



The effect health education with audio visual media on the level of knowledge as an effort to prevent pre-eclampsia in pregnant women

Nareswari Diska Nugraha¹, Gipfel Remedina², Candra Dewi Nataningtyas³

¹Bachelor of Midwifery Study Program, Institut Ilmu Kesehatan Bhakti Wiyata Kediri, Indonesia

²Diploma III Midwifery Study Program, Stikes Mitra Husada Karanganyar, Indonesia

³Diploma III Midwifery Study Program, Institut Ilmu Kesehatan Bhakti Wiyata Kediri, Indonesia

Article Info

Article history:

Received Nov 16, 2023

Revised Nov 26, 2023

Accepted Nov 30, 2023

Keywords:

Audio Visual Media;

Health Education;

Knowledge;

Pre-Eclampsia.

ABSTRACT

Pre-eclampsia is a pregnancy-related disease characterized by hypertension, edema, and proteinuria. Pregnancy-related problems may arise that are caused directly by hypertension. Pregnant women can prevent preeclampsia by increasing their understanding through health education with audio-visual media to increase their knowledge. This research aims to determine the effect of health education using audio-visual media on the level of knowledge in an effort to prevent pre-eclampsia in pregnant women. This research uses a pre-experimental design with research methods pre-test-post test with one group design. Data collection was carried out using a questionnaire. Sampling method: non-probability sampling by using techniques A total sample 37 respondents was obtained. The data were analyzed using tests. Wilcoxon signed rank. The results showed that the level of knowledge about pre-eclampsia prevention before and after health education was valuable p -value = 0.000, which means the value of $p < 0.05$, then H_1 is accepted, so it can be concluded from this research that there is an influence of health education using audio-visual media regarding pre-eclampsia preventive efforts on the knowledge of pregnant women.

This is an open access article under the CC BY-NC license.



Corresponding Author:

Nareswari Diska Nugraha,
Bachelor of Midwifery Study Program,
Institut Ilmu Kesehatan Bhakti Wiyata Kediri, Indonesia,
KH. Wahid Hasyim 65. Kediri East Java Indonesia .
Email: nareswari@iik.ac.id

1. INTRODUCTION

Preeclampsia is a medical condition that occurs during pregnancy and is characterized by significant high blood pressure (hypertension), accompanied by organ damage, especially the liver and kidneys, as well as proteinuria (increased protein levels in the urine). Preeclampsia is one of the factors that contributes to the occurrence of perinatal morbidity and mortality in mothers. Pregnancy, childbirth and postpartum complications are a major threat to women's health because they are the main cause of maternal and newborn deaths. Insufficient knowledge can impact a person's attitude towards health, especially regarding decisions and actions aimed at improving their well-being. Including steps to avoid disease, choosing food, maintaining cleanliness, and so on (Notoatmodjo, 2014). Pregnant women who encounter health issues or medical issues will be classified as high risk, increasing the requirement for care during pregnancy (Fyrda et al., 2022).

The death of pregnant woman is a health problem that cannot be resolved. Based on the 2012 Basic Maternal Health Survey (SDKI), the Maternal Mortality Rate (MMR) in Indonesia reached 359/100,000 KH (Kemenkes, 2013). Report on Maternal Mortality in 9 Regencies/Cities throughout East Java in 2010. MMR in East Java Province was 101.4 per 100,000 live births with the main cause being bleeding (29.43%) causing maternal deaths in East Java. In 2011, the MMR in East Java Province was 104.3 per 100,000 live births with the main factor being bleeding (29.35%) causing maternal death. In 2012, MMR in East Java Province reached 97.43 per 100,000 live births. Maternal death can be caused by various factors, such as bleeding factors, preeclampsia I eclampsia factors, infection factors, heart factors, and other factors. In 2012 in East Java, pre-eclampsia was the dominant factor (34.88%) causing maternal death (Dinkes Prov. Jatim, 2013).

