

Development of Re-Hits (Adolescent Reproductive Health): Android Application As A Strategy to Increase Adolescent Knowledge about Reproductive Health

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ABSTRACT

Adolescence is a transitional period from childhood to adulthood characterized by high vulnerability to sexually transmitted infections and various reproductive health issues. Currently, teenagers in Indonesia constitute 24% of the total population. An urgent issue identified is the high prevalence of unwanted pregnancies among teenagers aged 14-19, standing at 19.6%, with 20% of these cases resulting in abortions. Moreover, a significant number of teenagers have been exposed to sexual activities through online media. This occurrence is attributed to teenagers facing challenges in accessing reliable information about reproductive health and risky sexual behavior. Therefore, the authors innovated with a promotive media called REHITS (Reproductive Health In Teenagers). The main objective is to examine the influence of the REHITS application on improving teenagers' knowledge about reproductive health. This research employs a quantitative method. The application was designed using the development method developed by Luther (1994). It includes features such as educational videos, articles, podcasts, posters, FAQs, and a chatbot. Of the participants who used the REHITS application, 87% found the provided information helpful, found the application interface engaging, and encountered no errors during its use. Thus, there is an influence of the development of the REHITS application on increasing teenagers' knowledge about reproductive health management.

Keywords: Reproductive health, adolescent, application

INTRODUCTION

Human resources are one of the crucial components in achieving sustainable development goals, also known as Sustainable Development Goals (SDGs). One specific target of the SDGs focuses on adolescent reproductive health, representing a global commitment to ensuring that adolescents have equal access to safe, affordable, and quality reproductive health services. This objective is designed to fulfill the human rights of adolescents regarding reproductive health and reduce the negative impacts of unwanted pregnancies and sexually transmitted diseases.

Adolescence is a critical stage of life that lays the foundation for an individual's reproductive journey. As defined by the National Population and Family Planning Board (BKKBN), adolescence spans from ages 10 to 24 and includes unmarried individuals. This period is marked by physical and psychological changes, a strong sense of curiosity, a penchant for challenges, and a propensity to take risks without mature consideration (Decker et al., 2015). The 2020 Population Census data indicates that Indonesia's

adolescent population (aged 10-24) stood at 67 million, comprising 24% of the total population, making adolescents a central focus of national development. Regarding reproductive health, adolescents are particularly vulnerable to the adverse effects of sexually transmitted infections, such as HIV-AIDS, and unintended pregnancies. According to 2021 BKKBN data, the prevalence of unwanted pregnancies among adolescents (aged 14-19) is 19.6%, with 20% of cases resulting in abortions. Moreover, 66.6% of adolescent boys and 62.3% of adolescent girls have been exposed to sexual activities (pornography) through online media (Andriani et al., 2022). Adolescents often encounter challenges in accessing accurate and comprehensive information about reproductive health, leading them to engage in risky premarital sexual activities, sometimes before reaching the age of 15. From a health perspective, deviant actions encompass issues related to unprotected sexuality, the transmission of sexually transmitted diseases, and unwanted adolescent pregnancies. (Asisdiq & Side, 2021)

The issue of sexuality can be attributed to several factors, including parents' attitudes towards sex education, which is still considered taboo, the insufficient practice of religious and cultural values, inadequate sexual education, and reproductive health education in certain regions by healthcare providers, and the proliferation of pornography and online sex. Other studies also indicate that adolescents are at high risk of abortion, with 30% (700 thousand) of abortion cases in Indonesia occurring among this age group. Moreover, adolescents also exhibit poor practices in maintaining menstrual hygiene (Hapitria & Rinela, 2017).

A solid understanding of reproductive health is a crucial key to protecting adolescents from risky sexual behaviors and the various negative health and well-being risks associated with them. Therefore, it is essential to have targeted and age-appropriate media that align with the characteristics of adolescents (Sari, 2021). The selection of media is pivotal in helping adolescents grasp reproductive health since it is a sensitive topic to discuss in public. In the era of widespread gadget use among adolescents, it has become a viable solution to explore.

