Design of Adolescent Reproductive Health Telemedicine Sihati an Effort to Improve Adolescent Health in the City of Tasikmalaya

Siti Patimah(✉) and Sri Gustini

Department of Midwifery, Poltekkes Kemenkes Tasikmalaya, Tasikmalaya, Indonesia
spatimah1220@gmail.com

Abstract. With a large number of teenagers population approximately 14,7 million people, Indonesia has a potential asset for the present and future prosperity. Teenager is one of the most critical periods in the human life cycle. At this time, there are physical changes as well as behavior and attitudes changes that are vulnerable to be influenced by health problems, such as drug use, alcohol, premarital sex, unwanted pregnancy, smoking, and HIV/AIDS. Therefore, the government establish the Youth Care Health Service Program to overcome these problems, as mandated by Law No. 36 of 2009 on Health. This program is implemented by Puskesmas, as the primary health care in the community. However, this program encounters obstacles because teenagers have limited access to this program. Therefore, the presence of telemedicine can be an alternative solution to increase the access of teenagers to health programs provided by Puskesmas. The telemedicine tends to be suit with the teenagers' activities because teenagers tend to often use smartphones in their daily activities. This study aims to produce a design of telemedicine application for teenagers reproductive health. The research method used in this research is Research & Development. The population of the study was 1,165 people in the Cikalang sub-district of the Kahuripan Health Center, Tasikmalaya City. The research sample was taken by purposive sampling. The sample size for small-scale trials is 10 people. The development procedure is 1) Analysis of potential and problems; 2) Gathering information; 3) Product design; 4) Design validation; 5) Design improvements; 6) Product trial; 7) Product revision. The research was carried out in September-October 2021. The results of the study have been made the SIHATI telemedicine application. This application has been tested for material validation and media validation by material validators and media validators. The results of the assessment of the two material experts obtained an average value of 42.5 (85%). The assessment of the feasibility of the material in the telemedicine application is included in the very feasible category. The results of the assessment of the two media experts obtained an average value of 47 (94%). Based on the feasibility assessment, the material in the telemedicine application is included in the very feasible category. Two teenagers (20%) gave the lowest score of 45, two teenagers (20%) gave the highest score of 48, one teenager gave a score of 46, and five teenagers (50%) gave a score of 47. Based on the results of the calculation, the results obtained are 93.4, namely the very feasible category without revision.

Keywords: Telemedicine · Youth · SIHATI

S. Februanti et al. (Eds.): MICon 2021, ASSEHR 708, pp. 992–997, 2023.
https://doi.org/10.2991/978-2-38476-022-0_110

1 Introduction

According to Word Health Organization (WHO) the group of Teenagers is those aged 10–18 years, and demographically the teenagers group is divided into the age group of 10–14 years and the age group of 15–19 years. The number of Teenagers in Indonesia is 44,508.5 people (16.47%) of the population of Indonesia [4]. The size of the population of the teenagers age group can be interpreted as an asset and potential of the nation in the future. Teenagers is one of the most critical times in the human life cycle. During this time there are physical changes followed by changes in Teenagers behavior and attitudes that occur rapidly [7]. SDKI results (2012) showed a large number of problems in teenagers such as drinking alcohol, nafza use, premarital sex and smoking. The results of the survey also found that teenagers knowledge of reproductive health is inadequate. Teenagers aged 15–19 years prefer to discuss / vent about reproductive health issues with peers. 57.1% of men and 57.6% women discussed reproductive health with their friends. Sources of teenagers reproductive health information are obtained from peers, teachers, mothers, and health workers.

Policies related to teenagers reproductive health are listed in Law No.36 of 2009 on Health. It is mentioned that reproductive health is carried out through promotive, preventive, curative and rehabilitative activities. Everyone including teenagers is entitled to information, education and counseling about reproductive health that is correct and can be accounted for. One of the government's efforts in addressing youth problems is the establishment of the Youth Care Health Service Program implemented by Puskesmas as a primary health service through a partnership approach with various related sectors including BKKBN, Kemendikbud, Kemenag, Kemensos [9]. In its implementation, the PKPR program faces various obstacles. Education is one of the fundamental obstacles, the more problems in teenagers, the provision of information and services of teenagers reproductive health is very important. Problems that arise include access to clear and transparent information for teenagers is very limited. The existence of youth health care centers has not been fully accepted by the community.