According to the findings of Supriandono and Sofoewan (Rozikhan, 2007), 93.9% of preeclampsia sufferers had less than 12 years of education. (Rozikhan, 2007) research at Kendal Hospital found that ANC examinations were less than or equal to three times the risk of 1.50 times causing preeclampsia, while (Alwi et al., 2015) research at Fatimah Hospital found that mothers whose ANC examinations were incomplete had a 3.615 times greater risk of preeclampsia. the possibility of having preeclampsia. Based on research data from researchers, pregnant women in the work environment of Puskesmas.

A person's level of education can support or influence their level of knowledge, in accordance with Republic of Indonesia Law Number 23 of 2003. In particular, a higher level of education makes it easier for mothers to receive new information, thus preventing mothers from being indifferent to health information, while Lower education results in more limited knowledge, making mothers indifferent to the health programs currently offered. Offering seminars to expectant mothers is one of the health initiatives to stop preeclampsia in this population. Pregnant women who enroll in this class do so from the beginning to the end of their pregnancy. Health education is one of the activities in the pregnancy class (Romlah & Farizal, 2022).

According to World Health Education (World Health Organization (WHO), 2015), the global maternal mortality rate due to preeclampsia was 303,000 in 2015, with 61,000 deaths occurring in the Southeast Asia region. In the UK, 15% of maternal deaths are directly related to preeclampsia (Symonds & Ramsay, 2010). Preeclampsia was the cause of 5.8% of maternal deaths in Indonesia in 2006 (Departemen Kesehatan RI, 2007). Data in the world shows that pre-eclampsia occurs less frequently than other causes of disease when viewed from cause and effect, pre-eclampsia is the main cause of death when viewed from the Case Fatality Rate (CFR), which reaches 3512.1%. Pre-eclampsia accounted for 24% of maternal deaths in 2011, making it the second leading cause of death. In East Java in 2014, it showed that the cause of maternal death was due to pre-eclampsia or eclampsia, which was still the dominant factor (Dinkes Prov. Jatim, 2015).

(Yulaikhah, 2009) mentions the following factors that have an impact on the possibility of preeclampsia: age under 20 years, age over 35 years, increased BMI, primipara (first-time mother), large placenta size, smoking mother, young primigravida, excessive uterine distension, history of preeclampsia, history of hypertension, multiple pregnancies, and pregnancy-related diseases such as diabetes mellitus and obesity. To reduce maternal mortality, good knowledge of pregnant women is one way to anticipate birth problems, especially those that can cause birth complications. Lack of knowledge about pre-eclampsia will have a negative impact on pregnancy in planning a safe delivery (Prabawati & Indriyawati, 2017).

Pregnancy health education includes public education about pregnancy-related information and advice to improve the health of pregnant women, prevent pre-eclampsia in the early stages, and treat it if necessary. It is believed that by educating pregnant women about health problems, the incidence of pre-eclampsia will decrease and maternal and fetal death rates can also be prevented. One way to increase the knowledge of pregnant women is to use audio-visual media to provide health education information. According to (Anggraini et al., 2020) audio visual media are objects

used in the learning process that have the power to influence information, attitudes and ideas through written and spoken words. They are divided into two categories, namely auditory (hearing) and visual (seeing).

The health education method that will be used in this research uses video media and leaflets which will be discussed about pre-eclampsia. The use of video as a means of health education is now starting to be developed along with current technological advances. Health education through video media has the advantage of providing good visualization, making it easier to absorb knowledge. Video is included in audio-visual media because it not only involves the sense of hearing as well as the sense of sight. This audiovisual media is able to produce better learning results for tasks such as remembering, recognizing, recalling and connecting facts and concepts (Kustandi & Sutjipto, 2019).

