobin levels, so it can be used to prevent anaemia in pregnant women (lack of red blood cells) (Lastri Mei et al., 2020). One of the vegetables that can be combined with guava is spinach because spinach contains iron. The iron content in spinach can prevent anaemia by increasing or regenerating red blood cells (Martini et al., 2023).

The researchers decided to combine health education with booklet media with demonstrations, which was based on the results of the research on spinach and guava juice above. The researcher used the demonstration method to help respondents better understand the procedures or operations of the extension questions. Extension with demonstration techniques is a teaching strategy that involves direct exposure to items, events, guides, and steps to complete tasks, or using instructional resources that are relevant to the topic being discussed. Guava, spinach, hot water, honey, and other ingredients were used as teaching aids in this study, and reading materials in the form of booklets were also provided (Nadia et al., 2021). This study aims to determine the influence of health education about anaemia through booklets and demonstrations on the knowledge of pregnant women in Serenan Village, Juwiring District.

RESEARCH METHOD

This research is a type of quantitative research that uses a quasi-experimental method with a one-group design. The research location was in Serenan Village, Juwiring District, Klaten Regency. The research period was from October 2024 to May 2025.

The research population was 25 pregnant women in Serenan Village, Juwiring District, Klaten Regency from October 2024 to January 2025. In this study, the sample taken included 100% of all pregnant women in Serenan Village, Juwiring District, Klaten Regency, which amounted to 25 people, but there were three dropouts, so the total sample was 22 people.

The independent variable is health education, which uses booklet media and health education, which uses demonstration methods. The dependent variable is the knowledge of pregnant women about preventing anaemia. Before the intervention was given, a 15-minute pre-test was conducted, and health education was provided using

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booklets for 20 minutes and a demonstration for 10 minutes. After that, a 15-minute post-test was conducted.

The instruments used in this study were questionnaires, booklets, and demonstration props. The booklet contains health education materials on anaemia and its prevention. The questionnaire includes a list of questions to gather information about the respondents and their level of knowledge. Demonstration materials include a blender and ingredients for making spinach and guava juice.

The validity of the research instrument was tested on 20 respondents outside the research sample, namely pregnant women at the Delanggu Community Health Centre, totalling 30 statement items. From the results of the validity test, it was found that there were four invalid statement items. Then, a re-validation test was conducted on pregnant women at the Manisrenggo Community Health Centre by changing the statement words, and it was found that 30 statements were declared valid with a calculated r value > r table (0.444). The research questionnaire instrument was tested for reliability using Cronbach's alpha, the result was 0.746 ($\alpha > 0.60$). Thus, the questionnaire used was valid and reliable.

Univariate analysis in this study uses frequency distribution to analyse Sample characteristics, including age, parity, education, and level of knowledge before and after being given health education with a booklet and demonstration media. This study used the Wilcoxon Test for data analysis because the data were ordinal.

This research has obtained ethical clearance and is suitable for research. Ethical clearance has been approved, and an Ethical Clearance Letter has been issued by the Health Research Ethics Committee of Dr. Moewardi Hospital, no. 49/I/HREC/2025.

RESULTS

In Table 1, it can be seen that this study involved respondents aged 20-35 years (86.4%), with most of them being primipara (72.7%) and having a high school education (72.7%). Before the intervention, the majority of pregnant women in Serenan Village had "adequate" knowledge about preventing anaemia (63.6%), with a small number having "less" knowledge and none having "good" knowledge.

Table 1. Frequency Distribution of Characteristics of Pregnant Women in Serenan Village, Juwiring-Klaten (n=22)

Characteristics	Category	Frequency	Percentage (%)
Age	< 20 Years	0	0
	20-35 Years	19	86,4
	>35 Years	3	13,6
Parity	Primipara	16	72,7
	Multipara	6	27,3
	Grandemultipara	0	0
Education	Primary	3	13,6
	Secondary	16	72,7
	Higher	3	13,6
Knowledge Before Being Given Health Education	Less	8	36,4
	Enough	14	63,6
	Good	0	0
Knowledge After Being Given Health Education	Less	0	0
	Enough	2	9,1
	Good	20	90,9

The two-variable analysis test uses the Wilcoxon test because the data scale is ordinal. Table 2 is the result of the Wilcoxon test analysis.

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Table 2 Pregnant women's knowledge about anaemia after intervention in Serenan Village, Juwiring-Klaten.

		Frequency	p
Knowledge Posttest_Pretest	Negative Ranks	0[a]	
	Positive Ranks	22[b]	0,000
	Ties	0[c]	
	Total	22	

The Wilcoxon test analysis obtained a p-value of 0.000 < 0.05 as stated in Table 2, which means that there is an effect of providing health education using booklets and demonstrations on pregnant women's knowledge about preventing anaemia in Serenan Village, Juwiring District, Klaten Regency.

DISCUSSION

Knowledge acquired at an older age is often more profound and based on concrete experiences, which allows individuals to relate new information to previous experiences. This is consistent with the research conducted by Rangkuti and Harahap. (2020), which states that individuals in the age range of 20-35 years have a more rational mindset compared to their younger peers. This contrasts with knowledge gained at a younger age, where such information is often more theoretical and less connected to daily life experiences (Nabila et al., 2022).

Parity has a significant influence on an individual's acceptance of knowledge, where the more experience a mother has, the easier the acceptance becomes (R. Nasution & Suryani, 2024). Multiparous mothers tend to have good knowledge because they have previous pregnancy experiences. A mother who has experienced pregnancy before will have a deeper understanding of the physical and emotional changes that may occur, as well as how to cope with the challenges that arise (Khoirunnisa et al., 2019).

