

THE RELATIONSHIP BETWEEN THE UTILIZATION OF E-HEALTH-BASED REPRODUCTIVE HEALTH APPLICATIONS AND ADOLESCENTS' ATTITUDES TOWARD PERSONAL HYGIENE DURING MENSTRUATION IN EAST JAKARTA REGIONAL HIGH SCHOOLS

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ABSTRACT

Background: Adolescent reproductive health, especially related to personal hygiene during menstruation, is an important issue that often receives less attention. The lack of a good attitude about personal hygiene during menstruation can have a negative impact on the health of adolescent girls. The utilization of e-health-based reproductive health applications is expected to improve adolescents' attitudes towards personal hygiene. **Objective:** The purpose of this study was to determine the relationship between the utilization of e-health-based reproductive health applications and adolescents' attitudes towards personal hygiene during menstruation in East Jakarta Regional High Schools. **Methods:** This study is a quantitative study with a cross-sectional design. A sample of 172 respondents was taken by purposive sampling method. Analysis of the relationship between variables was carried out using the chi-square test. **Results:** The results showed that there was a significant relationship between the utilization of e-health-based reproductive health applications and the attitude (p value = 0.026) of adolescents in personal hygiene during menstruation. **Conclusion:** There is a significant relationship between the utilization of e-health-based reproductive health applications and adolescents' attitudes in maintaining personal hygiene during menstruation in East Jakarta Regional High Schools.

Keywords: Adolescents; Application utilization; attitudes; personal hygiene; reproductive health menstruation.

ABSTRAK

Latar belakang: Kesehatan reproduksi remaja, khususnya terkait kebersihan diri saat menstruasi, merupakan isu penting yang sering kali kurang mendapat perhatian. Kurangnya sikap yang baik mengenai kebersihan diri saat menstruasi dapat berdampak negatif terhadap kesehatan remaja perempuan. Pemanfaatan aplikasi kesehatan reproduksi berbasis e-health diharapkan dapat meningkatkan sikap remaja terhadap kebersihan diri. Tujuan: Tujuan dari penelitian ini adalah untuk mengetahui hubungan antara pemanfaatan aplikasi kesehatan reproduksi berbasis e-health dengan sikap remaja terhadap personal hygiene saat menstruasi di SMA Negeri Jakarta Timur. Metode: Penelitian ini merupakan penelitian kuantitatif dengan desain cross-sectional. Sampel sebanyak 172 responden diambil dengan metode purposive sampling. Analisis hubungan antar variabel dilakukan dengan menggunakan uji chi-square. Hasil: Hasil penelitian menunjukkan bahwa terdapat hubungan yang signifikan antara pemanfaatan aplikasi kesehatan reproduksi berbasis e-health dengan sikap (p value = 0,026) remaja dalam personal hygiene saat menstruasi. Kesimpulan: Terdapat hubungan yang signifikan antara pemanfaatan aplikasi kesehatan reproduksi berbasis e-health dengan sikap remaja dalam menjaga personal hygiene saat menstruasi di SMA Negeri Jakarta Timur.

Kata kunci: Remaja; Pemanfaatan aplikasi; sikap; kebersihan diri; kesehatan reproduksi; menstruasi.

