



The Influence of Health Education on Knowledge of Antenatal Care in Pregnant Women in Rural Areas

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ABSTRACT

Background: Maternal health problems are closely related to pregnant women, which contribute a lot to the current maternal mortality rate, maternal mortality can be prevented if pregnant women get good quality antenatal care services. Lack of knowledge of pregnant women about antenatal care results in a lack of care for pregnant women about their own health and the baby in their womb. One of the efforts that can be done is by conducting antenatal care so that it can monitor pregnancy and ensure the health of the mother and fetus. **Objective:** This study aims to analyze the effect of health education on knowledge of antenatal care for pregnant women in Karangpring Village, Jember Regency. **Methods:** This type of research is a quasi-experimental design with the one group pre and post-test design. This study was conducted on pregnant women as many as 17 respondents. **Results:** Shows the value of knowledge before being given health education in the less category of 10 people (58.8%) and the sufficient category of 5 people (29.4%) and after being given health education knowledge in the sufficient category 10 people (58.8%) and good category amounted to 7 people (41.2%). The results of the paired t-test statistic obtained a significant value less than 0.05 ($p = 0.000 < 0.05$). **Conclusion:** There is an effect of health education on knowledge of antenatal care for pregnant women in Karangpring Village, Jember Regency.

KEYWORDS

Health Education, Pregnancy Examination, Knowledge, Antenatal Care, Pregnancy

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1. BACKGROUND

Health in pregnant women is one of the most important aspects because without it the health of the fetus in the womb will be disrupted and can have other effects on the fetus. In this modern era,

there are many public health problems that occur, including pregnant women and their fetuses (Mateus et al., 2013). In 2020, cases of maternal mortality in East Java amounted to 98.39/100 thousand live births, while for the Jember region the maternal mortality

rate was 173.53/100 thousand live births with 61 people (Dinkes Jatim, 2021). In connection with the data collected in Indonesia, it is known that East Java, especially in Jember Regency, is the region that has the highest Maternal Mortality Rate (MMR). From the estimation results until 2020 it is estimated that the MMR in Jember will reach the number is 173.53/100 thousand people, with the highest total number of maternal deaths so that it ranks 6th after the city of Pasuruan. Based on the results of data obtained from the Health Profile book in 2020, several factors were found that caused the high number of maternal deaths in Jember Regency. Factors that influenced MMR that occurred in pregnant women included hypertension in 152 people, bleeding in 122 people, other causes in the amount of 210 people. person. Other causes that arise are due to metabolic disorders experienced by pregnant women.

Karangpring Village is located in the agricultural area of the Jember region. The region has a dispersed population, inconvenient transportation, and relatively low levels of education among farmers and the public. Pregnant women gain knowledge about maternal health, especially from parents, television and radio. Prenatal screening is primarily performed in

urban health centers with limited access to advanced technology, shortages of medical equipment and supplies, which can adversely impact access to quality health services. Antenatal care visits are direct contact between mothers and health workers. K1 coverage is a medical examination of a pregnant mother according to standards for the first time in the first month (trimester) of pregnancy (Jinga et al., 2019). Meanwhile, K4 coverage is contact between pregnant women and fourth or more health workers to obtain Antenatal care services are in accordance with established standards, namely: once in the first trimester (before 14 weeks), once in the second trimester (between weeks 14-28), twice during the third trimester (between weeks 28-36) (Dinkes Propinsi Daerah Istimewa Yogyakarta, 2016).

Health education is an application of concepts in the health sector, namely a dynamic behavior change process with the aim of changing or influencing human behavior which includes components of knowledge, attitudes or practices related to the goal of healthy living both individually, in groups and in society, and is a component of health program (Notoatmodjo, 2010). The burden of health care education has affected the number of pregnant women in

this area who attend antenatal health education programs, which in turn has resulted in neglect of basic maternal and fetal health. Several researchers have previously shown that pregnant women's self-care skills can be significantly improved through visual media and/or antenatal classes.

2. METHODS

This research is a type of quantitative research which uses a pre-experimental research approach with a one-group pre and post-test design method. The sample in this study was 17 pregnant women who were taken using consecutive sampling. Consecutive Sampling, that is, all subjects who come and meet the selection criteria are included in the study until the required number of subjects is met. (Notoatmojo, 2010).