Teenagers have characteristics that are active, dynamic, creative, quickly bored and have great curiosity. Today information technology science is increasingly rapid, so that teenagers are increasingly easy to access information about reproductive health and sexuality from various media. But the information provided by the media is not necessarily true. Until now, the needs of adolescents for information, education, and reproductive health services have not been fulfilled properly. Now, almost all human life is centered on a smartphone in the grip. This inevitably also affects how to meet basic needs, including in getting access to health. The presence of telemedicine can be the answer to the ease of accessing health services. Telemedicine is a technology that allows patients to discuss with doctors privately, without having to face to face. The discussion will help patients get informat ion about the suspected diagnosis, treatment or first treatment of the disease or injury cases, to tips in improving body health [3].

2 Method

The research method used is Research & Development or development research. This method is adapted from the development procedure according to Sugiyono (2017) which

includes: 1) Analysis of potential and problems; 2) Collect information; 3) Product design; 4) Design validation; 5) Design improvements; 6) Product testing; 7) Product revisions; 8) Trials use; 9) Product revisions; 10) Mass product manufacturing.

The study population is teenagers in the village of Cikalang Kahuripan Health Center of Tasikmalaya City as many as 1,165 people. Sample withdrawal using purposive sampling, large samples for small group trials of 6–8 people (Setyosari). The data analysis techniques used in this research are using quantitative and qualitative data analysis. Quantitative data is obtained from questionnaires in the form of assessment scores by media experts, material experts and respondents. Qualitative data is obtained from advice and input provided by media experts and material experts. As for the analysis for the eligibility category of expert assessment, using scores on the likert scale.

3 Result

The design of the telemedicine application of adolescent reproductive health is an android- based application system, which contains information about reproductive health that must be known by adolescents. The material in this application is in accordance with health information in the adolescent health program at puskesmas. This application contains the main menu features of Health information consisting of personal hygiene, balanced nutrition, NAFZA, STI Disease, Reproductive Health, Mental Health, recognize and prevent PTM, and COVID-19 Prevention.

This application also has a consultation menu with admins connected through the whatsapp application, through this menu users can ask/consult directly about health information that wants to be known or perceived problems. Whatsapp used is whasapp business has a more complete setting. The results of Paulette's research (2019) constraints in the implementation of PKPR are the time and activities of active adolescents, therefore this application is expected to overcome this. Here are the stages of making the application.

3.1 Potential Problems and Review Needs

This study departs from the problems found after conducting interviews with adolescent health program workers at Kahuripan Health Center in Tasikmalaya city. The new limited adolescent health program is implemented in Posyandu Remaja, and health extension activities to junior high school, high school have not been done optimally because of the limited officers. Posyandu teenagers there is only one per village with limited activities because of the difficulty of the time of the teenagers. Likewise, the access of teenagers to puskesmas is very small. The large population, the presence of adolescent posyandu and high mobile phone use become the potential for researchers to develop an application that can provide health information for adolescents.

3.2 Data/Information Collection

Once potential and problems are obtained, then collect various information that can be used as planning materials, including collecting references, material materials, books

Table 1. The Validation of Material Experts

Number	Apraisers	Total score	Average	Percent	Category
1	Validator 1	40,5	4,05	81	Very feasible
	Validator 2	48,5	4,85	97	Very feasible
		40,5	4,45	89	Very feasible

Table 2. The Validation of Media Experts

Number	Apraisers	Total score	Average	Percent	Category
1	Validator 1	48	4,8	96	Very feasible
	Validator 2	46	4,6	92	Very feasible
		47	4,7	94	Very feasible

and journals. The materials contained in the application are personal hygiene, balanced nutrition, NAFZA, STI Disease, Reproductive Health, Mental Health, recognize and prevent PTM, and COVID-19 Prevention. The topics provided are in accordance with the youth health monitoring handbook of the Ministry of Health.

3.3 Create a Product Design

Once the data is collected the next step is to create a product design in the form of an android-based telemedicine application. The creation of applications using android studio on the computer, with a webview base.

3.4 Design Validation by Media Experts and Material Experts

After the application is completed, the application feasibility test is carried out, namelydesign and material validation. This validation is done by two material experts and two media experts. Validation carried out by material experts, contains about aspects of material conformity, accuracy of the material, accuracy of the material and encouraging curiosity. Material assessment questionnaire on application as much as 10 points with a rating scale of 1–5; 1 = very unworthy, 2 = unworthy, 3 = decent enough, 4 = decent, 5 = very decent with a total score of 50 points. Validation results by material experts can be seen in Table 1 (Table 2).

3.5 Design Revisions

From the results of the assessment of the two material experts obtained an average score of 44.5 (89%). Based on the feasibility assessment, the material in telemedicine applications falls into a very viable category. Revisions are carried out based on input suggestions from validators to one that can use language that is tailored to the stages of

Table 3. The Test Results of The Product

Number	Apraisers	Total score	Average	Percent	Category
1	Teenagers	467	46,7	93,4	Very feasible

age and understanding of adolescents. The topic of discussion of the material is made lighter.

