



The Effect of Website-Based Information on Pregnant Women's Knowledge of High-Risk Conditions and Birth Preparedness

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ARTICLE INFO

Article History:

Received:

5 January 2026

Accepted:

28 February 2026

Published:

28 February 2026

Kata Kunci:

risiko tinggi;
persiapan persalinan;
pengetahuan;
website;
edukasi kesehatan;

Keywords:

high risk;
birth preparedness;
knowledge;
website;
education health;

ABSTRAK

Latar Belakang: Kesiapan persalinan dan kesiapan menghadapi komplikasi adalah strategi untuk mendorong penggunaan tepat waktu layanan kesehatan ibu dan bayi yang terampil. Masih rendahnya angka deteksi dini menjadi tantangan, yang diduga dipengaruhi oleh tingkat pengetahuan. Media website memberikan informasi kesehatan yang mudah diakses dimanapun dan kapanpun. **Tujuan:** penelitian ini bertujuan menganalisis pengaruh informasi melalui website terhadap pengetahuan ibu mengenai risiko tinggi pada kehamilan dan persiapan persalinan. **Metode:** Jenis penelitian ini merupakan penelitian kuantitatif dengan menggunakan pendekatan pre eksperimen dengan one group pre-post design. Populasi dalam penelitian ini adalah semua ibu hamil yang memiliki resiko dalam kehamilan yang ada di Puskesmas Ringinarum. Penelitian dilakukan pada Pada bulan Agustus 2022 jumlah ibu hamil yang memiliki risiko yaitu sejumlah 36 orang. Pengambilan sampel menggunakan teknik total sampling. Variabel independen adalah Intervensi yang diberikan yaitu pemberian Informasi mengenai risiko kehamilan dan persiapan persalinan yang disampaikan pada media website. Variabel dependen adalah pengetahuan ibu hamil. Analisa dilakukan uji bivariat menggunakan Uji Wilcoxon **Hasil:** Hasil uji statistik wilcoxon memperoleh nilai P-value 0,000 atau < 0,05 ini menunjukkan bahwa terdapat pengaruh yang bermakna informasi melalui website terhadap tingkat pengetahuan ibu hamil menghadapi persalinan di wilayah Puskesmas Ringinarum. **Kesimpulan:** Pemberian edukasi pada ibu hamil menggunakan media website meningkatkan pengetahuan ibu hamil tentang risiko tinggi dan persiapan persalinan. Diharapkan ibu hamil yang mengalami risiko tinggi pada kehamilannya dapat meningkatkan pengetahuan yang bisa didapatkan melalui media internet.

ABSTRACT

Background Childbirth readiness and complication readiness are strategies to encourage the timely use of skilled maternal and infant health services. The low rate of early detection is a challenge, which is suspected to be influenced by the level of knowledge. Website media provides health information that is easily accessible anywhere and anytime. **Purpose:** This study aims to analyze the influence of information through websites on maternal knowledge about high risk in pregnancy and childbirth

preparation. **Methods:** This type of research is a quantitative research using a pre-experimental approach with one group pre-post design. The population in this study is all pregnant women who are at risk in pregnancy at the Ringinarum Health Center. The study was conducted in August 2022, the number of pregnant women who are at risk is 36 people. Sampling uses the total sampling technique. Independent variables are the interventions provided, namely the provision of information about pregnancy risks and childbirth preparations submitted on the website media. The dependent variable is the knowledge of pregnant women. The analysis was carried out bivariate test using the Wilcoxon Test. **Results:** The results of the wilcoxon statistical test obtained a P-value of 0.000 or < 0.05 this shows that there is a significant influence of information through the website on the level of knowledge of pregnant women facing childbirth in the Ringinarum Health Center area. **Conclusion:** Providing education to pregnant women using website media to increase pregnant women's knowledge about high risk and childbirth preparation. It is hoped that pregnant women who experience a high risk of pregnancy can increase the knowledge that can be obtained through internet media.