In the intervention, health education course instructors were responsible for providing knowledge through educational media, including booklets, flipcharts, and videos to share pregnancy knowledge. Pregnant women can communicate with each other and ask questions related to

pregnancy and childbirth, and the instructor is responsible for answering questions and resolving their doubts. Instructors routinely collect, analyze, and sort hot topics discussed.

Data collection tool using a questionnaire. Questionnaires were used to measure respondents' knowledge regarding antenatal care. The data collected later tabulated and analyzed using the paired sample t-test statistical test which aims to determine whether there is an influence of health education on knowledge of prenatal care (antenatal care). The stages of implementing this research are:

- a. Carrying out a pretest in the form of filling out a questionnaire regarding knowledge regarding pregnancy checks (antenatal care) before the intervention.
- b. Respondents were given health education about pregnancy checks (antenatal care) for 15 minutes.
- c. After providing the intervention, a posttest was given in the form of filling out a questionnaire related to the respondent's knowledge regarding antenatal care.

3. RESULTS

Characteristic of respondents

Table 1. Distribution of respondent characteristics in Karangpring Village, Jember Regency (n=17)

Characteristics	Frequency	Percentage (%)
Age		
<20	1	5.9
20-35	9	52.9
>35	7	41.2
Education		
Elementary school	9	52.9
Junior high school	2	11.8
Senior high school	4	23.5
College	2	11.8
Job		
Housewife	9	52.9
Self-employed	8	47.1

The table above shows that the majority of respondents were 20-35 years old, namely 9 people (52.9%). The education was elementary school, namely 9 people

(52.9%). The occupation of the most respondents is Housewife, namely 9 people (52.9%).

Knowledge of respondent's pre-intervention

Table 2. Respondents' knowledge before health education about Antenatal Care (n=17)

Knowledge	Frequency	Percentage (%)
Less	10	58.8
Enough	5	29.4
Good	2	11.8

The table above shows that before being given health education, respondents' knowledge regarding antenatal care was in

the less knowledge category, namely 10 people (58.8%).

Knowledge of respondent's post-intervention

Table 3. Respondents' knowledge after health education about Antenatal Care (n=17)

Knowledge	Frequency	Percentage (%)
Less	0	0.0
Enough	10	58.8
Good	7	41.2

The table above shows that after being given health education, the majority of respondents' knowledge regarding

antenatal care was in the sufficient knowledge category, namely 10 people (58.8%).

Table 4. Paired T-Test Statistical Results

Knowledge	Correlation	P-Value
Pre-test		
Post-test	0.909	0.000

Based on the table above the test results statistical t-test paired samples obtained a p value of 0.000 with $\alpha = 0.05$ and r count 0.909. This means that there is a significant influence between health education and knowledge of antenatal care. The Relationship Between Family Medical History and Smoking Behavior of Family Members in the Working Area of Kaliwates Health Center.

4. DISCUSSION

Knowledge about pregnancy examination (antenatal care) before health education intervention

Based on the table on the level of knowledge of pregnant women before and after being given health education, the data that has been obtained is that 10 respondents (58.8%) have less knowledge. One of the factors that influence the level of knowledge is education. Based on the results of the study, as much as 59.9% of mothers' education was elementary school

graduates. In accordance with the theory of Notoatmodjo S, (2010) that education is an attempt to develop personality and abilities within and outside of school and on lifetime. Education affects the learning process, the higher a person's education, the easier it is for that person to receive information, both from other people and from the mass media. Knowledge is very closely related to education where it is hoped that someone with higher education, then that person will also have a wider knowledge.

The increase in knowledge is influenced by the age characteristics of the respondents who are still in the age of 20-35 years, which is an adult productive age with physical maturity that allows them to seek information and capture and recall information that has been heard or has been obtained. In this study, all of the respondents were in the productive age of 20-35 years (52.9%). According to research by Dordunu et al (2021) it was found that age is a factor which influences pregnancy in terms

of reproductive readiness, experience and knowledge of the mother (Dordunu et al., 2021). Someone who is in early adulthood has very strong cognitive abilities and also the ability to adapt to practical considerations Apart from that (Fisher, 2003), However, age is not the only factor that influences a person's knowledge. The older a person is, it does not mean that their knowledge is higher, because there are other factors that can influence this.

