

HEALTH INFORMATION THROUGH ELECTRONIC MEDIA AND EXTERNAL REPRODUCTIVE ORGAN HYGIENE IN ADOLESCENT FEMALES

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ABSTRACT

This study aimed to determine the relationship between health information obtained through electronic media and personal hygiene of external reproductive organs in adolescent girls at SMK S 16 Pharmacy Bengkulu. The research method used was an observational analytical design with a cross-sectional approach. The results showed that most respondents had limited access to health information through electronic media and demonstrated poor personal hygiene practices of external reproductive organs. Bivariate analysis revealed a significant relationship between health information obtained through electronic media and personal hygiene of external reproductive organs. Adolescent girls who received inadequate health information through electronic media were more likely to have poor personal hygiene practices compared to those who received adequate information. In conclusion, there is a significant relationship between health information obtained through electronic media and personal hygiene of external reproductive organs in adolescent girls.

Keywords: Health Information, Electronic Media, External Reproductive Organs, Adolescents

INTRODUCTION

Reproductive health received special global attention at the 1994 International Conference on Population and Development (ICPD) in Cairo, Egypt. A paradigm shift in population and development management was agreed upon, shifting from a population control and fertility reduction approach to one focused on reproductive health and the fulfillment of reproductive rights. Indonesia, one of the countries that agreed to this new paradigm, has undertaken various efforts to ensure optimal implementation of reproductive health programs (Rahmawati, 2010).

Social media exposure is associated with higher reproductive health knowledge; in a large Indian survey, social media exposure increased the odds of knowledge about sexual intercourse/pregnancy, contraception, and HIV (Saha et al., 2022). Direct evidence that lack of access to electronic media increases the risk of poor reproductive hygiene practices exists, but the evidence base is narrower and more often takes the form of cross-sectional studies rather than randomized trials (Lestari et al., 2025).

Cross-country studies show that better knowledge is consistently associated with better menstrual hygiene practices (Bulto, 2021; Kpodo et al., 2022; M et al., 2023). The association between knowledge and practice is also quite large across several studies. In Ethiopia, good menstrual knowledge nearly doubled the odds of adequate MHM practice (Bulto, 2021). In Ghana, good knowledge more than quadrupled the

odds of good hygiene practice (Kpodo et al., 2022). In Gujarat, good knowledge was a strong predictor of good practice with an AOR of 8.21 (M et al., 2023). These findings align with a more direct Indonesian study on personal hygiene behavior during menstruation. The relationship between knowledge and personal hygiene behavior was found to be significant among junior high school students (Rahmawati & Laila, 2025). Education about external genital hygiene also significantly improved knowledge and attitudes (Kusbaryanto & Chapsoh, 2024).

Adolescents who are knowledgeable about reproductive health are more likely to pay attention to their own reproductive health, so they will engage in hygienic behaviors during menstruation by maintaining personal hygiene. This is because cleanliness affects health, comfort, safety, and well-being, resulting in positive benefits, including avoiding Reproductive Tract Infections (RTIs) and maintaining good appearance and personal hygiene (Kusmiran, 2012). In daily life, cleanliness is crucial and must be considered. A person's hygiene practices are influenced by personal, social, and cultural factors (Isro'in, 2012).

A survey conducted at SMK S 16 Pharmacy showed that the majority of female students were interested in seeking various health-related information, with 85% seeking information through electronic media (the internet and television) and 15% through print media (books, magazines, and newspapers). Of the 20 respondents, 70% reported not wearing cotton underwear, 95% frequently wearing tight jeans, and 84% not flushing the toilet before use. In the past six months, female students had received only general health information, indicating that they had not received accurate information specifically about adolescent reproductive health.

RESEARCH METHOD

This study was observational with a cross-sectional approach, which aims to study the relationship between the dependent and independent variables, with a single measurement at the same time. This study was conducted at SMK S 16 Farmasi Bengkulu from May to June 2013, and data collection took place in May 2013.

The population in this study was all 10th-grade female students at SMK S 16 Farmasi Bengkulu. The population selected was only 10th-grade female students because, on average, they are 14-16 years old, so they are in adolescence, characterized by high curiosity and developing abstract thinking skills. Female reproductive organs are also developing. Furthermore, 10th-grade female students at SMK S 16 Farmasi Bengkulu receive more theoretical lessons compared to 2nd- and 3rd-grade students, who receive more practical lessons.