INTRODUCTION

Pregnancy causes physiological and immunological adaptations that allow the mother and fetus to communicate appropriately to support a healthy pregnancy. At the same time, these adaptations can make pregnant women more susceptible to infections, resulting in various pregnancy complications where the pathogen can also be transmitted vertically to the fetus, resulting in poor pregnancy outcomes. (Kumar et al., 2022)

Complications caused by maternal infections or extrinsic abnormalities can occur at any stage of pregnancy, in the first trimester it is essential for the development of the placenta and the formation of a selective barrier between the tissues of the mother and the fetus. The placental barrier, which consists of several layers of maternal and fetal tissue, serves as a strong barrier against human pathogens reaching the fetus. (Burton et al., 2016)

High-risk pregnancies can have an impact on maternal and perinatal mortality rates. Pregnant women face pregnancy risks such as bleeding, depression, infection, and others. However, pregnancy risk factors can be detected early to prevent more serious impacts. The high maternal mortality rate in Indonesia is an indicator of the country's development. The (Islami et al., 2021) *Sustainable Development Goals* (SDG's) target by 2030, reducing the maternal mortality rate to less than 70 per 100,000 births is still far from reach. The maternal mortality rate (AKI is still in the range of 305 per 100,000 live births, not yet reaching the specified target of 183 per 100,000 KH in 2024. Likewise, babies and toddlers who we still have to save from death. One of the main agendas of the SDGs is to reduce maternal mortality and toddler mortality. A quality and regular antenatal examination during pregnancy will determine the health status of the pregnant woman and the baby being born. (Kemenkes RI, 2023)

Every pregnancy is unique, and although complications can occur, most pregnancies are healthy and have no complications. Regular prenatal care is essential to monitor the health of the mother and baby and to address potential problems as early as possible. Some complications in pregnancy include gestational diabetes. Gestational hypertension, preeclampsia, miscarriage, anemia, stunted fetal growth, ectopic pregnancy, placenta previa. (Abdallah, 2023) High-risk pregnancy is a condition that can occur during pregnancy. There are many factors that cause a high-risk pregnancy, such as socioeconomic level, culture, and knowledge. (Islami et al., 2021)

The complications that result in the death of the mother are difficult to predict, which at first either suddenly go on to become uncontrollable or in this case an emergency. Delays in responding to childbirth problems and complications have proven to be one of the main barriers to reducing mortality and morbidity in childbirth. The three delays that can affect the provision and use of obstetric services are delays in deciding to seek treatment if complications occur, delays in reaching treatment and delays in receiving care. (Amalia et al., 2019)

Maternal readiness and preparedness for complications (BP/CR) is a strategy to encourage the timely use of skilled maternal and infant health services, especially during delivery, based on the theory that childbirth preparation and preparedness for complications reduce delays in obtaining care. (Kamineni et al., 2017) Early detection of high risk of pregnancy is important to prevent complications in the mother and fetus. However, the low rate of early detection in some areas is a challenge, which is suspected to be influenced by the level of education and knowledge (Dwi Prafitri & Intan Kusuma, 2025)

According to mothers who have good knowledge of the danger signs of labor and

childbirth, they are 2.29 times more likely to practice. Information about the mother's experience in pregnancy and its effects on psychological health is needed. The development of prenatal care services is needed to develop media about pregnancy, support and coping strategies as well as increase maternal knowledge and confidence in facing childbirth to reduce anxiety and fear in facing childbirth. (Salari et al., 2017)

Nowadays, the reach of the internet is almost limitless, which causes most people to use it constantly. This very wide access to information can trigger a variety of reactions in the patient, both emotionally and motivationally, or encourage the patient to take a variety of actions, which are critical to the diagnostic and therapeutic process. (Bujnowska-Fedak & Węgierek, 2020) Although digital platforms for health education are becoming increasingly popular, few studies in Indonesia have carefully evaluated their effectiveness in increasing knowledge, so this study aimed to analyze the influence of information through websites on maternal knowledge about high risks in pregnancy and childbirth preparation.

METHOD

This type of research is a quantitative research using a pre-experimental approach with one group pre-post design. In this study, it analyzed the influence of information through website media about childbirth in pregnant women on maternal knowledge about pregnancy risk and childbirth preparation. The population in this study is all pregnant women who are at risk in pregnancy at the Ringinarum Health Center. The study was conducted in August 2022, the number of pregnant women who are at risk is 36 people. Sampling uses the total sampling technique. This research received ethical feasibility from the Semarang Ministry of Health Polytechnic No. 0414/EA/KEPK/2022.

Independent variables are the interventions provided, namely the provision of information about pregnancy risks and childbirth preparations submitted on the *keepsehat.com* website media. The dependent variable is the knowledge of pregnant women. The analysis was carried out bivariate tests using the Wilcoxon Test.

RESULT

The results of the research can be seen in the table below:

Bivariate analysis to find out website information on the level of knowledge in dealing with childbirth. In this study, the results of the Shapiro-Wilk normality test obtained a P value of pre-test data >0.05 , which means that the data is normally distributed. Meanwhile, the results of the post-test data normality test obtained a p value of <0.05 which means that the data is not normally distributed, so for bivariate analysis in this study, the Wilcoxon Test was carried out.