Knowledge about pregnancy examination (antenatal care) after health education intervention

Based on the table on the level of knowledge of pregnant women before and after being given health education, the data obtained was that 10 respondents had sufficient knowledge (58.8%). This value increases if compared to before being given health education, namely 5 people (29.4%). These results show that there is an increase in knowledge between before and after the intervention as well as a significant difference between the pretest score and the posttest score. This shows that health education about pregnancy checks (antenatal care) is effective in increasing the knowledge of pregnant women. This situation can occur because most mothers

feel interested and participate well when given health education.

The knowledge level of ANC is influenced by age, education, and employment. Age affects a person's grasping power and thinking patterns. Pregnant women in the young age group have less developed thinking patterns and understanding abilities and find it difficult to receive information so that the knowledge they obtain is also low or lacking (Afaya et al., 2007). Lack of education will hinder the development of a person's attitude towards the new values that are introduced. Work is a time-consuming activity. Working for a mother will affect her life so there is not much time for pregnancy checks.

The Influence of health education for knowledge of pregnancy (antenatal care)

Based on the results of the paired sample t-test statistical test, a p value of 0.000 was obtained with $\alpha = 0.05$ and r calculated 0.909. This means that there is a significant influence health education for knowledge of pregnancy examination (antenatal care). By results, it can be concluded that there is an increase in knowledge seen before and after being given health education, there is a transfer of information from the information provider

to the respondent through health education. This is in accordance with the theory put forward by Notoatmodjo (2010), that education in the short term can produce changes and increase the knowledge of individuals, groups and society.

Knowledge basically consists of a number of facts and theories that allow a person to solve the problems he faces. This knowledge can be obtained both through direct experience and through the experience of others (Yanti, 2018). Knowledge is the most important domain for the formation of one's actions, therefore behavior based on knowledge and awareness will last longer than behavior that is not based on science and consciousness (Windari & Lohy, 2019). When an expectant mother has a deeper understanding of the high risk of pregnancy, she will most likely try to prevent, avoid, or overcome problems that may arise. This awareness can encourage pregnant women to routinely do pregnancy checks. If there are health risks during pregnancy, such problems can be identified and treated appropriately by competent health professionals. This means that in other words, knowledge and awareness of pregnant women about the high risk of pregnancy can be a trigger to take preventive and proactive actions to

maintain the health of the mother and fetus. Women who feel themselves pregnant must have optimal health, this is very important to increase the physical and mental readiness of pregnant women during pregnancy until the delivery process.

Increasing knowledge of pregnant women can be done, one of which is through antenatal health education, antenatal services are health services provided by health professionals to improve the health of pregnant women and the fetus they contain. Antenatal services that are carried out regularly and comprehensively can detect early abnormalities and risks that may arise during pregnancy, so that these abnormalities and risks can be overcome quickly and precisely (Marniyati et al., 2016). In line with statements according to the World Health Organization (WHO), antenatal care can detect early the occurrence of high risks in pregnancy and childbirth, and can reduce maternal and fetal mortality (Lorensa et al., 2021).

Antenatal care activities such as providing health education are very important to be implemented in maternal health programs in health care facilities (Lestari et al., 2022). Antenatal care is very important because it will help reduce maternal and infant mortality. Adherence to

antenatal education can be shown through the frequency of arrival of pregnant women. The government recommends carrying out Antenatal Care (ANC) visits at least four times for each pregnant woman. The examination includes at least once in the first trimester (before reaching 14 weeks' gestation), at least once in the second trimester (between 14-28 weeks' gestation), and at least twice in the third trimester (between 28-36 weeks and after 36 weeks of gestation). In addition, it is recommended that at least one ANC visit involves the husband or family member as a form of social support (Fitriani, 2022). This is emphasized to ensure that the entire pregnancy process can be carefully monitored and get full support from the family environment.

Monitoring each trimester of pregnancy can help detect risks early, allowing for faster and more effective treatment. Most maternal deaths can be prevented if proper treatment is received at health care facilities. Time and transport factors are decisive in referring to high-risk cases of pregnancy. Therefore, detection of risk factors in mothers both by health workers and the community is one of the important efforts in preventing maternal death and morbidity (Khadijah, 2018). In this

case, health workers can provide counseling on early detection of high risk of pregnancy, as well as teach and motivate pregnant women to do early detection of these risks.