RESULTS

Description of the Research Location

The 16 Pharmacy Private Vocational High School in Bengkulu is located on Jalan Indragiri Gang 3, Serangkai, Padang Harapan, Bengkulu City 38225. It was founded by the Bhakti Nusa Foundation in 1989, confirmed by notarial deed No. 42 of Ichan Teja Buana, dated March 16, 1989. SMK S 16 Pharmacy Bengkulu is a health-based school designed to meet the need for Pharmacist Assistants, both in the government and private sectors. At that time, Bengkulu Province had to bring in pharmacist assistants from other provinces.

Data Description

Respondent Characteristics

Characteristics by Age

The research results obtained a detailed frequency distribution of 53 respondents by age, as shown in the table below.

Table 1
Frequency Distribution of Respondents' Age Groups

No	Age	Amount	Presentase
1.	14 Years	4	7,5%
2.	15 Years	19	35.5%
3.	16 Years	30	56,6 %
	Total	53	100%

Based on the data above, it can be seen that the majority (56.6%) of respondents are 16 years old.

Respondent Characteristics Based on Health Information Media

The results of the study show the frequency distribution of respondents according to the health information media they obtained, other than electronic media, as shown in the table below.

Table.2
Frequency Distribution of Health Information Media for Respondents

Health information media	n = 53	Presentase (%)
Print media		
Not getting enough	19	35,8%%
Getting enough	34	64.2%
Health workers		
Not getting enough	36	67.9%
Getting enough	17	32.1%
Teachers		
Not getting enough	24	45.3%
Getting enough	29	54.7%
Families		
Not getting enough	22	45.3%
Getting enough	31	58.5%

Based on the above data, it can be seen that the majority (64.2%) of health information sources respondents obtained, other than electronic media, were print media.

Data Analysis

Univariate Analysis

The results of this analysis demonstrate the frequency distribution of health information received through electronic media (independent variable) and personal hygiene of external reproductive organs (dependent variable), as shown in the table below.

Table.3
Frequency Distribution of Health Information Received Through Electronic Media and Personal Hygiene of External Reproductive Organs Among Female Adolescents

Variabel	n = 53	Presentase (%)
Health information through electronic media		
Not getting enough	28	52.8%
Getting enough	25	47.2%
Personal hygiene of external reproductive organs		
Not doing enough	34	64.2%
Doing	19	35.8%

Based on the table above, it can be explained that the majority (52.8%) of respondents did not receive enough health information through electronic media such as television and the internet regarding proper care of their external reproductive organs, and respondents did not practice proper personal hygiene (64.2%).

Bivariate Analysis Results

This analysis was conducted to examine the relationship between health information through electronic media and personal hygiene of external reproductive organs among adolescent girls at SMK S 16 Farmasi Bengkulu in 2013. The analysis is presented as follows:

Table. 4
Relationship between Health Information Through Electronic Media and Personal Hygiene of External Reproductive Organs

Informasi Kesehatan Melalui Media Elektronik	Personal <i>Hygiene</i> Alat reproduksi Eksternal				Total		OR (95%)	P value
	Kurang Melakukan		Melakukan		N	%		
	N	%	N	%				
Kurang mendapatkan	23	82,1%	5	17,9%	28	100%	5,855 (1,680-20,405)	0,009
Cukup mendapatkan	11	44 %	14	56%	25	100%		
Jumlah	34	64,2%	19	35,8%	53	100%		

The analysis of the relationship between information received through electronic media and personal hygiene of external reproductive organs in grade 10 female students at SMK S 16 Farmasi Bengkulu revealed that 28 respondents received insufficient health information through electronic media. 23 (82.1%) respondents did not practice personal hygiene of external reproductive organs, and 5 (17.9%) respondents practiced personal hygiene of external reproductive organs. The statistical test yielded a p-value of 0.009, concluding that there is a relationship between health information received through electronic media and personal hygiene of external reproductive organs in female adolescents at SMK S 16 Farmasi Bengkulu in 2013. The analysis also yielded an OR of 5.855, indicating that adolescents who received insufficient health information through electronic media were 5.855 times more likely to practice poor personal

hygiene of external reproductive organs compared to adolescents who received sufficient health information through electronic media.