INTRODUCTION

Adolescence is a transitional period in which rapid physical, mental, and psychological growth and development occurs, but they also experience bodily changes, including the active reproductive system (Jahja, 2011). In adolescent girls there are significant changes in the maturity of their reproductive organs called menstruation (menarche) (Anjan & Susanti, 2019). Menstruation is a normal change with the process of discharge of blood from the uterus that flows out through the vagina lasting approximately 3-7 days, with a cycle of approximately 28 days (Villasari, 2021). During menstruation, the blood vessels in the uterus are susceptible to infection, so knowledge is needed to maintain personal hygiene during menstruation. Menstrual hygiene is female hygiene during menstruation with the aim of preventing disease and improving well-being (Sinaga et al., 2017). Limited menstrual hygiene knowledge and attitudes in adolescent girls can lead to risky behaviors that increase reproductive and urinary tract infections, cervical cancer, school dropout, poor activity, and overall poor quality of life (Belayneh & Mekuriaw, 2019). The World Health Organization (WHO) states that the problem of adolescent reproductive health is increasing. According to the Regional Office for South East Asia 2018, the average knowledge of sexual and reproductive health in Indonesia is less than 40%. Of the 10 main risk factors for morbidity or mortality in adolescents, personal hygiene ranks 3rd and reproductive health ranks 8th (World Health Organization, 2018). Data from the 2017 Indonesian Health Demographic Survey shows that the personal hygiene behavior of adolescent girls during menstruation is still weak, about 63.9% (Syahda & Elmayasari, 2020). Furthermore, research from the Indonesian Ministry of Health proves that around 5.2 million adolescent girls in 17 provinces experience reproductive complaints due to poor personal hygiene during menstruation (Sulaikha, 2018). The number of pruritus cases in Central Java in 2017 such as cervicitis and candidiasis occurred in adolescent girls as much as 79.4%, caused by 82% of fungi that breed in moist areas of the genitalia during menstruation (Kusumastuti et al., 2021). Seeing the various negative impacts when personal hygiene is poor during menstruation, adolescent girls really need to be given sufficient information related to menstrual hygiene. Dissemination of health information to adolescents can be done through internet based health applications. Internet based health applications are more familiarly known as e-health applications. E-health is an application or information system and technology related to the healthcare industry. It is intended to improve health services through fast internet access, efficiency, and effectiveness in terms of time and

cost. Another advantage of native applications compared to other e-health interventions is the possibility of using them in the absence of network coverage. In addition to common text messaging interventions, various interactive features can be implemented in apps to positively influence people's health. Digital health services, such as mobile or computer-based consultations with healthcare providers, offer a new way of healthcare delivery with the potential to improve access to services as well as health outcomes. According to a previous study conducted by Ahmed (2020) showed that the SMS tool of the m-Health approach was an easy and effective way to improve reproduction health (RH) knowledge and attitudes for adolescent girls. The SMS was well received by the girls.

METHOD

This study used a descriptive quantitative method with a cross sectional design. In this study, researchers look at the relationship between the utilization of e-health based reproductive health applications and adolescents' attitudes of personal hygiene during menstruation. The population in this study were all the adolescent girls at SMA Muhammadiyah four East Jakarta. The sample in this study used a purposive sampling technique that met the inclusion criteria so that a sample of 172 girls who used the e-health-based reproductive health application was obtained. The instrument used is a questionnaire that has been tested for validity and reliability contained of 5 questions about utilization of e-health which identify of information quality and utilization with score rang 0 to 5; 4 variety of e-health application; and 25 question of personal hygiene attitude during menstruation used indicator of reception, respond, respect, responsible, using likert scale with 5 option: strongly agree =5, agree = 4, doubtful = 3, disagree = 2, strongly disagree = 1, with score range 25 to 125. The utilization of e-health and personal hygiene attitude variabels categorized based on cutpoints determined from the average value

Data analysis of this study used univariate analysis to determine the frequency distribution of characteristic of adolescent girls; and bivariate analysis used chi square test to determine the relationship between utilization of e-health and attitude about personal hygiene during menstruation. This research was conducted in Maret – Mey 2024 at SMA Muhammadiyah 4 Jakarta Timur.

