



Effectiveness of Health Education using the PASTORA Application on Early Cancer Detection

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Abstract

Women's reproductive health problems, especially cancer, are health problems faced by women in the world, including in Indonesia. Nurses as an integral part of health services have the responsibility to carry out health promotion and innovate in developing health promotion media, especially during the Covid-19 pandemic. The purpose of this activity is to find out the differences in women's knowledge about early detection of cancer after health education using online media: the PASTORA application. The PASTORA application is an alternative media to increase health knowledge independently and complete it with online consultations with professional health workers. This research method is descriptive quantitative with participants in education totaling 105 women of reproductive age from four provinces in Indonesia, the education process was facilitated by 3 lecturers from the Faculty of Nursing and 16 students participating in the Virtual Integrative KPM at Gajah Mada University. The activity process includes the preparation, implementation and evaluation stages. Before and after education, a pre- posttest was carried out consisting of 15 questions. The results of the analysis of the test showed an increase in knowledge which was marked by an increase in pre-posttest scores for 94 (89.5%) participants, a fixed score of 7 (6.7%) and a decrease in value of 4 (3.8%). The PASTORA application based on Android technology is proven to increase women's knowledge about early cancer detection. It is necessary to develop the PASTORA application with IOS technology to increase the reach of female users in Indonesia. The PASTORA application can be used by nurses as an alternative medium for conducting reproductive health education for women.

Keywords: PASTORA application, early cancer detection, women's health, health promotion

Introduction

Women's health has an important role because it is women who will give birth to a quality generation. Women play a role in educating children in a family, but there are still many women who receive less attention, especially in the health sector (Douthard et al., 2022). Accurate health information is a supporting factor in monitoring and evaluating the achievement of health development policy targets, especially for women's health. When entering the SDGs and

Nawacita era , accurate health data is a supporting factor in monitoring and evaluating the achievement of these development policy targets.(Ross et al., 2022)

Maternal mortality is still high in Indonesia, namely at 305 deaths per 100,000 live births. Barriers include high costs of care, distance to health facilities and social and cultural norms that limit women's options and institutions to access health services for themselves and their children(Rumph et al., 2022). The Indonesian government is increasing efforts to achieve the national development target (RPJMN 2015-2019) in line with goals 2 (hunger) and 3 (health) of the Sustainable Development Goals (SDGs), through a government-funded health and nutrition insurance program. However, challenges remain in accessing high-quality health services, especially for poor women and young married women.(Mahalingaiah et al., 2022)

The percentage of women who had internal health complaints nationally in 2018 was 32.58 percent or around three out of ten women had health complaints in the last month. Women's health problems are not just ordinary illnesses but more than that such as gynecological cancer, HIV, sexually transmitted infections and even maternal death during childbirth. Health complaints that occur in the population can provide an important information to see an increase in public health status. Data regarding the percentage of the population with health complaints can be used by the government in an effort to intervene in health programs.(Littleton et al., 2023)

During a pandemic , interventions for women in the form of education to increase self-awareness are important. Education is an effort that is planned to influence behavior for the better of individuals, groups or communities to increase knowledge about reproductive health. The higher the knowledge will affect the awareness of the importance of maintaining reproductive health. Education can be done through several media and methods. Education carried out with the help of the media will make it easier and clearer for the audience to receive and understand the material presented. In addition, the media can also assist educators in conveying material.(Bakht et al., 2023)

Facing various health service challenges including education on early detection of female reproductive cancer is needed in the future the Covid-19 pandemic which will enter the New Normal Era period. Education in the form of Health Education about cancer continues to be needed by women.(Poloska & Gjonej, 2023) Nurses as an integral part of health services have the responsibility to promote early detection of cancer, nurses must also innovate in providing health services including services and consultations during the Covid-19 pandemic. In the new normal era where the principles of preventing the transmission of Covid-19 are part of life, including social distancing and limiting access to health services , the development of online promotion and prevention has become an alternative medium without time and place limits. This online service method is made in the form of an application called "PASTORA".

The PASTORA application is an online consultation medium as an alternative to maintaining women's health including consultation on early detection of cancer, during the "Social Distancing" period. This application consists of features including Hotline consultations with Specialist Doctors and Nurses, and Information on early detection of cancer, Tips for maintaining health,

Service Agenda, and Donation "Mothers help Mothers. The purpose of this research is to provide health education using the PASTORA application related to early detection of cancer

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and it is hoped that it can increase women's knowledge and awareness about reproductive health.

Literature Review

Various studies have been conducted to apply technology in providing health education and health care facilities. Research by (Kiberu et al., 2017) shows that Health and e-Health's social media and mobile technologies are effective tools for cancer patient education, support, prevention, management, and treatment. Several literature reviews have also reported the effectiveness of social media and m-health technology for cancer education, prevention, treatment, and management. Another study investigated the use of cell phones to increase knowledge about cancer provides an extensive analysis of the foundations and applications of mHealth technology, including the management of chronic diseases such as cancer.(Furtak-Niczyporuk et al., 2023)

Research methods

Research design

The type of research used is descriptive quantitative research that examines knowing differences in women's knowledge about early detection of cancer after health education using online media: the PASTORA application. The implementation of education along with the Integrative KPM activities was carried out virtually on July 30 2021. The stages of health education include 3 stages, namely preparation, implementation and evaluation. The preparation phase includes the Field Supervisor (DPL) developing the PASTORA application, informed consent format, and pre-post education evaluation format, all of these tools are used for education to the target of PKM, namely women of reproductive age. Questions on the pre and post test totaled 15 questions including knowledge about pap smears 3 questions, IVA test 4 questions, BSE 4 questions, and HPV immunization 4 questions.