Table 1. The influence of information through the website on the level of knowledge in dealing with childbirth

Variabel	N	Before	After	P value
		Mean±SD	Mean±SD	
Knowledge	36	12.17±2.4	18.02±2.14	0,000

Based on the results of the distribution in table 1, it shows that the mean value of the knowledge score before the intervention is given is 12.17 while the mean

knowledge score after the intervention is 18.02. This shows that there is an increase in knowledge before and after the intervention. The results of the wilcoxon statistical test obtained a P-value of 0.000 or < 0.05 this shows that there is a significant influence of information through the website on the level of knowledge of pregnant women facing childbirth in the Ringinarum Health Center area.

DISCUSSION

Health education is a planned and dynamic learning process for individuals and groups. community, or health programs to improve skills, knowledge, and attitude changes related to improving lifestyles in a healthier direction. The learning program in this health education concept is a change from not knowing to knowing and from not being able to do to being able and able to be practiced by anyone, anywhere, and anytime. (Nurmala, 2018)

The Internet has been widely used as an effective tool to meet health information needs around the world, and pregnancy-related information is no exception. Pregnant women mainly evaluate the information obtained through the internet by consulting various online sources before drawing conclusions, and they consider the information found on the internet to be reliable. With the evolution of internet-based technology, social media has penetrated all walks of life. The form of social media is not limited to websites but includes blogs, online forums, online discussion boards, and various other applications or platforms. As an alternative source of pregnancy-related information, social media has become very popular as an instrument for obtaining desired health information, sharing perceived concerns during pregnancy, and communicating with other pregnant women about life and prenatal care. (Zhu et al., 2019)

The results of this study are in line with research conducted that maternal readiness and readiness to face complications in mothers who know the danger signs of pregnancy are almost three times higher (AOR=2.82, 95% CI: 1.211, 6.565) than mothers who do not know it. This may be due to the fact that recognizing the danger signs of pregnancy will encourage women to seek solutions from the medical staff and be willing to take better measures. Knowing the danger signs of pregnancy is a key step in recognizing complications that lead to awareness of the need for medical care, decisions to seek treatment and acting where necessary to obtain emergency care from a skilled service provider. This suggests that it is important for BP/CR to have prior knowledge of the danger signs of pregnancy. (Wudu & Tsegaye, 2021)

The frequency of social media use and its related topics differ between search and sharing behaviors among pregnant women. When it comes to searching for pregnancy-related information, the process of searching for information can be achieved within minutes. Sharing pregnancy-related information requires effort in regulating language as well as attention to security and privacy. The high use of social media for pregnancy-related information means that pregnant women in general do not have enough knowledge about pregnancy and have general anxiety; This is especially true for first-time pregnant women. (Zhu et al., 2019)

From the results of the study, it is known that the respondents' knowledge about the high risk of pregnancy and childbirth preparation before being educated using a well-informed website. After providing information using the website, there was an increase in the number of well-informed respondents. Education for pregnant women is an activity that can affect changes in respondents' behavior, namely changes in knowledge. By providing counseling, respondents get learning that results in a change

from what was previously unknown to known, what was previously not understood is now understood. A person's level of education and knowledge will have an effect in responding to something so that differences in education levels result in differences in the knowledge obtained by respondents. Not only that, a person with a low level of education will hinder the development of a person's behavior towards the acceptance of new information and values that are introduced. (Setiawati & Rumintang, 2019) People who are highly educated tend to have a good mindset in understanding health information, so that people who are highly educated will be more aware and feel the need to independently seek health information that is important for them when facing pregnancy and tend to prefer higher health services(Lestari et al., 2018)

Childbirth readiness and complication readiness show expectant mothers how to recognize the symptoms of childbirth, and the warning signs of pregnancy-related complications. This facilitates mothers to get childbirth services with skilled health workers so that delays in handling risks can be avoided. The next benefit is preparedness for complications, increasing knowledge of danger signs in families and communities, increasing awareness of the problem and accelerating the choice to seek treatment.(Singh et al., 2024)

CONCLUSION

Providing education to pregnant women using website media increases pregnant women's knowledge about high risk and childbirth preparation. Learning that produces a change from what was originally unknown to known, what was previously understood is now understood. A person's level of knowledge will have an effect in responding to something. It is hoped that pregnant women who experience a high risk of pregnancy can increase the knowledge that can be obtained through internet media. The massive use of the internet can be used to find health information so that it can increase the knowledge of pregnant women and families. Thank you to the Semarang Ministry of Health Polytechnic, UPP Kendal Campus, Ringinarum Health Center, respondents and all parties who helped this research.

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