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Pregnancy Care Application Mobile Android Based

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Abstract

Pregnancy is a major concern of the world in current health issues. The maternal mortality rate (MMR) is still quite large in almost all countries in the world due to pregnancy complications. Pregnancy complications can be prevented by improving the health status of pregnant women. However, the lack of knowledge of pregnant women about pregnancy care and inadequate pregnancy care practices causes mothers to be less aware of what is experienced so that there are delays in decision making to seek help, delays in getting transportation to bring to health facilities, and delay in getting help from officers health. The highest number of cellular phone users to access the internet comes from internet users from Java and Bali (92 percent). The purpose of using the internet is 68.7 percent to search for information and browsing. The purpose of the research is to create a pregnancy guide application for the expectant mother to get the information and knowledge about pregnancy care. The method is used in the research is SDLC (*System Development Life Circle*) method is the method that describes the system development life cycle in the design and development of information system. The results of the research showed that application has been completed design and has been tested by taking a sample of 55 pregnant women, which is named Pregnancy Care Application Mobile Android Based. Based on the Function Point relationship, this application gets a score of 9,638 (scale 1-10) which shows the usability of use to the *user*. Thus, this application is very feasible to use because all the features that are prepared are things that are really needed by pregnant women in the care of daily pregnancy.

Keywords: Pregnancy Care, Application Mobile Android.

1. Introduction

Every pregnant woman faces the risk of death, so one of the efforts to reduce maternal mortality is to improve the health status of pregnant. (1) The high number of maternal deaths in Indonesia as compared to neighboring countries in other ASEAN regions, dominated by hypertension in pregnancy or preeclampsia. Likewise, the cause of death in Jepara District was 85.7% due to preeclampsia, both of which occurred during

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pregnancy and postpartum. This shows that preeclampsia is a very important problem. (2,3)

The health status of pregnant women can be improved through appropriate pregnancy care. Pregnancy care behaviors carried out by pregnant women include prenatal care, maintaining personal hygiene, meeting nutritional needs, carrying out physical activity and sexual activity naturally, having adequate sleep, and others. (4,5) Most respondents have high knowledge about the danger signs of pregnancy and have inappropriate behavior in treating pregnancy. (6) However, previous studies showed that self-care behavior during pregnancy is less precise. (7,8) This is in line with research that shows that pregnancy care by pregnant women is not optimal. (9)

Internet users in all provinces in Indonesia most often access the internet using cellular phones (85 percent). However, the highest number of cellular phone users to access the internet comes from internet users from Java and Bali (92 percent). The purpose of using the internet is 68.7 percent to search for information and browsing. (10) Based on the results of the 2014 StatCounter Global Stats research, Android is an operating system that dominates the circulation of smartphones in the country with a market share of 59.91 percent. (11)

This research aims to design, building and testing applications for pregnancy mother "Pregnancy Care Application Mobile Android Based". The Android-based Pregnancy Care Application is a form of application that contains antenatal care / ANC visits, fulfills nutrition, maintains cleanliness, performs activities, sleep and rest, have sexual intercourse, preparation for childbirth, things to avoid during pregnancy, danger signs in pregnancy, other problems in pregnancy, and early signs of labor. With this application made, pregnant women can get information about pregnancy care so that it can help pregnant women to control theirs.

2. Materials and Methods

The research method used is the SDLC (System Development Life Cycle) method, which is a method that describes the life cycle of system development in the design and construction of information systems. Can be seen from the Picture 1 below:

The stages of the SDLC method are as follows:

1. Stages of the definition of needs are the process of planning the application needs of the *user*. There are also the grouping of problems that occur before the application is built so that an assessment of new needs can be carried out.
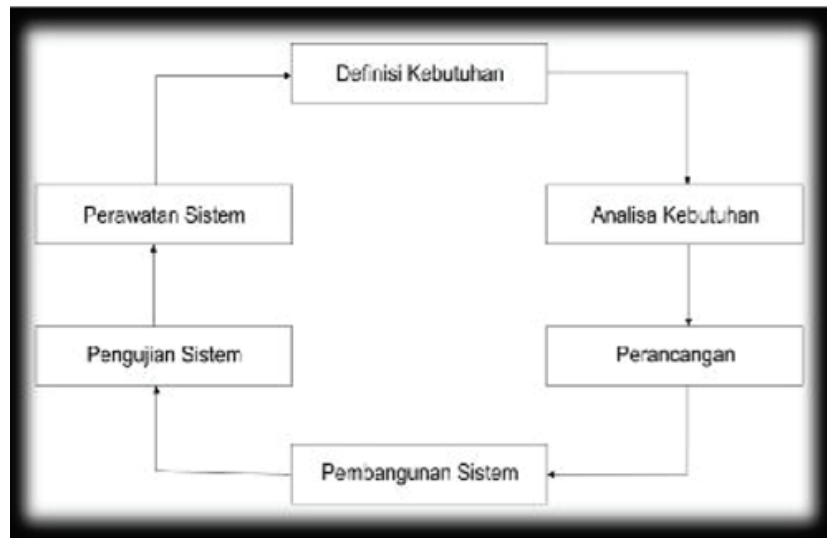
Figure 1: Metode SDLC.