Based on this data, considering the importance of maternal knowledge about pre-eclampsia in order to reduce maternal and infant mortality rates. Therefore, researchers are interested in conducting research on "The Effect of Providing Health Education with Audio Visual Media on the Level of Knowledge as an Effort to Prevent Pre-Eclampsia in Pregnant Women"

2. RESEARCH METHOD

The method chosen by the researcher based on the design used is the research method of pre test-post test with one group design. All respondents were given health education regarding the prevention of pre-eclampsia. Before treatment, a treatment is given pre test about knowledge of Pre-Eclampsia prevention and after treatment is carried out post test about knowledge of pre-eclampsia prevention. The population in this study were pregnant women in Puskesmas X Kediri City, with a total of 37 respondents based on the results of initial data collection. The research sample is based on inclusion criteria, namely pregnant women who live in the work area of Puskesmas X in Kediri City, and exclusion criteria are pregnant women who are not willing to be respondents. The sampling technique used in this research is the sampling technique. Total sampling this research was carried out by taking cases or respondents who happened to be present or available in a place according to the research context (Notoatmodjo, 2012a). Test the analysis of this research data using univariate tests and bivariate analysis. Bivariate tests were carried out to prove the research hypothesis using the Wilcoxon test to determine the effect of intervention after being given health education using audio-visual media to respondents. This analysis was carried out to examine the differences between before and after the intervention was given to find out whether there was an effect in providing the intervention.

3. RESULTS AND DISCUSSIONS

Result

Respondent Characteristics

Table 1. Frequency distribution based on characteristics based on age

Age	Frequency	Percentage (%)
12-21 year	4	10,8
22-31 year	25	67,6
32-41 year	8	21,6
>41 year	0	0
Total	37	100

Source: Primary data, 2023

Table 1 above shows that of the 37 respondents, most of the pregnant women were 25 (67.6%) respondents aged 22-31 years.

Table 1. Frequency distribution of respondent characteristics based on education of pregnant women at puskesmas X Kediri City

Education	Frequency	Percentage (%)
No school	0	0
Elementary school	0	0
Junior high school	8	21,6
Senior High School	20	54
College	9	24,4
Total	37	100

Source: Primary data, 2023

Table 2 explains that of the 37 respondents, most of the pregnant women, 20 (54%) of the respondents, had a high school education.

Univariate Analysis

Table 3. Frequency distribution of pregnant women's knowledge level before being given health education with audio visual media

Knowledge Level	Frequency	Percentage (%)
High	0	0
Currently	17	45,9
Low	20	54,1
Total	37	100
Mean		5.97

Based on Table 3, it shows that the frequency distribution of the level of knowledge of pregnant women before being given health education, the results showed that out of 37 respondents, the majority had a low level of knowledge, as many as 20 (54.1 %) respondents.

Table 4. Frequency distribution of knowledge levels of pregnant women after being given health education using audio visual media

Knowledge Level	Frequency	Percentage (%)
High	12	32,4
Currently	25	67,6
Low	0	0
Total	37	100
Mean		10.13

Table 4 regarding the frequency distribution of the level of knowledge of pregnant women after being given health education, the results show that out of 37 respondents, the majority had a moderate level of knowledge, 25 (67.6%) of the respondents.

Bivariate Analysis

Table 5. Bivariate Analysis level of knowledge before being given health education and after being given health education using audio visual media

Knowledge Level	Frequency	Mean	Wilcoxon Test
Pre Internasional	37	5.97	<i>p value</i>
Post Interventional	37	10.13	
Enhancement		4.16	

Table 5 shows that there is a difference in the average level of knowledge before being given health education and after being given health education. The average level of knowledge before being given health education with audio-visual media was 5.97, while the average after being given health education with audio-visual media was 10.13. There is a difference in the level of knowledge before being given health education and after being given health education, so that

there is an increase of 4.16. The results of the research are also strengthened by statistical test analysis using the *Wilcoxon*, the Bivariate test shows *p value* obtained is 0.000 which means *p value* <0.05. So it can be concluded that H_1 accepted so that health education with audio visual media effective on the level of knowledge as a preventive measure for pre-eclampsia in pregnant women.