RESULTS AND DISCUSSION

1. Overview of Adolescent Characteristics

Table 1. Respondent Data Based On Age And Class

Category	N	Persentase (%)
Age		
15 years old	23	13,4
16 years old	55	32,0
17 years	57	33,1
> 17 years	37	21,5
Class		
10	25	14,5
11	65	37,8
12	82	47,7
Total	172	100

Based on the age of respondents (Table 1), who use the e-health application, the majority are in the mid-teen age range, namely 16 and 17 years. It was recorded that 32.0% respondents were 16 years old and 33.1% respondents were 17 years old. This shows that the 16-17 age group dominates the research population with a combined percentage of 65.1%. This age range is often associated with the mid-adolescent phase, where students are in the process of transitioning to adulthood. The >17 years and 15 years age groups had a smaller number of respondents, 21.5% respondents and 13.4% respondents respectively. The >17 year olds may include students who may repeat a grade or enter school later than the appropriate age, while the 15 year olds may include students who enter school early or who follow an accelerated pathway.

Based on the grade level of respondents who used the E- health application, the majority came from grade 12, as many as 82 people (47.7%). This was followed by respondents from grade 11 with a total of 65 people (37.8%) and grade 10 with 25 people (14.5%). The dominance of grade 12 indicates that this study has a strong representation of students who are in the final stages of senior secondary education. The high number of respondents from grade 12 may reflect their readiness to face final exams and preparation for the next level of education, such as college or the world of work. Students in grade 12 often have a heavier academic load and higher pressure to achieve good grades to fulfill graduation and college admission requirements. Grade 11, at 37.8%, also showed significant participation, with students at this level typically starting to plan for their academic and career futures. The lower participation of grade 10 (14.5%) may reflect

their initial adaptation to high school, where they are still trying to adjust to the new environment and learning system.

2. Overview of E-Health Based Reproductive Health Application Utilization

Table 2. Respondent Data Based On The Number Of Applications

application type	N	Persentase (%)
Applications		
Flo App	53	30,4
Menstrual Calendar	77	44,8
AppMeet You App	25	14,5
Clover App	17	9,9
Total	172	100

Based on table 2., the analysis of the utilization of various menstrual tracker applications shows that the Menstrual Calendar Application is the most widely used with 44.8% of users. This indicates that almost half of the sample prefers this application to manage their menstrual cycle and also their personal hygiene attitude during menstruation.

Table 3. Respondent Data Based on Length of Utilization

Length of Utilization	N	Persentase (%)
Duration of Use Normal (30 minutes)	84	48,8
Medium (30-60 minutes)	55	32,0
Long (1-2 hours)	33	19,2
Total	172	100

Based on table 3 the majority of users spent a relatively short time on the application. A total of 48.8% of adolescent girls used the app for less than 30 minutes each time they opened it, which can be categorized as "Normal" utilization. This suggests that many users may only need a short period of time to record information about personal hygiene or check their menstrual cycle. Meanwhile, 32.0% of adolescent girls spent between 30 to 60 minutes, indicating that there is a group that takes longer to use the platform. A group that takes longer to interact with the app which can be categorized as "moderate" utilization, perhaps to take advantage of additional features or analyze their data in more depth, and only 19.2% of adolescent girls used the app between 1 and 2 hours, which can be categorized as "Long" utilization.

Table 4. Distribution Of Respondents Based On Application Utilization

E-Health Based Health Applications			
No	Variabel	N	%
Utilization of e-health Based Health Applications			
1	Poor	69	40,1
2	Good	103	59,9
	Total	172	100

Based on table 4. regarding the analysis of the utilization of e- health-based health applications, it can be seen that the majority of users assess the utilization of this application in the "Good" category. A total of 59.9% of the respondents gave a positive assessment, indicating that more than half of the users felt that the e-health application provided adequate benefits and met their health needs. In contrast, 40.1% of the respondents considered the utilization of this application to be "Poor".

3. Overview of Adolescent Personal Hygiene Attitudes

Table 5. Distribution of Adolescents' Attitudes on Menstrual Personal Hygiene.