Counseling is an effort to explore and provide information to meet the needs and help pregnant women in making decisions (Yulis et al., 2022). Health service organizations such as Private Practice Midwives (BPS) and Puskesmas provide services, including counseling, to pregnant women. Furthermore, the benefits of routine antenatal education have significant benefits in detecting various complications that may occur during pregnancy, such as anemia, preeclampsia, gestational diabetes mellitus, asymptomatic urinary tract infections, and stunted fetal growth (Fitriani, 2022). This benefit is very important to keep pregnant women away from fear, because pregnancy is a period close to risks and discomfort for mother and baby. This means that these benefits are not only medical, but also psychological and preventive. According to (Amalia et al., 2023) the purpose of antenatal education is to give every pregnant woman the right to receive quality antenatal services, so that they can undergo pregnancy with optimal health, give birth safely, and produce healthy babies. Therefore, understanding the

benefits of antenatal education is key to achieving the main goal, which is a healthy pregnancy and safe delivery. Through good understanding through antenatal education, pregnant women can be actively involved in maintaining their health and preventing potential complications. Thus, the goal of achieving a healthy pregnancy and safe delivery can be more easily achieved.

There are several limitations to this research. The women recruited for this study represented a sample from one of the community health centers in the agricultural area of Jember district, thereby minimizing the ability to generalize our findings. Local languages that are not mastered by researchers can have an impact on the understanding of the sample, potentially biasing them during data collection.

5. CONCLUSION

Knowledge of prenatal care (antenatal care) before being given health education and is in the poor category. Knowledge of prenatal care (antenatal care) after being given education health in the adequate category. There is a significant influence of education health on knowledge of pregnancy checks (antenatal care) among pregnant women in Karangpring Village, Jember Regency. For Health Workers, this

research can be used as a reference as an application of health education in increasing knowledge of prenatal care (antenatal care) in pregnant women. For the nursing profession this research can be input and used in carrying out community nursing interventions in knowledge of pregnancy checks (antenatal care).

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AUTHOR CONTRIBUTIONS

Substantial contributions to conception, data collection, and analysis: Nico Krisna Prio Utomo, Siti Nafiatul Nur Azizah, Mohammat Gafur, Nunik Nurhidayatul Ma'rifah, Dwiki Ratna Putri, Cahya Tribagus Hidayat, and Susi Wahyuning Asih. Manuscript revisions: Susi Wahyuning Asih.

CONFLICT OF INTEREST

The author declares that there is no conflict in the preparation of this article.

DATA AVAILABILITY STATEMENT

The data obtained in this study is available from the author and is not published for certain reasons.

REFERENCES

- Afaya, A., Azongo, T. B., Dzomeku, V. M., Afaya, R. A., Salia, S. M., Adatara, P., Kaba Alhassan, R., Amponsah, A. K., Atakro, C. A., Adadem, D., Asiedu, E. O., Amuna, P., & Amogre Ayanore, M. (2020). Women's knowledge and its associated factors regarding optimum utilisation of antenatal care in rural Ghana: A cross-sectional study. In K. Torpey (Ed.), *PLOS ONE* (Vol. 15, Issue 7, p. e0234575). Public Library of Science (PLOS). <https://doi.org/10.1371/journal.pone.0234575>
- Amalia, R., Zuhriyatun, F., & Yuliani, D. R. (2023). Kelas edukasi antenatal berbasis keterampilan meningkatkan efikasi diri ibu hamil dalam menghadapi persalinan. *Jurnal Sains Kebidanan*, 5(2), 60-67. <https://doi.org/10.31983/jsk.v5i2.10699>
- Dinkes Propinsi Daerah Istimewa Yogyakarta. (2016). *Profil Kesehatan Daerah Istimewa Yogyakarta Tahun: Rineka Cipta.*
- Dordunu, R., Dzando, G., Kumah, A., Donyi, A. B., Nutakor, H. S., Amenuvor, W. A. Y., Anagblah, C. K., Adorkor, E., & Mordenu, H. (2021). Assessment of Maternal Readiness for Childbirth and Childrearing among Adolescent Mothers in Ghana. In *Advances in Reproductive Sciences* (Vol. 09, Issue 02, pp. 107–117). Scientific Research Publishing, Inc. <https://doi.org/10.4236/arsci.2021.92011>
- Fisher, G. G., Chaffee, D. S., Tetrick, L. E., Davalos, D. B., & Potter, G. G. (2017). Cognitive functioning, aging, and work: A review and recommendations for research and practice. *Journal of Occupational Health Psychology*, 22(3), 314–336. <https://doi.org/10.1037/ocp0000086>
- Fitriani, A. I. F. (2022). Edukasi Tentang Pentingnya Pemeriksaan Antenatal Care (Anc) Pada Ibu Hamil. *JCS*, 4(3). <https://doi.org/10.57170/jcs.v4i3.58>
- Jinga, N., Mongwenyana, C., Moolla, A., Malete, G., & Onoya, D. (2019).

