

Literature Study on the Use of Health Applications for Pregnant Women

Nining Sulistyowati

Akademi Kebidanan Anugerah Bintan, Tanjungpinang, Indonesia

| Article Info | ABSTRACT |
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| <p>Keywords: Literature Study, Application, Health, Pregnant Women</p> | <p>The development of information and communication technology is currently getting faster and faster, almost all aspects of life are related to information and communication technology. Information and communication technology is no longer something new in society because people have widely utilized information technology in carrying out their daily activities. Especially after the discovery of mobile devices such as cell-phones, which currently anyone and any group can have. Estimated Fetal Weight is one way to monitor fetal growth in the womb. Along with the development of technology, the use of Android can be used as a medium for educational health information. Determining the beginning of pregnancy and gestational age is important to be able to know the development of the pregnancy. Gestational age can be known, one of which is by knowing the first day of the last menstruation which can be done with an Android-based smartphone application. The purpose of this research plan is to determine the effectiveness of the use of health applications for pregnant women with HPHT and TBJ on the knowledge of pregnant women. The method in this study is a literature study. From several studies/reviews, it was conveyed that there were differences before and after using the application. There was a significant difference in knowledge between before and after the use of the android application was successfully carried out and implemented to the target users, namely pregnant women who use Android-based smartphones. Similar things are in line with the results of the study which also showed that the use of android applications with a p value of 0.000. The application can also improve midwives' knowledge in monitoring fetal growth. Conclusions and suggestions. Health applications are believed to be able to increase knowledge and can monitor fetal weight development and further research is needed for more optimal results.</p> |
| <p>This is an open access article under the CC BY-NC license</p>  | <p>Corresponding Author: Nining Sulistyowati Akademi Kebidanan Anugerah Bintan Jl. Lembah Merpati km 13 Tanjungpinang Kepulauan Riau nsulistyowati48@gmail.com</p> |

INTRODUCTION

The development of information and communication technology is currently getting faster and faster, almost all aspects of life are related to information and communication technology. Information and communication technology is no longer something new in society because people have widely utilized information technology in carrying out their daily activities. Especially after the discovery of mobile devices such as mobile phones, which currently anyone

and any group can have. Applications in the health sector on smartphones that have been widely developed and used widely in society. Smartphones are often used to assist activities in the health sector such as diagnosis, disease therapy, and health education.

Android is one of the most widely used smartphone operating systems as an educational medium compared to Windows, Blackberry, and iOS operating systems (Divya & Kumar, 2016). Several studies have shown that the use of mobile applications and the internet is effective in increasing public knowledge and nutritional awareness behavior (Faizah, 2013). Susanti, et al. (2019) stated that the health mobile apps application on AMP can help cadres in recording and reporting data to the Health Center. Pregnancy is a process that begins with the meeting of egg cells and sperm cells so that fertilization, implantation and birth of the fetus occur. Monitoring of fetal growth is always carried out during antenatal examinations to detect early the possibility of abnormal fetal growth. Estimated Fetal Weight (TBJ) is an estimate or estimation of body weight based on the results of rough calculations outside the uterus (Husin, 2015).

One easy way to estimate the weight of the fetus in the uterus is to measure the Fundal Height of the Uterus (FH) (Husin, 2015). In previous research (Gayatri & Afiyanti, 2004), several formulas have been validated, namely the Johnson, Niswander, modified Niswander, SML, and SFH formulas to estimate birth weight with Fundal Height of the Uterus as the main predictor. Of the several formulas, the Modified Niswander formula is quite good for estimating birth weight. Mobile phones have a great influence on people's lives today. Currently, mobile phones not only function as communication tools, but also as social media tools and information seekers that can be done through internet facilities on mobile phones. To run the functions on a mobile phone, an Operating System (OS) is required. One of the operating systems that is widely used today is the Android operating system (Venny et al., 2019:232). In the Android operating system, there are many applications that can help lighten human work, one of which is a mobile application that can help pregnant women, especially those who have high levels of activity. This is widely used because of its extensive application support that can be downloaded by users via the Android Market or Playstore.

Through an application, the community, especially pregnant women, can find out and learn about pregnancy itself because pregnancy is very important for all prospective mothers, where all prospective mothers will definitely give the best attention and care to their pregnancy. Nine months of pregnancy is not easy. Many pregnant women, especially young mothers with their first pregnancy, are worried about facing and undergoing pregnancy. According to (Tawakal et al., 2015:31) "To calculate fetal biometry and predict the age and weight of the fetus, several approaches can be used. The approaches used include calculating the biparetal diameter (BPD), occipito-frontal diameter (OFD), head circumference (HC) and femur length (FL)". Research on how to calculate fetal biometry automatically through ultrasound images has also been carried out for several years lately. The monitoring process that has existed so far is by actively conducting control and visits to medical personnel such as midwives and obstetricians. For areas with limited medical personnel, consultation and visits to medical personnel become more difficult. Therefore, a system is needed to overcome

the limitations of distance, so that the monitoring process can still be carried out even though they are physically separated.