2. The stage of needs analysis is to find and analyze *user* needs, both in the form of information and devices used and applications tailored to *user* needs, then provide the best alternative about applications used by *users* to simplify performance.

3. The design or design stages are the design of the *user interface design* which includes the appearance, form, and design of the pregnancy care application for Android-based pregnant women.

4. The stage of system development (*coding*) is the implementation stage of the design stage which is technically worked out by the *programmer*. After the design is complete, the application is built with *Andromo App Maker*.

5. System testing is a stage of testing pregnancy care applications before they can be used fully. All functions of the application must be tested on pregnant women so that the system is free of *errors* and the results are as needed.

6. Application maintenance stages occur *software* modification, repair of *errors* or feedback from the user to the application that has been used. Maintenance of an application is needed, including the development of the application with the addition of new features to get maximum results.

3. Results and Discussion

3.1. Application design

3.1.1. Splash screen page

Picture 2 shows the splash screen page is the opening page or the first time it appears when the program starts, and this page will close automatically which then leads to the main menu page.
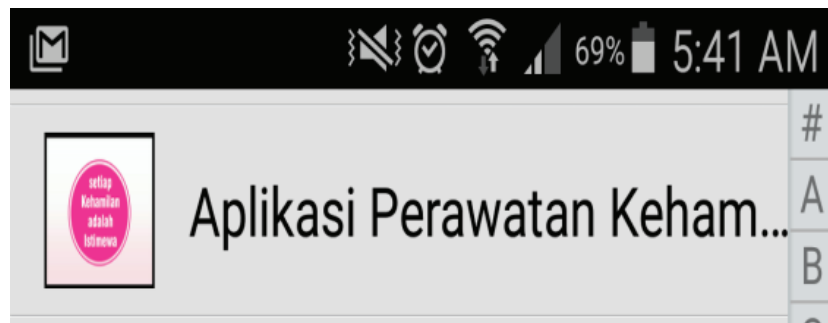

Figure 2: Splash Screen page.

3.1.2. Main menu page

Picture 3 shows the main menu page is the page that appears after the splash screen page. This page contains features of a mobile Android-based pregnancy care application.

3.1.3. Menu page pregnancy examination

Picture 4 shows the page contains general pregnancy checks needed by the user. This page has an arrow to return to the main menu.

3.1.4. Menu page fulfill nutrition

Picture 5 shows the page contains fulfill nutrition. This page has an arrow to return to the main menu.

3.1.5. Menu page maintain cleanliness

Picture 6 shows the page contains maintain cleanliness. This page has an arrow to return to the main menu.

Figure 3: Main menu page.

Figure 4: Menu page pregnancy examination.

Figure 5: Menu page fulfill nutrition.

Figure 6: Menu page maintain cleanliness.

3.1.6. Menu page doing physical activity

Picture 7 shows the page contains doing physical activity. This page has an arrow to return to the main menu.
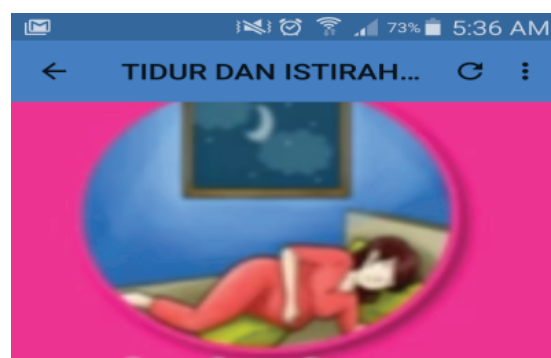
Figure 7: Menu page doing physical activity.

3.1.7. Menu page sleep and rest

Picture 8 shows the page contains sleep and rest. This page has an arrow to return to the main menu.

Figure 8: Menu page sleep and rest.

3.1.8. Menu page doing sexual relations

Picture 9 shows the page contains doing the sexual relations physical activity. This page has an arrow to return to the main menu.

Figure 9: Menu page doing sexual relations.

3.1.9. Menu page childbirth preparation

Picture 10 shows the page contains childbirth preparation. This page has an arrow to return to the main menu.

3.1.10. Menu page things to avoid when pregnant

Picture 11 shows the page contains things to avoid when pregnant. This page has an arrow to return to the main menu.

3.1.11. Menu page childbirth preparation

Picture 12 shows the page contains childbirth preparation. This page has an arrow to return to the main menu.

Figure 10: Menu page childbirth preparation.

Figure 11: Menu page things to avoid when pregnant.

3.1.12. Menu page things to avoid when pregnant

Picture 13 shows the page contains things to avoid when pregnant. This page has an arrow to return to the main menu.