Discussion

Based on the differences before and after being given health education with audio-visual media about preeclampsia, the results of the analysis showed that the value obtained was $p = 0.000$ ($p < 0.05$), which means there was a significant difference in knowledge between before being given health education with audio-visual media and after being given the education. health with audio visual media for pregnant women. These results are in accordance with research by (Galuh Ianninda Pramono et al., 2018) showing that there is an influence of health education on knowledge scores about pre-eclampsia in pregnant women. Based on test results *T-test* The probability value is 0.000, which is smaller than $\alpha = 0.05$, so there is a difference between knowledge before and after being given health education about pre-eclampsia.

According to (Notoatmodjo, 2012), knowledge is the result of "knowing" and this occurs after people sense an object. Because of experience and research it turns out that behavior that is based on knowledge will last longer than behavior that is not based on knowledge. Research revealed that before people adopt new behaviors, a sequential process occurs within that person. Knowledge is influenced by several factors including age, education, information, socio-cultural and economic, environment and experience. The level of knowledge will develop on the basis of the information obtained, one of which is understanding (*Comprehension*) namely the ability to explain correctly about known objects, and be able to interpret the material correctly (Notoatmodjo, 2012). The purpose of preeclampsia health education is to enlighten responders about the condition. This has a positive impact on pregnant women's understanding of preeclampsia. Pregnant women's understanding of preeclampsia is impacted by this, with respect to age, education, and career, specifically moving them into a better group (Martina Mogan, 2022).

One of the factors that influences a person's knowledge is information, because information can give someone new knowledge. The higher a person's education, the easier it is for them to accept and ultimately the more knowledge they have, and vice versa (Mubarak et al., 2007). This research is in line with (Corneles & Losu, 2015), the distribution of education of respondents, most of whom have low education (72%), this causes the level of knowledge of respondents to be still lacking. The level of education can influence the respondent's level of knowledge because a person's ability to accept and understand is determined by the level of education they have (Notoatmodjo, 2012).

According to research conducted by (Hidayah, 2016), the majority of 52.7% have a high school education. This research is different from Oster Suriani Simarmata's research in secondary data analysis of health research in 2010 which showed that the majority of 41.2% of subjects had elementary school education. Some experts believe that a pregnant woman's high or low education will affect her ability to absorb new information. This also has an impact on knowledge of the condition and whether the fetus is at risk or not (Simarmata, 2009).

The results of this study state that there is a significant difference in knowledge between those before health education was given to pregnant women. These results are in accordance with research by (Indrawati & Puspitaningrum, 2016) which stated that there were differences in respondents' knowledge about pre-eclampsia before and after counseling in the working area of the Kedungmundu Community Health Center, Semarang. These results are reinforced by (Spratling et al., 2014) who states that health education about cardiovascular disease can increase knowledge and awareness of mothers who have a history of pre-eclampsia so that pregnant women can know the risk of cardiovascular disease if the mother has a history of pre-eclampsia.

Research by (Sari, 2019) shows that the group that received video teaching had a higher level of knowledge. Another benefit of video content is that it can be played back to ensure content clarity. Information is also conveyed quickly and is easy to remember. In addition, audiovisual media is media that uses sight and sound to convey information, thereby creating an environment that encourages pregnant women to learn new things.

Compared to other media, the effect of video media will increase the responsiveness of participants' understanding because video is presented as a source of light that may influence someone's feelings and ideas. Because videos can combine sights (images) and audio (sound), videos can also help individuals who have difficulty understanding messages to understand what is being said (Yudianto, 2017). According to research by (Sari, 2019) audio-visual video media is more capable of increasing pregnant women's attitudes and knowledge about the location of delivery compared to other media. This means that video media in pregnant women's classes can be more effective and utilized by pregnant women who are unable to attend pregnancy checks at the health center.