The development of a smart Android-based application that can be freely accessed by adolescents with accurate information is a promising approach. The application, called RE-HITS (Reproductive Health in Teenagers), combines educational videos, articles, podcasts, posters, FAQs (Frequently Asked Questions), and a chatbot. The objective of this research is to develop the Reproductive Health in Teenagers (Re-HITS) application

as a suitable health promotion tool to assist adolescents in accessing information regarding adolescent reproductive health.(Denno et al., 2021)

METHOD

This research employs a quantitative approach. The first stage involves formulating appropriate media according to the target audience's needs. This activity is carried out through the collection of secondary data related to adolescent characteristics. The second stage is the media design phase. The design phase is conducted to assist the researcher in designing the RE-HITS application that will be developed. The design stage encompasses data collection criteria, flowcharts, and storyboard sketches. In designing the Re-HITS application, the author develops it using the application development method developed by Luther (1994). The stages involved are as follows: 1) concept, 2) design, 3) material collection, 4) assembly, 5) testing, 6) distribution.

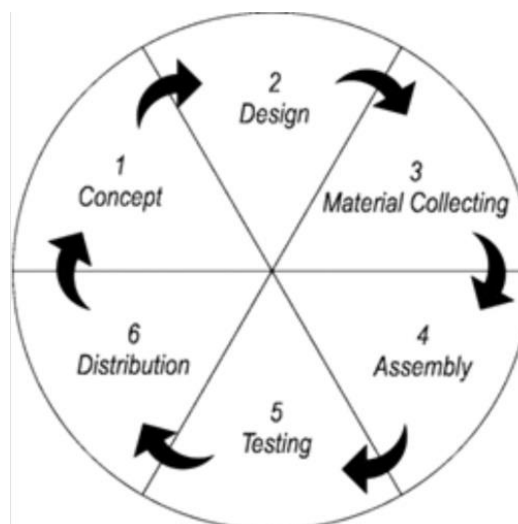


Figure 1. Luther Methode

In the research phase, two types of questionnaires were given to adolescents. The first questionnaire was used to assess the suitability of the application. The second questionnaire was used to measure adolescents' understanding of one of the topics related to adolescent health with a 20-minute access time.(Pratiwi et al., 2020) The research sample population consisted of 38 adolescents attending junior high school. The research was conducted on May 21, 2023, in Kenagarian Simpang Tonang, Pasaman. Data collection techniques involved pre-test and post-test using questionnaires with written questions directly filled out by the respondents.

RESULT AND DISCUSSION

The results of this research show that the development of the RE-HITS application for adolescent reproductive health education can have a positive impact. The application was tested with a group of adolescents with the following characteristics. The respondents amounted to 38 adolescents, predominantly female, accounting for 77%, with the most common average age being 17 years old.

Table 1. Characteristics of teenagers

Characteristics		n	Percentage
Age	16 years old	12	47%
	17 years old	26	53%
Total		38	100%
Gender	Man	11	23%
	Women	27	77%
Total		38	100%

Table 2. Application Feasibility Trial Results

Assessment aspect	Percentage	Predicate
Button Function	100%	Excellent
Material Suitability	95%	Excellent
The use of language	85%	Good
Application Display Design	75%	Good
Ease Of Access	90%	Excellent

Based on Table 2, in the creation of this health promotion media, careful attention was paid to increasing font size, maintaining a neat profile design, and synchronizing text colors with the background to enhance the application's visual appeal. A total of 75% of respondents agreed that the provided display design is very attractive. In terms of software usability, 90% of respondents approved of the ease of use, considering touch functionality, scrolling, clarity of usage instructions, and 100% of respondents reported no bugs or errors when running the application. Regarding the application's features and content, respondents found the RE-HITS application highly engaging. The inclusion of images that clarify the content helped them understand the material, and the attractive interface prevented teenagers from getting bored while using the application. The Reproductive Health in Teenagers (Re-HITS) application program can be a manifestation of the healthcare service's concern and responsibility, especially health promoters, in promoting a culture of health through the provision of reproductive health information to adolescents. This application can assist adolescents in understanding their health risks and

the preventive measures they can take. As many as 85% of respondents agreed that the language used is easy to understand. (Hapitria & Rinela, 2017).