3.1.13. Menu page other problems in pregnancy

Picture 14 shows the page contains other problems in pregnancy. This page has an arrow to return to the main menu.

Figure 12: Menu page childbirth preparation.

Figure 13: Menu page things to avoid when pregnant.

3.1.14. Menu page things to avoid when pregnant

Picture 15 shows the page contains things to avoid when pregnant. This page has an arrow to return to the main menu.

3.1.15. Menu page other problems in pregnancy

Picture 16 shows the page contains other problems in pregnancy. This page has an arrow to return to the main menu.

Figure 14: Menu page other problems in pregnancy.

Figure 15: Menu page danger signs of pregnancy.

3.2. Feasibility testing

System testing in this study was carried out at the midwife's practice with midwife respondents, first-trimester pregnant women, and at the Muhammadiyah Surakarta University campus with student respondents in general by demonstrating a guide application for pregnant women based on android mobile. The process of demonstrating this application by showing directly to the user. The user tries to operate this application then gives his opinion about this application by filling out the questionnaire questionnaire that has been provided which contains five indicators that are assessed in this test, namely: (1) Ease of use of the application, (2) User interest in the application, (3) Functionality application, (4) Benefits of the application, and (5) User recommendations.

Figure 16: Menu page other problems in pregnancy.

The following results of scoring from questionnaires filled out by respondents obtained from the calculations that have been formulated. Scoring results can be seen in picture 17. The following:

Based on Figure 17 above, it was concluded that in terms of ease of use of the application, 12 percent of respondents stated it was very easy, 52 percent said it was easy, 24 percent answered quite easily, 12 percent answered it was not easy. In terms of interest in applications, 36 percent of respondents said they were very interested, 56 percent said they were interested, eight percent said they were quite interested. In the third indicator, in terms of functionality, as many as 92 percents of respondents stated that this application functioned well, eight percent answered well. Then in terms of the benefits of the application, 64 percent of respondents stated that the application was very useful, 20 percent answered it was useful, 16 percent answered it was quite useful. The last in terms of user recommendations, as many as 96 percents of respondents said this application was highly recommended, while those who stated they did not want to recommend this application. Based on the Function Point relationship, this application gets a score of 9,638 (scale 1-10) which shows the usability of use to the *user*.

Information:

Ease of use of the application

User interest in the application

Functionality application

Benefits of the application

User Recommendations

Figure 17: Feasibility testing of pregnancy Care Application Mobile Android Based.

4. Conclusion

The research results show this application has been completed design and has been tested by taking a sample of 55 pregnant women, which is named Pregnancy Care Application Mobile Android Based. Based on the Function Point relationship, this application gets a score of 9,638 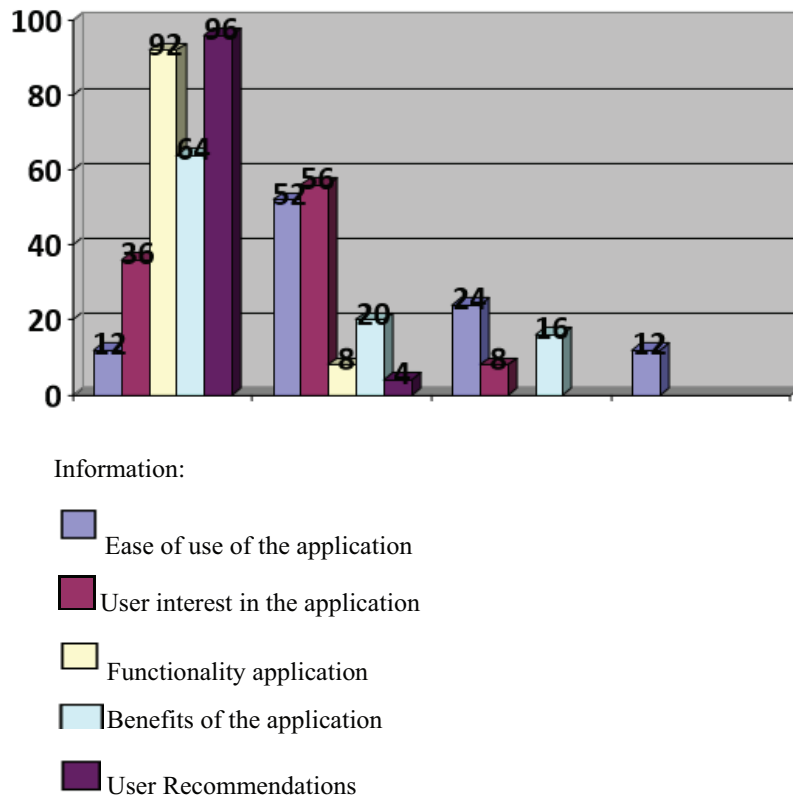(scale 1-10) which shows the usability of use to the *user*. Thus, this application is very feasible to use because all the features that are prepared are things that are really needed by pregnant women in the care of daily pregnancy.

Acknowledgment

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