Education teaches a person various abilities, including mastering science. The higher a person's level of education, the higher the person's level of knowledge, the easier it is to accept and develop knowledge and technology. It is easier for someone who has a high level of education to understand information about how to prevent pre-eclampsia.

The expected result of health education is that individuals know and understand health behavior. The provision of health education shows changes in knowledge about preventing pre-eclampsia. By providing health education to pregnant women, it is hoped that the incidence of pre-eclampsia will decrease and reduce the death rate for mothers and fetuses.

4. CONCLUSION

The results of the hypothesis test in the research showed a *p value* of 0.000 ($p < 0.005$). This proves that there is an influence of health education using audio-visual media on the level of knowledge in an effort to promote pre-eclampsia in pregnant women. The limitation of this research is that the number of respondents was only 37, which is certainly not enough to describe the real situation. It is hoped that the next research project will be able to take samples more, this is aimed at better data accuracy in the research

ACKNOWLEDGEMENTS

The author expresses gratitude to everyone who helped with this study. in the application of the Tridharma of Higher Education, particularly at universities. Ideally, we can work together to advance the health sector for the good of society.

REFERENCES

- Alwi, I., Salim, S., Hidayat, R., Kurniawan, J., & Tahapary, D. L. (2015). Penatalaksanaan di bidang ilmu penyakit dalam panduan praktik klinis. *Jakarta: Interna Publishing Pusat Penerbitan Ilmu Penyakit Dalam.*
- Anggraini, S. A., Siregar, S., & Dewi, R. (2020). Pengaruh media audio visual terhadap tingkat pengetahuan dan sikap pada ibu hamil tentang pencegahan stunting di desa Cinta Rakyat. *Jurnal Ilmiah Kebidanan Imelda*, 6(1), 26-31.
- Corneles, S. M., & Losu, F. N. (2015). Hubungan tingkat pendidikan dengan pengetahuan ibu hamil tentang kehamilan risiko tinggi. *JIDAN (Jurnal Ilmiah Bidan)*, 3(2), 51-55.
- Departemen Kesehatan RI. (2007). *Survei Demografi Kesehatan Indonesia dan Angka Kematian Ibu.* <http://www.depkes.go.id/>
- Dinkes Prov. Jatim. (2013). *Profil Kesehatan Provinsi Jawa Timur Tahun 2013.* www.depkes.go.id
- Dinkes Prov. Jatim. (2015). *Profil Kesehatan Provinsi Jawa Timur Tahun 2014.* www.depkes.go.id
- Fyrda, N., Usman, S., & Yusni, Y. (2022). Edukasi Melalui Media Leaflet untuk Meningkatkan Pengetahuan Ibu Hamil Tentang Preeklamsia di Rumah Sakit Pertamedika Ummi Rosnati Banda Aceh. *Jurnal Penelitian Kesehatan "SUARA FORIKES" (Journal of Health Research "Forikes Voice")*, 13(3), 639-644.
- Galuh Ianninda Pramono, G., Sari Sudarmiati, S. K., Kep, M., Mat, S., Sari Sudarmiati, S. K., Kep, M., & Mat, S. (2018). *Pengaruh Pemberian Pendidikan Kesehatan Terhadap Tingkat Pengetahuan Ibu Hamil Mengenai*

