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# Malaysian Journal of Medicine and Health Sciences (MJMHS)



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The Malaysian Journal of Medicine and Health Sciences (MJMHS) diterbitkan oleh Fakulti Perubatan dan Sains Kesihatan Universiti Putra Malaysia. adalah menjadi jurnal utama mengenai semua aspek perubatan dan sains kesihatan di Malaysia dan di peringkat antarabangsa. Tumpuan M penyelidikan dan pembangunan saintifik yang asal, isu-isu baru dan analisis dasar yang berkaitan dengan sains perubatan, bioperubatan dan klinikal Medicine and Health Sciences kini diindeks dalam pangkalan data berikut: Scopus, EBSCOhost, ISC, dan Rubrica.

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## ORIGINAL ARTICLE

# What Influences Youth Decision on Using “Remaja Sehat” Application?

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## ABSTRACT

**Introduction:** Adolescent Reproductive Health problems are still a priority in Indonesia. One of the causes of this problem is that access to information is still conventional. Therefore knowledge about reproductive health must be improved through applications that are following the characteristics and needs of adolescents. “Aplikasi Remaja Sehat” is a source of information and educational media in addition to information about the health information to adolescents without spending money and can be accessed by downloading applications in the Appstore about adolescent reproductive health. **Methods:** This study was conducted on Surabaya high school students to analyzing the variable diffusion of innovation (relative advantage, compatibility, complexity) resulting from the use of “Aplikasi Remaja Sehat”. The method used in this study was pre-experimental by designing a post-only design. The data collection method in this study used a pre-experimental design with a post-only design where giving intervention to the respondent was then given a posttest measurement. Samples taken by simple random sampling were as many as 302 samples. **Results:** The results showed that there were significant differences with the degree of conformity with the application (p-value = 0.026) while compatibility (p-value = 0.304) and complexity (p-value = 0.312) had no significant effect on the decision. **Conclusion:** The conclusions in this study are related to the variable diffusion of innovation that results in decisions in using healthy adolescent applications. Therefore “Aplikasi Remaja Sehat” can be used as a health promotion medium for adolescents that is suitable for teenagers’ needs.

**Keywords:** Applications, Decisions, Relative advantages, Compatibility, Complexity

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## INTRODUCTION

Adolescence is a phase to find out about one’s identity. Decision-making, not wanting to be considered as a kid, wanting to learn more and a high level of curiosity are examples of the characteristics of an adolescent. This adolescence phase is the time when psychological condition tends to get easily influenced by the environment. As time keeps progressing, the improvement in the sophistication of technology and the internet makes it easier to socialize and to achieve the desired things through education, business, socialization, and soon. A previous study mentioned that during adolescence are many health behaviors that influence future illnesses (1). The main cause of adolescent morbidity and mortality which shows that all health interventions must be designed for adolescents, because adolescence here is still in adjustment and life management in the future. In research improving adolescent reproductive health in Bangladesh recommends the implementation of adolescent reproductive health interventions in the

environment of schools, communities, and health facilities to complement the needs of adolescents in adolescent reproductive health (2).

According to Speizer’s research, mahnani and colvin mentioned that developing countries have an acute risk of sexually transmitted infections and HIV or births outside of marriage (3). The average teenage girl with age of fewer than 25 years. Adolescents tend to have problems, either from their behavior or adolescent reproductive health itself. Cases related to reproductive health in Indonesia are increasing. According to the National Narcotics Agency (BNN), in 2012 there were 3.6 million drug users among adolescents and this increased in 2013 to 3.8 million by BNN (4). The Indonesian Ministry of Health states that, from April to June 2011, the number of AIDS cases reported was 2,001 cases from 59 regencies/cities in 19 provinces. AIDS cases in Surabaya in total were as many as 296 people and HIV cases as many as 627 in 2016. Adolescent reproductive health has the development and effective implementation must be a top priority for every world if you do not want more HIV (5). According to the BKKBN, in 2010, Surabaya, recorded 54% of its adolescents had had sex and was the highest compared to other cities, such as in Bandung (47%) and Medan (53%).