Education influences the acceptance of information obtained. The level of education affects a person's ability to receive the information they obtain effectively. Knowledge of the pregnant mother is gained before being given health education through booklet media and demonstrations. Knowledge comes from recognising a sensation. Information and media are two examples of factors that influence knowledge. A person's knowledge will change or increase when they learn through formal or informal education. A person's actions are greatly influenced by their knowledge or cognitive abilities (Notoatmojo, 2018). Experience in obtaining information, one of which is through health education from accurate sources, and experience regarding the prevention of anaemia with guava and spinach juice can increase a person's knowledge of preventing anaemia correctly. Experience is a source of knowledge that influences a person's skills. Researchers argue that the low level of knowledge of mothers about preventing anaemia with guava and spinach juice is influenced by the lack of experience of mothers, so that mothers do not have a real picture of being able to prevent anaemia with guava and spinach juice.

Knowledge of the pregnant mother after being given Health Education with Booklet Media and a Demonstration. The changes that occurred in the knowledge of pregnant women were partly due to the delivery of information in health education. This study presents counselling with booklet media, which contains attractive images and colours. The presentation of attractive and real images, such as pictures of the steps for making guava and spinach juice, and the combination of striking colours, made respondents interested in the objects seen and became the centre of attention.

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In line with the research, a study conducted in 2023 showed that after being provided with health education using a booklet and demonstration, there was an increase in knowledge (Febri Krisdianto et al., 2023).

In addition, researchers also used a demonstration method where they directly practised how to make guava and spinach juice. Demonstrative techniques have various benefits, such as minimising verbalism, making information more concrete and easier to understand, encouraging more active observation, and allowing for experimentation. (Nadia et al., 2021).

Pregnant women are taught health information through booklet media and demonstrations of preventing anaemia with guava and spinach juice. A person's knowledge and experience will grow as a result of learning, and this will lead to personality development. Receiving information, processing it, and producing learning outcomes are the steps involved in the learning process. The results of information processing in the form of human skills include intellectual skills, motor skills, verbal information, and cognitive knowledge (F. Nasution et al., 2023).

The hypothesis in this study is statistically supported based on "the results of the Wilcoxon test, which show the influence of Health Education using booklets and demonstrations on the understanding of pregnant women in Serenan Village (p value <0.005; p value = 0.000). This research does not contradict the results of research conducted by Pangesti, Rumiyati, and Astuti in 2021, which found that the average behaviour of mothers before and after massaging newborns independently was 18.00, while the average behaviour of mothers after massaging newborns was 99.00."

The Wilcoxon analysis test obtained a p-value of less than 0.05, which means that health education using demonstration techniques and booklet media has a positive effect. Booklets are learning media that contain information in the form of interesting images and text. The way a person remembers information through memory, reasoning, and problem solving is consistently referred to as a learning style. According to a previous study in 2025, there are three categories of learning styles: kinesthetic (movement), auditory (hearing), and visual (seeing) (Safarina, 2025).

It can be said that one of the media that supports increasing changes in knowledge with a visual learning style is the booklet media. Visual learning really requires the sense of sight, which is used to capture messages which are then processed by the brain to understand them. A visual learner will capture information offered in the form of written text, graphs, charts, or images very quickly. Researchers in this study combined visual learning styles with kinesthetic learning methods, namely demonstrations. Individuals who learn kinesthetically need the sense of touch and movement to absorb knowledge. When learning activities or experiences are received directly to increase knowledge, when someone moves, touches, or acts, it will be easier to absorb the lesson. This is the way of someone whose learning style is kinesthetic (Supit et al., 2023).

Booklet media can help educational targets learn more and faster, make them interested and curious to learn more deeply, so that they can share the messages they receive with others, facilitate their discovery of information, and encourage people's curiosity to learn, explore, and ultimately get better information (Ratih Resmiarsi, 2023). This is consistent with previous research in 2024, which found that increasing knowledge of pregnant women can be more effective through health education using booklets (Nikmah et al., 2024).

By emphasising the improvement of skills and utilising teaching aids and booklet media as media that are distributed directly to respondents, the demonstration method is the best approach. This is in accordance with research showing that maternal knowledge can be improved through health education using demonstration techniques (Nadia et al., 2021).

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Researchers found that the motivation of pregnant women in learning contributed to a very significant increase in knowledge before and after the exam. Someone will be more likely to provide health education if they are really interested in learning something they have never heard or read before. The ability of pregnant women to prevent anaemia can be improved through health education using booklet media because booklets are printed materials that provide information in the form of textual and visual materials that can be reread to facilitate learning or receiving information. On the other hand, demonstration techniques can facilitate the delivery of information in health education because they encourage participants to see examples of something so they can do it themselves.

Pregnant women's knowledge can improve after receiving health education through booklets and demonstrations. A person's knowledge has six levels: knowing, understanding, applying, analysing, synthesising, and evaluating. It is hoped that after their knowledge level has increased, all pregnant women will be able to apply and evaluate efforts to prevent anaemia based on the health education they have received (Notoatmojo, 2018).

CONCLUSION

The results of this study demonstrate that health education, using media such as booklets and demonstrations, significantly enhances pregnant women's knowledge about preventing anaemia in Serenan Village, Juwiring-Klaten..

RECOMMENDATIONS

Future researchers can use the results of this study as a reference for related research. Further researchers can modify other educational methods that may be more effective than booklets and demonstrations.

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