The assessment of both media experts obtained an average score of 47 (94%). Based on the feasibility assessment, the material in telemedicine applications falls into a very viable category. Revisions are made based on input suggestions from validators to one, namely improvements on the front, spaces, margins, titles. Suggestions from the 2nd validator are the addition of the back button on the menu, the improvement of the title location, the addition of the exit button, and the addition of material references to the application.

3.6 Product Testing

After validation by material experts and media experts and revisions in accordance with the advice and input of validators, then tested in small groups. In the test phase of this was carried out on teenagers as many as 10 people in the kahuripan health center area (Table 3).

Based on the results of the calculation of the obtained results from 93.4 that with the category of very decent without revision. Based on the results from the test group is small, then not carried out the revision of the product again.

4 Conclusions and Suggestions

From the research that has been done, it can be concluded the following:

1. Product design has been created in the form of android-based telemedicine (telehealth) application. It is made using android studio on a computer, with a webview base. This application is included in the m-Health (Mobile e-health) system.
2. The results of the assessment of the two material experts obtained an average score of 44.5 (89%). Assessment of material feasibility in telemedicine applications falls into a very feasible category
3. The results of the assessment of both media experts obtained an average score of 47 (94%).
4. Based on the feasibility assessment, the material in telemedicine applications falls into a very feasible category.
5. Trials in Adolescents give a rating of 46.7 (93.4) which is with a very decent category without revision.
6. Although the application still requires follow-up, the use of online applications as a medium of health services is recommended for use by adolescents.

References

1. American Academy of Family Physicians. https://www.aafp.org/media-center/kits/telemedicine-and-telehealth.html. Diakses pada 26 Juni 2020
2. Astridya P, Widjiartini, Palman S. Buletin Penelitian Sistem Kesehatan-vol. No.3 Juli 2016. Budi S. Rahmah M.Setiasari T. Sularsih. 2015. Perkembangan dan masa depan telemedika di Indonesia. Diakses tanggal 27 juni 2020. dari. cite. Ft.ugm.ac.id
3. Badan Pusat statistic. 2020. Jumlah penduduk menurut kelompok umur dan jenis kelamin. Diaskes dari: https://www.bps.go.id/indikator/indikator/view_data_pub/0000/api_pub/YW40a21pdTU1cnJxOGt6dm43ZEdoZz09/da_03/1
4. Depkes RI. Survey Demografi Kesehatan Indonesia. 2012. Depkes. Jakarta.
5. Fakultas Kedokteran Universitas Gadjah Mada. https://fk.ugm.ac.id/telemedicine-permudah-akses-layanan-medis/. Diakses pada 27 juni 2020
6. Hurlock, Elizabeth B.1998. Adolescence Development. Fourth edition. Mcgrawhill Kagokusha.Ltd.
7. Kemenkes RI.2014. Pedoman Standar Nasional Pelayanan Kesehatan Peduli Remaja. Kemenkes RI. Jakarta
8. Kemenkes RI.2015. Pedoman Pelayanan Kesehatan Reproduksi Terpadu di Tingkat Pelayanan
9. Kesehatan Dasar. Kemenkes. Jakarta.
10. Layyin Mahfina, Elfi Yuliani Rohmah, Retno Widyaningrum, Remaja dan Kesehatan Reproduksi,
11. Made Okara Negara, Mengurangi Persoalan Kehidupan Seksual dan Reproduksi Perempuan dalam Jurnal Perempuan cetakan No.41, (Jakarta: Yayasan Jurnal Perempuan, 2005) hal 9
12. Mohamad J,Amal K,Ackmad F. 2015. Implementasi aplikasi Telemedicine berbasis jejaring social dengan pemanfaatn Teknologi Cloud Computing. Jurnal edukasi dan Penelitian Informatika (JEPIN) Vol.1.No.1 2015
13. NCBI. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6684176/. Diakses pada 27 juni 2020
14. Sugiyono. Metode penelitian Kuantitatif, Kualitatif dan R&D. Bandung: Alfabeta; 2017. Hlm. 80–297.
15. Undang – Undang No.36 Tahun 2009 Tentang Kesehatan.
16. Paulette. 2019. Gambaran implementasi program Kesehatan reproduksi remaja di Puskesmas Getasan. Jurnal. Keperawatan Respati Yogyakarta 6 (2)
17. WHO. https://www.who.int/goe/publications/goe_telemedicine_2010.pdf. Diakses pada 26 juni 2020
18. Zora Adi Baso, Judi Raharjo, Kesehatan Reproduksi Panduan bagi Perempuan (Sulawesi Selatan: Pustaka Belajar, 1999) hal 1