Education in Indonesia is quite advanced with the help of various sophisticated technologies. The internet has been used by adolescents in Indonesia in various ways. Internet usage in many ways produces an impact depending on its usage, whether positive or negative. Accomplishment in the use of the internet or technology is very important to be done from an early age, using it to improve and use educational facilities through the assistance and support of technology. According to the Association of Indonesian Internet Service Providers regarding the results of surveys on penetration and the behavior of Indonesian internet users in 2017, the growth of internet users in Indonesia in 2017 was 143.26 million, while, based on the age of the composition of internet users, most users were aged 19-34 years, as much as 49-52%. So, it can be concluded that many people access the internet at an adolescent age through any kind of media by APJJI (6). A previous study mentioned that adolescents feel more like learning about and understanding HIV/AIDS, alcohol, pregnancy through electronic media as the main source for getting all information knowledge (7). Therefore, to build awareness of reproductive health knowledge, this can be done through media based on the needs and the popularity according to today's youth so that the messages from the media can be delivered and easily accessed by using the interest of adolescents toward the media. A previous study mentioned that in 2008 shows that health education can increase adolescent knowledge about adolescent reproductive health (8). Teenagers want to know how to deal with sexual relationships and feelings, unwanted pregnancy, and STDs. 42 million Indonesian youth need information, one of which can be used as a strategy to include all of this information (9).

Educational media in the form of the "Remaja Sehat" application is one of the educational applications about adolescent reproductive health. This application, besides showing various information about three adolescent reproductive health topics, including drugs, sexuality and HIV/AIDS, also features a game in the form of a quiz. Thus, the students can play the game while learning. The theory of innovation diffusion is used to measure effectiveness. This research will focus terms on the relative advantages, compatibility or suitability of innovation to all needs and the goals of the target and the complexity or difficulty and easiness of an innovation that will be used or utilized by the user. A previous study mentioned that behavioral outcome measurement will provide a stronger evidence base for assessing the effectiveness of new digital media in changing adolescent sexual behavior (10).

## MATERIALS AND METHODS

The locations chosen were at Surabaya high schools, namely SMA Negeri 19 Surabaya and SMA Muhammadiyah 7 Surabaya. The school selection was

based on representatives of public and private schools. The samples in this study were 302 students using simple random sampling. This study uses a pre-experimental method. The form of intervention was by giving the "Remaja Sehat", the application which contains various information and games that support adolescent reproductive health. The "Remaja Sehat" application is specifically developed as an educational media based on entertainment. Provision of the intervention was often as twice a week. The average sample accessed the application for  $\pm$  15-25 minutes. The application contents include reproductive health, drugs, and HIV/AIDS and the application also includes information, pictures and games/quizzes.

This study uses relative advantage, compatibility, and complexity as its variables. These three variables are taken from the theory of innovation diffusion. Innovation in the form of application for adolescents will be given to the adolescents in Surabaya High School and the students will fill out a questionnaire that discusses the three variables.

## RESULTS

### Characteristics of Respondents

This study classified the characteristics of respondents based on their age, residence, and gender. Table I shows the results of the frequency distribution of respondents based on age showed the group of age 17 years old is greater than any other group of ages within all respondents, as many as 161 students or 53.3%. The rest is the age group of 16 years old as many as 125 students and the age group of 18 years as many as 17 students. Adolescents at the age of 17 years old are at a stage where they experience the process of finding their true identity, which causes them to have instability in determining attitudes and they will tend to try new things because of their high level of curiosity. Adolescents have the forefront of the digital revolution which is a challenge for adolescent reproductive health experts to educate through this rapidly advancing technology (11); this will put more risk on adolescent reproductive health problems (12). Despite the easier associations offered by today's technological sophistication, if not accompanied by the fear of reproductive health in adolescents themselves, it will result in various adolescent reproductive health problems.

Table I shows the results of the frequency distribution of respondents based on their residence were more dominant in students who lived at home with family, as many as 293 students, while the rest were students who lived in boarding house/dormitory. Living in own house is very different compared to life in the boarding house/dormitory, starting from the existence of parental supervision of a child's behavior or attitude, environment, and needs of a child. If the adolescents stay at home, the facilities and responsibilities are still under

**Table I: Characteristics of respondents (n=302)**

Variables	Frequency	Percentage (%)
<b>Age</b>		
16 Year	124 People	41.1
17 Year	161 People	53.3
18 Year	17 People	5.6
<b>Residence</b>		
Home	293 People	97
Boarding house/dormitory	9 People	3
<b>Gender</b>		
Man	121 People	40.1
Woman	181 People	59.9

their guardians or parents, but if they live in a boarding house/dormitory, it can make them more independent to take care of their residence on their own.

Table I shows the results of the frequency distribution of respondents based on gender, as many as 181 students classified as a woman and as many as 121 students classified as a man. Women have a higher curiosity than men in adolescent reproductive health. This is because women will experience pregnancy and give birth to a child, so that there will always be feelings to prevent illness and the incidence of maternal and child mortality (13). Women are more interested in getting adolescent reproductive health education than men (14). Effective health education intervention can teach adolescents, especially women to always maintain health and stay away from adolescent reproductive health problems (15).