- Preeklamsi di Puskesmas Tlogosari Wetan. Faculty Of Medicine.*
- HIDAYAH, P. (2016). *Hubungan Tingkat Risiko Kehamilan Dengan Kejadian Komplikasi Persalinan Di Rumah Sakit Umum Daerah Panembahan Senopati Bantul Tahun 2014*. Universitas Gadjah Mada.
- Indrawati, N. D., & Puspitaningrum, D. (2016). Efektifitas Penyuluhan Terhadap Tingkat Pengetahuan dan Sikap Ibu Hamil Tentang Preeklamsia di Wilayah Kerja Puskesmas Kedungmundu Kota Semarang. *Jurnal Ilmu Kebidanan Dan Kesehatan (Journal of Midwifery Science and Health)*, 7(1).
- Kemenkes, R. I. (2013). Riset kesehatan dasar; RISKESDAS. Jakarta: Balitbang Kemenkes RI, 2013, 110-119.
- Kustandi, C., & Sutjipto, B. (2019). *Media pembelajaran manual dan digital*.
- Martina Mogan, E. T. Y. W. (2022). Upaya Peningkatan Pengetahuan dan Pemberian Suplemen Kalsium dan Vitamin D Untuk Mencegah Hipertensi pada Kehamilan di Desa Nolakla. *Jurnal Kewarganegaraan*, 6(2).
- Mubarak, W. I., Chayatin, N., & Rozikin, S. (2007). Promosi kesehatan sebuah pengantar proses belajar mengajar dalam pendidikan. *Yogyakarta: Graha Ilmu*, 30.
- Notoatmodj, S. (2012). *Metodologi penelitian kesehatan*.
- Notoatmodjo, S. (2012). Promosi kesehatan dan perilaku kesehatan. Jakarta: Rineka Cipta, 193.
- Notoatmodjo, S. (2014). *Ilmu Perilaku Kesehatan (PT RINEKA CIPTA (Ed.))*. PT Asdi Mahasatya, Jakarta.
- Prabawati, S., & Indriyawati, V. (2017). Gambaran Pengetahuan Ibu Hamil Tentang Program Perencanaanpersalinan Dan Pencegahan Komplikasi Di Puskesmas Kalasan Sleman. *Jurnal Kesehatan Samodra Ilmu*, 8(1), 80-88.
- Romlah, S., & Farizal, E. B. (2022). Hubungan Pengetahuan dan Dukungan Suami Dengan Kecemasan Ibu Hamil Trimester III Menghadapi Persalinan Pada Masa Pandemi COVID-19 di Wilayah Kerja Puskesmas Berseri Pangkalan Kerinci. *Ensiklopedia of Journal*, 4(2), 309-314.
- Rozikhan, R. (2007). *Faktor-Faktor Risiko Terjadinya Preeklamsia Berat di Rumah Sakit Dr. H. Soewondo Kendal*. Program Pasca Sarjana Universitas Diponegoro.
- Sari, K. C. (2019). Pengaruh Media Video pada Kelas Ibu Hamil terhadap Pengetahuan Sikap dan Perilaku Pemilihan Penolong Persalinan. *Journal for Quality in Women's Health*, 2(2), 5-15.
- Simarmata, D. (2009). Kajian Ketersediaan Pangan Rumah Tangga, Status Ekonomi Keluarga, Pengetahuan Gizi Ibu dengan Status Gizi Anak Balita di Wilayah Kerja Puskesmas Melati Kecamatan Perbaungan Tahun 2009. *Skripsi, Fakultas Kesehatan Masyarakat Universitas Sumatera Utara, Medan*.
- Spratling, P. M., Pryor, E. R., Moneyham, L. D., Hodges, A. L., White-Williams, C. L., & Martin Jr, J. N. (2014). Effect of an educational intervention on cardiovascular disease risk perception among women with preeclampsia. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 43(2), 179-189.
- Symonds, M. E., & Ramsay, M. M. (2010). *Maternal-fetal nutrition during pregnancy and lactation*. Cambridge University Press.
- World Health Organization (WHO). (2015). *Global Health Observatory data repository : Maternal mortality Data by WHO region*. <http://apps.who.int/gho/data/view.main.1370?lang=en>
- Yudianto, A. (2017). *Penerapan video sebagai media pembelajaran*.
- Yulaikhah, L. (2009). *Kehamilan: seri asuhan kebidanan*. Jakarta: Penerbit Buku Kedokteran EGC.