Tabel 3. Changes in Knowledge of Teenagers in Pre-Test and Post-Test

Knowledge level	Pre – test		Post - test	
	n	%	n	%
Not enough	18	47,4	0	0,0
Enough	20	52,6	3	7,9
Good	0	0	35	92,1
Mean SD	47,9 ± 8,5		82,6 ± 8,8	
p-value	0,043		0,043	

Table 3 provides information that before the intervention, the level of knowledge among respondents was categorized as fair and poor. After the RE-HITS application intervention, the respondents' knowledge increased to 92.1%, categorized as good. The average knowledge score of the respondents increased from 47.9 to 82.6 ($p=0.043$). These results indicate a significant difference in the knowledge of adolescents before and after the intervention. The RE-HITS application intervention, by providing up-to-date information and combining various features to support adolescent understanding, played a vital role in this improvement.

The significant increase in knowledge observed among adolescents can strongly be attributed to the ease of information access provided by the 'ReHits' application. This accessibility has opened doors for adolescents to access reproductive health information swiftly, accurately, and seamlessly. Previously, adolescents might have struggled to find reliable sources of information or even felt reluctant to discuss reproductive health issues with adults or healthcare professionals. However, with the introduction of the RE-HITS application, everything has changed. Adolescents now have access to relevant and verified information at their fingertips. They can access interactive lesson modules, watch educational videos, take quizzes, and participate in discussion forums without facing physical or emotional barriers. This creates a safe and open environment where they can learn about sensitive topics like reproductive health. (Ippoliti & L'Engle, 2017)

CONCLUSION

The development of the RE-HITS (Reproductive Health In Teenagers) application has had a significant impact on increasing teenagers' knowledge about reproductive health. A total of 92.1% of respondents reported a difference in knowledge before and

after using the RE-HITS application. Additionally, 87% of respondents did not encounter any issues with the application, such as bugs or errors, during its use. The implication is that adolescents using the RE-HITS application have a better understanding of reproductive health, which can assist them in making wiser decisions and adopting healthier behaviors in this regard. According to the respondents, the RE-HITS application is highly engaging in terms of its features and content. The inclusion of images that clarify the material helps them comprehend it, and the attractive interface prevents teenagers from getting bored while using the application. Therefore, it can be concluded that the development of the RE-HITS application is a positive step in raising awareness and understanding among teenagers about the importance of reproductive health.

REFERENCE

- Andriani, R., Suhrawardi, & Hapisah. (2022). Hubungan tingkat pengetahuan dan sikap remaja dengan perilaku seksual pranikah. *Jurnal Inovasi Penelitian*, 2(10), 3441–3446.
- Asisdiq, I. S., & Side, S. (2021). И Актуальная Проблема Здоровья Населения [1 , 2 , 12]. Он Оказывает Многосторонние Воздей - Ние Индивида И Даже На Продолжительность Жизни , Вовлекая Все Сферы Жизнедеятельности Человека И Откладывая Отпечаток На Возможности И Способы Взаимодействия Орг. *Pendidikan Kimia PPs UNM*, 1(1), 91–99.
- Decker, M. J., Berglas, N. F., & Brindis, C. D. (2015). A call to action: Developing and strengthening new strategies to promote adolescent sexual health. *Societies*, 5(4), 686–712. <https://doi.org/10.3390/soc5040686>
- Denno, D. M., Plesons, M., & Chandra-Mouli, V. (2021). Effective strategies to improve health worker performance in delivering adolescent-friendly sexual and reproductive health services. *International Journal of Adolescent Medicine and Health*, 33(6), 269–297. <https://doi.org/10.1515/ijamh-2019-0245>
- Hapitria, P., & Rinela, P. (2017). Efektifitas Pendidikan Kesehatan Melalui Multimedia dan Tatap Muka terhadap Pengetahuan dan Sikap Ibu Hamil tentang Asi dan Menyusui. *Jurnal Care*, 5 no 2, 156–167.
- Ippoliti, N. B., & L'Engle, K. (2017). Meet us on the phone: Mobile phone programs for adolescent sexual and reproductive health in low-to-middle income countries. *Reproductive Health*, 14(1), 1–8. <https://doi.org/10.1186/s12978-016-0276-z>
- Pratiwi, W. R., Hamdiah, H., & Asnuddin, A. (2020). Deteksi Dini Masalah Kesehatan Reproduksi Melalui Pos Kesehatan Remaja. *JIPEMAS: Jurnal Inovasi Hasil Pengabdian Masyarakat*, 3(1), 87. <https://doi.org/10.33474/jipemas.v3i1.5035>
- Sari, R. I. (2021). *Android-Based Application of Women ' s Reproductive Health to Parent Knowledge as a Learning Media*. 4(May), 196–201.