### The influence of relative advantage, compatibility, and complexity

Table II showed the results showed that there were significant differences in the degree of conformity with the application ( $p$ -value = 0.026) while compatibility ( $p$ -value = 0.304) and complexity ( $p$ -value = 0.312) had no significant effect on the decision.

## DISCUSSION

The results show that there is an influence between relative advantage and the decision to use the "Remaja Sehat" application. This study is similar to a previous study that showed a significant result on the relative advantage with the decision to adopt the cultivation of organic vegetables (16). Therefore, if the innovation user can feel suitability, high satisfaction and benefit, both

for themselves or the environment, it will accelerate and influence the decision to adopt the innovation. Another study showed that there is a negative influence on the existence of relative advantage with a negative rejection attitude, so it can be interpreted that the more innovation has an advantage, the less attitude toward rejection (17). This advantage is due to the rumored application of this teenager using modern technology methods. The existence of modern technology can bring a change in adolescent maturity due to the influence of bad and good to the teenager (18). The adoption of commercial innovations in the former Central and Eastern European markets shows that the relative benefits and complexity have a strong influence on the adoption of internet mobile banking (19).

The "Remaja Sehat" application displays a variety of information, ranging from drugs, HIV/AIDS, and sexuality. The information is supported by educational games that provide information to increase knowledge regarding adolescent reproductive health. This is supported by a previous study which stated there was an increase in student knowledge regarding adolescent reproductive health by using snakes and ladders educational media (20). The game method in education makes students make decisions and combine knowledge to complete the game (21). A previous study also mentioned that there were significant differences in knowledge before and after the educational media provided in the form of games (22). Other research shows that learning using game media is very feasible in learning ecosystem biology and the use of this game method can be effective in each group of students (23).

This study showed that there is no influence of compatibility on the decision to use the "Remaja Sehat" application. The decision to use "the application in this study did not influence the level of appropriateness of the application. The level of compatibility is the level of suitability of an innovation that can be measured from the value and experience of individuals (24). Innovation can be accepted if there's consistency or continuity based on existing values, experience and appropriate needs. Supporting previous research that stated there is no significant influence of compatibility on internet-based ICT adoption. Other research also shows negative results in compatibility with the attitudes of history lecturers in the use of ICT (25). In contrast to the other research, the influence of the level of suitability or compatibility is significant on the decision to adopt an innovation and the compatibility variable is relatively greater than the relative advantage variable (16)

**Table II: The Influence between Relative Advantage, Compatibility, and Complexity with the Results of the Use of "Aplikasi Remaja Sehat"**

Dependent Variabel (x)	Independent Variabel (y)	B	Significant	$\alpha$	Result
Relative Advantage	Decision	-0.552	0.026	0.05	There is influence
Compatibility	Decision		0.304	0.05	There is no influence
Complexity	Decision		0.312	0.05	There is no influence



Complexity is the level of difficulty of innovation to be understood or used. The more complex and difficult it is to understand the use of innovation, it can influence the decision-making to adopt and use it (26). This study showed that there is no significant influence between complexity and the decision to use the “Remaja Sehat” application. This is caused by interest to use the “Remaja Sehat” application is only limited to the games that have been provided. The easier it is to understand the application, the higher the usage to make decisions. Other studies show that complexity is not significant for the use of the application, namely the use of Social Networking Sites among University Students (27). Other research on the implementation of success of enterprise resource planning systems shows that the results of negative or insignificant complexity of Enterprise resource planning (28). The same study has a negative complexity about Indians and Thai customers’ intention to adopt Internet banking (29). Same as previous study complexity does not influence the adoption of mobile banking or not because it is felt that young people now understand more about innovation and more advanced technology (30). Research on the implementation of success of enterprise resource planning systems shows that the results of negative or insignificant complexity of Enterprise resource planning This research are not in line with research conducted in Cianjur on the variable of complexity, which found a negative influence to adopt a culture organically. A previous study argued that is because farmers felt the difficulty and complexity in the procedure of the innovation program (31). The complexity or easiness of innovation also differs in each individual, because not all individuals feel the easiness or complexity in the same way. If an individual can understand something, the results will be different when compared to other individuals (26). Therefore, an innovation has to be matched with the easiness and by the target user of the innovation.

## CONCLUSION

The “Remaja Sehat” application is an effective media as a health promotion media that is useful in increasing knowledge regarding reproductive health in adolescents. The Relative Advantage variable can influence decision-making in the use of the “Remaja Sehat” application and the compatibility and complexity variables do not influence the decision to use the application. As such, the “Remaja Sehat” application can be used as a health promotion media.

## ACKNOWLEDGEMENT

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