Health applications on smartphones that have been widely developed and used in society. Smartphones are often used to assist activities in the health sector such as diagnosis, disease therapy, and health education. Android is one of the smartphone operating systems that is most widely used as an educational medium compared to Windows, Blackberry, and iOS operating systems (Divya & Kumar, 2016). Several studies have shown that the use of mobile and internet applications is effective in increasing public knowledge and nutritional awareness behavior (Faizah, 2013). Therefore, researchers are interested in making a literature review of health applications for pregnant women. The purpose of this study was to analyze the effect of using the Application on midwives' knowledge in monitoring fetal growth.

METHODS

This study uses a literature study method where from several previous research results, the study used various methods including analytical methods with a cross-sectional approach. This study is a quantitative study using the pre-experimental design method, one group pretest-posttest type.

RESULTS AND DISCUSSION

In this literature study, several previous research results were obtained which stated that the results of the knowledge analysis using the Dependent Sample T Test, obtained a p-value of 0.000 ($p < 0.05$). From this test it can be concluded that there is a significant difference in knowledge between before and after using the android application. The results of the bivariate analysis showed that there was a relationship between training and knowledge (p value < 0.05). Efforts have been made to improve collaboration in health services, especially in the field of health education. One strategy that can be used is training activities. The majority of training activities that have been carried out have an impact on the knowledge of the participants in the activity (Risnah, et al., 2018). Widodo (2015) said that training is a series of individual activities in an effort to improve skills and knowledge systematically with the aim of having professional performance in their field. Health education is one effort to improve a person's knowledge and abilities which aims to remember real facts or conditions

The results of the study showed that the average increase in knowledge about Estimated Fetal Weight in the Pre-Test and Post-Test was 9. The results of the bivariate analysis obtained a p-value of 0.000 ($p < 0.05$). This shows that there is a significant difference in knowledge between before and after using the android application. Knowledge is the result of knowing, which occurs after someone senses a particular object. Sensing occurs through the five human senses, namely the senses of sight, smell, hearing, taste, and touch (Notoatmodjo, 2012). The knowledge measured in this study was about Estimated Fetal Weight (TBJ), starting from the benefits, how to measure, formulas, and how to increase TBJ in pregnant women. In general, all of this information has been obtained by the respondents at their respective levels of education

However, it is possible that respondents have forgotten the material. This was proven during the pre-test, the average value of respondents was 69 and not a single respondent was able to answer all questions correctly. From the results of the analysis and discussion, it can be concluded that the android application has an effect on the knowledge of midwives. This is in accordance with the results of research conducted by Saraswati, et al. (2020), which showed the influence of using the "Aneminfo" application as a health education media in preventing anemia in adolescents. Android applications can be an alternative media as a means of health education. Puspitasari & Indrianingrum (2021) also stated that the use of m-health applications can increase the knowledge of pregnant women regarding the danger signs of pregnancy in the third trimester compared to the use of KIA books.

Based on the implementation and results of the application testing that the author has made, it can be concluded that the purpose of the research for the design and creation of an application for calculating gestational age and fetal weight using the last menstrual period (HPHT) method based on Android has been successfully carried out and implemented to the target users, namely pregnant women who use Android-based smartphones. The test results show that the application is correct and has no errors in terms of logic or function and is feasible to be implemented. The results of the application test are correct and have no functional errors in all test materials and are feasible to be implemented. The results show that with technological advances, pregnant women are now very close to Android-based smartphones so that the application that the author created makes it easier for pregnant women or families to plan to prepare for the day of birth and makes it easier for users to determine good nutrition for the mother.

The results of the study on the Sayang Ibu application are acceptable and useful for pregnant women. The level of respondent interest, ease of use, efficiency, dependency, and application stimulation are quite good, but its novelty is considered lacking. Further application development such as providing chat features, integration with referral systems is needed. In addition, digital literacy of pregnant women and support from various parties are needed so that the application can be effective. Regulations on the use of emergency applications or emergency calls in Indonesia also need to be developed so that they can be used wisely

Health application for pregnant women made in the form of a prototype that can be run on the Android operating system smartphones. The use of the application is divided into two users, namely midwives and pregnant women. The superior feature of this application is that pregnant women can communicate with midwives to convey complaints, examination results and information about pregnancy. All of this data is equipped with date information, so that it can be used as a pregnancy monitoring process. In addition, there is a menu for calculating the Estimated Date of Birth (HPL) which can be used to predict the baby's birth date. The test results show that the application is correct and has no errors in terms of logic and function and is feasible to be implemented. The results of the application test have been correct and have no functional errors in all test materials and are feasible to be implemented. The results show that with the advancement of technology, pregnant women are now very close to Android-based smartphones so that the application that the author created makes it easier

for pregnant women or families to plan to prepare for the day of birth and makes it easier for users to determine good nutrition for the mother.

CONCLUSION

Health application for pregnant women involving various users including pregnant women, midwives/GasKIA, KIA cadres, and the community in the form of cadres. Based on the evaluation, users were satisfied with the application in terms of usability, information quality, interface quality, and overall satisfaction aspects. There is an influence of the use of the Android Application on midwives' knowledge in monitoring fetal growth. It is expected that midwives can use the Application routinely when carrying out Antenatal Care, so that it can help midwives in monitoring growth and providing counseling to pregnant women about fetal growth.

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