- Reasons for late presentation for antenatal care, healthcare providers' perspective. In *BMC Health Services Research* (Vol. 19, Issue 1). Springer Science and Business Media LLC. <https://doi.org/10.1186/s12913-019-4855-x>
- Khadijah, S. (2018). Upaya deteksi dini resiko tinggi kehamilan ditentukan oleh pengetahuan dan dukungan tenaga kesehatan. *Jurnal Sehat Mandiri*, 13(1), 27-34. <https://doi.org/10.33761/jsm.v13i1.2>
- Lestari, K. P., Anggraini, D. A. P., Sulistyowati, D. I. D., & Jauhar, M. (2022). Edukasi Kesehatan Berbasis Model Information Motivation Behavior Skill Meningkatkan Pengetahuan Dan Perilaku Perawatan Antenatal Pada Ibu Hamil Risiko Tinggi. *Jambi Medical Journal: Jurnal Kedokteran Dan Kesehatan*, 10(2), 234-245. Retrieved from <https://online-journal.unja.ac.id/kedokteran/article/view/19236>
- Lorensa, H., Nurjaya, A., & Ningsi, A. (2021). Hubungan Inggkat Pendidikan Dan Sikap Ibu Hamil Dengan Kunjungan Antenatal Care di Puskesmas Balla, Kecamatan Balla, Kabupaten Mamasa. *Jurnal Inovasi Penelitian*, 2(5), 1491-1496. <https://doi.org/10.47492/jip.v2i5.926>
- Marniyati, L., Saleh, I., & Soebyakto, B. B. (2016). Pelayanan antenatal berkualitas dalam meningkatkan deteksi risiko tinggi pada ibu hamil oleh tenaga kesehatan di Puskesmas Sako, Sosial, Sei Baung dan Sei Selincah di Kota Palembang. *Jurnal Kedokteran dan Kesehatan: Publikasi Ilmiah Fakultas Kedokteran Universitas Sriwijaya*, 3(1), 355-362. <https://ejournal.unsri.ac.id/index.php/jkk/article/view/2852>
- Mateus, T., Silva, J., Maia, R. L., & Teixeira, P. (2013). Listeriosis during Pregnancy: A Public Health Concern. In *ISRN Obstetrics and Gynecology* (Vol. 2013, pp. 1-6). Hindawi Limited. <https://doi.org/10.1155/2013/851712>
- Notoatmodjo, S. (2010). *Promosi Kesehatan Teori & Aplikasi Edisi Revisi*. Jakarta: Rineka Cipta. http://opac.poltekkestasikmalaya.ac.id/index.php?p=show_detail&id=894

Windari, A. P., & Lohy, S. A. (2019). Upaya deteksi dini risiko tinggi kehamilan ditentukan oleh pengetahuan dan pemeriksaan kehamilan di Pulau Osi. *Jurnal Pengabmas Masyarakat Sehat*, 1(4), 265-268.
<https://doi.org/10.33992/ms.v1i4.1364>

Yanti, Y. E. (2018). Hubungan Pengetahuan Ibu Dan Dukungan Suami Pada Ibu Hamil Terhadap Keteraturan Kunjungan Antenatal Care (ANC) di Puskesmas Wates Lampung Tengah Tahun 2014. *Jurnal Kebidanan Malahayati*, 1(2).
<http://dx.doi.org/10.33024/jkm.v1i2.550>

Yulis, D. M., Yahya, M., & Mandra, M. A. (2022). Modul Edukasi Antenatal pada Kader Kesehatan Kota Makassar. <https://cdn.dian-demiibudananak.web.id/2022/08/modul-pelatihan-dian-meiliani-yulis-6.pdf>