No	Variable	N	%
Adolescents' Attitude in Personal Hygiene during menstruation.			
1	Poor	42	24,4
2	Good	130	75,6
	Total	172	100

Based on table 5., regarding the analysis of adolescents' attitude in personal hygiene during menstruation, it can be seen that the majority of respondents have a good attitude in maintaining personal hygiene during menstruation. A total of 75.6% of the respondents (130 out of 172) showed a good attitude, illustrating that most adolescents understood and implemented adequate personal hygiene practices during their menstrual period. In contrast, 24.4% of the respondents (42 out of 172) had a poor attitude, indicating that there was a small proportion of adolescents who still needed to improve their understanding and practice of personal hygiene during menstruation.

4. Overview of Adolescent Personal Hygiene Attitudes

Based on age, the attitude of adolescents in personal hygiene during menstruation, it can be seen that the majority of respondents have a good attitude in maintaining personal hygiene during menstruation. As many as 75.6% of respondents (130 out of 172) who were dominated by adolescents aged 16 to >17 years showed a good attitude, illustrating that most adolescents understand and can implement adequate personal hygiene practices during menstruation. In contrast, 24.4% of the respondents (42 out of 172) who were dominated by adolescents aged 15 years had unfavorable attitudes, indicating that there was a small proportion of adolescents who still needed to improve their understanding and practices related to personal hygiene during menstruation.

Based on grade level, the attitude of adolescents in personal hygiene during menstruation, it can be seen that the majority of respondents have a good attitude in maintaining personal hygiene during menstruation. As many as 75.6% of respondents (130 out of 172), who were dominated by adolescents in grades 11 and 12, showed a good attitude, illustrating that most adolescents understood and could implement adequate personal hygiene practices during menstruation. On the other hand, 24.4% of the respondents (42 out of 172) who were dominated by adolescents in grade 10 had a poor attitude, indicating that there was a small proportion of adolescents who still needed to improve their understanding and practice related to personal hygiene during menstruation.

5. Relationship between Utilization of E-Health-Based Reproductive Health Application with Adolescent Attitude in Personal Hygiene during Menstruation

Tabel 6. Distribution of Adolescents' Attitudes on Menstrual Personal Hygiene.

No	Variable	Attitudes on Menstrual Personal Hygiene				Total N	P Value	OR (95% CI)
		Poor		Good				
		N	%	N	%			
Adolescents' Attitude in Personal Hygiene during menstruation								

1	Poor	23	33.3	46	66.7	69	100	0.026	2.11
2	Good	19	18.4	84	81.6	103	100		(1.091-4.478)
	Total	42	24.4	130	75.6	172	100		

Based on the results of the Chi-Square test in table 6, there is a relationship between the utilization of e-health-based reproductive health applications and adolescents' attitudes in personal hygiene during menstruation in high schools in East Jakarta. The p value = 0.026, indicating a relationship with a p-value smaller than 0.05. This proves that the utilization of e-health-based reproductive health applications has a relationship with adolescents' attitudes towards personal hygiene during menstruation, so it can be concluded that the utilization of applications is able to improve adolescents' personal hygiene attitudes during menstruation. The results of this study have an Odds Ratio value of 2.211 which can be concluded that poor utilization of e-health-based reproductive health applications has a relationship in increasing the likelihood of adolescents having a poor attitude towards personal hygiene during menstruation. Adolescents who use this application are 2.211 times more likely to have a good attitude than those who do not use it. Conversely, adolescents with good attitudes towards personal hygiene were more likely to use the app. These results confirm the importance of e-health-based reproductive health applications in supporting positive personal hygiene attitudes among adolescents.

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CONCLUSION

This study found that there is a relationship between the utilization of e-health-based reproductive health applications and personal hygiene attitudes of adolescents during menstruation in high schools in East Jakarta. Adolescents aged 16 to >17 years in grades 11 and 12 can utilize e-health-based reproductive health applications well and tend to have better personal hygiene attitudes during menstruation compared to adolescents aged 15 years in grade 10 with less utilization of e-health-based reproductive health applications. This is reinforced by adolescents who utilize e-health-based reproductive health applications well who have a 2.211 times greater chance of having a good personal hygiene attitude during menstruation compared to those who do not utilize e-health-based reproductive health applications.

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