Furthermore, debriefing activities were carried out for students related to virtual integrative KPM activities which included activity objectives, activity processes, training on the introduction of the PASTORA application and its use , introduction of the Trello application to report educational activities, preparation of forms for educational evaluation given before and after conducting education. The implementation stage of Education is carried out by coordinating activities, identifying targets, and implementing educational activities.

Activities in the implementation phase include explaining health education activities to PKM target women, asking for availability, filling out pre-test and cancer detection questionnaires, downloading the PASTORA Application, giving about 2-3 hours to understand the material and submitting the Hotline in the application if there are questions, contacting participants again education for filling out the post-test.

Sample

The implementation of education is carried out online with the PASTORA Application, there are no specific area boundaries but priority is given to the environment around which students live, as many as 105 women participated in online female reproductive health education, they came from West Sumatra, North Sumatra, West Java and Central Java.

Data analysis

Data processing begins with checking the completeness of the pre- post test questionnaire that has been filled out by educational participants , then a comparison of changes in knowledge is carried out before and after participating in health education using the PASTORA application. In the implementation of education, the principles of respecting and respecting the rights of education participants are observed , such as participation is voluntary, participants are allowed to be accompanied by the closest person during the educational process, names only use initials, and pre- post test data are used as appropriate.

Results

This section presents a table of the results of the analysis of changes in the value of participants' knowledge before and after education using the PASTORA application, and a table of answers per item according to the questions in the pre and post-test.

Based on table 1 , it is illustrated that as many as 89.5% of participants who had been given education through the PASTORA application showed an increase in knowledge as indicated by the addition of correct answers before and after education. This condition illustrates that participants already have sufficient knowledge about reproductive health methods after being given education.

Based on the data, it was explained that before the reproductive health education was carried out, only 58 people answered the question correctly in question number 3, in question number 8 there were 59 people and in question 13 there were 29 people. After education using the PASTORA application, there was an increase in the number of questions correct for each question number 3, 8 and 13, before the education was carried out the percentage that answered correctly was 27.6% while after the education was carried out there was an increase in the number correct with a percentage of 75.2%.

Discussion

The results of the study showed that changes in women's knowledge after being educated about reproductive health resulted in a significant increase in the correct answer score of 94 (89.5%). This is in line with the results of research (Haskel-Ittah & George-Levi, 2023), regarding the use of the "Lawan Roma" application to increase adolescent knowledge about reproductive health. Based on the results of the study, it was shown that there was an increase in knowledge about reproductive health after being given health education with a p -value of 0.012, ($p < \alpha 0.05$) and there was an increase in attitudes about reproductive health after being given reproductive health education (p-value 0.001, ($p < \alpha 0.05$). The results showed that the "Lawan Roma" application was effective in increasing adolescents' knowledge and attitudes about reproductive health. Although the effectiveness test on the PASTORA application was not carried out statistical analysis up to the level of significance test, but an analysis of changes in scores where most of the participants showed an increase in scores after education showed the benefits of the PASTORA application in increasing the knowledge of female education participants. An application can be a method of health promotion and can successfully increase the knowledge and skills of its users.

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According to education will have a good effect if the process of delivering health education uses good media? The media used in health education is an Android-based application. Women, in this case, need to get correct information about reproductive health so that they are able to know what to do and what to avoid. In general, the real need regarding women's basic rights to information related to sexuality and reproductive health includes the provision of friendly and easily accessible services for women of all ages and levels of education.(Petrova et al., 2023)

Health education is an important element for women to understand about health. Without a good understanding of health care information, it will be difficult for a woman to make decisions about her health care choices. In a literature study, confirmed that health education can be effective in preventing cancer and managing symptoms arising from this disease.(O'Connell et al., 2023)

The results of research conducted by (Sabrina et al., 2023) regarding the design of a website-based reproductive health information system in Jember Regency stated that functional, non-functional requirements, external interfaces and communication interfaces were in accordance with the needs of system users, namely systems capable of assisting the data collection process, data search, and data reporting as well as providing broad and in-depth information related to reproductive health which is considered very necessary for women. In the current pandemic era , humans cannot be separated from gadgets, so the development of Android application-based innovation is needed to be able to reach information without having to come to a place. In addition, this application allows for friendly and accessible services, as well as a guarantee of confidentiality. Health workers or nurses can provide reproductive health services easily, broadly, practically, economically, and efficiently. In this case women can get information about reproductive health easily.(Alvarez, 2023)

The Android-based PASTORA application has been proven to increase women's knowledge related to early detection of cancer, but in its implementation there are still obstacles, especially related to not all women using Android mobile phones, so they cannot download the application, the development of the PASTORA application based on IOS technology needs to be developed so that the reach of application users This is broader, and its benefits are increasingly being felt by women in Indonesia.

Conclusion

The results of education using the PASTORA application show that there is an effect of education on increasing knowledge about early cancer detection which is carried out online at Gajah Mada University Integrative KPM activities in 2020 in the provinces of West Sumatra, North Sumatra, West Java and Central Java. Analysis of the results of the pre- post test conducted showed that most (89.5%) of the women who participated experienced an increase in knowledge.

The PASTORA application based on Android technology is proven to increase women's knowledge related to early detection of cancer, but not all women can use this application, especially women with different mobile phone technology, the development of the PASTORA application based on IOS technology needs to be developed to increase user reach, especially

women in Indonesia . The PASTORA application can be used by nurses as an alternative medium for conducting reproductive health education to women.

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