DISCUSSION

The statistical test results yielded a p-value of 0.009, concluding that there is a relationship between health information via electronic media, such as television and the internet, and personal hygiene of external reproductive organs. The analysis also yielded an OR of 5.855, meaning that adolescents who lack access to health information via electronic media are 5.855 times more likely to practice poor personal hygiene of external reproductive organs.

Access to health information through digital, social, and school media tends to be associated with better reproductive health and better knowledge of menstrual and genital hygiene practices. However, direct evidence for television/internet on external reproductive hygiene remains more limited than evidence for indirect pathways through health knowledge, attitudes, and education. Digital media exposure improves menstrual hygiene knowledge and attitudes among adolescent girls in several intervention studies, including videos, digital booklets, TikTok, and animated media (Fuadah et al., 2025; Haninuna et al., 2023; Triamanda et al., 2022).

Social media exposure is associated with higher reproductive health knowledge; in a large Indian survey, social media exposure increased the odds of knowledge about sexual intercourse/pregnancy, contraception, and HIV (Saha et al., 2022). Direct evidence that lack of access to electronic media increases the risk of poor reproductive hygiene practices exists, but the evidence base is narrower and more often takes the form of cross-sectional studies rather than randomized trials (Lestari et al., 2025).

Cross-country studies show that better knowledge is consistently associated with better menstrual hygiene practices (Bulto, 2021; Kpodo et al., 2022; M et al., 2023). The association between knowledge and practice is also quite large across several studies. In Ethiopia, good menstrual knowledge nearly doubled the odds of adequate MHM practice (Bulto, 2021). In Ghana, good knowledge more than quadrupled the odds of good hygiene practice (Kpodo et al., 2022). In Gujarat, good knowledge was a strong predictor of good practice with an AOR of 8.21 (M et al., 2023). These findings align with a more direct Indonesian study on personal hygiene behavior during menstruation. The relationship between knowledge and personal hygiene behavior was found to be significant among junior high school students (Rahmawati & Laila, 2025). Education about external genital hygiene also significantly improved knowledge and attitudes (Kusbaryanto & Chapsoh, 2024).

Intervention evidence shows that media is not only correlated, but often effective in improving behavioral determinants. A digital media intervention in Bandung increased menstrual hygiene knowledge with a Difference-in-Differences effect of 12.5 points and $p < 0.001$ (Fuadah et al., 2025). Videos and leaflets both improved knowledge and attitudes in Palangka Raya (Herlinadiyaningsih & Arisani, 2022).

Audiovisual media also improved personal hygiene knowledge during menstruation in junior high school students in Jember (Peni et al., 2023). Videos and booklets improved reproductive health knowledge in adolescents in Karawang (Yuliwati & Afiah, 2022). TikTok and leaflets both improved knowledge and attitudes, with slightly greater increases in the TikTok group (Haninuna et al., 2023).

The evidence also extends to other formats. Comics improved menstrual hygiene management knowledge compared to the control group (Nadila et al., 2025). E-flashcards improved genital hygiene behavior during menstruation (Sabrina et al., 2025). 3D posters, booklets, snake-and-ladder, and crossword puzzles also improved knowledge or perception of menstrual hygiene in Mustikawati et al., 2025; Mustikarani, 2021; Yati & Andriyani, 2025).

CONCLUSION

Adolescent girls at SMK S 16 Pharmacy Bengkulu are categorized as having received little (52.8%) health information through electronic media such as television and the internet.

Adolescent girls at SMK S 16 Pharmacy Bengkulu are categorized as having practiced little (64.2%) personal hygiene of their external reproductive organs.

The statistical test results obtained $p=0.009$, thus concluding that there is a relationship between health information through electronic media and personal hygiene of their external reproductive organs.

SUGGESTIONS

For Institutions

SMK S16 Pharmacy Bengkulu can collaborate with the National Population and Family Planning Board (BKKBN) to provide outreach and education regarding reproductive health. To increase adolescent knowledge and understanding, particularly regarding personal hygiene of external reproductive organs, the school has developed an extracurricular activity on Adolescent Reproductive Health (ARH).

For Researchers

Other researchers interested in conducting research on personal hygiene should also consider incorporating other variables.

REFERENCE

- Bulto, G. A. (2021). Knowledge on Menstruation and Practice of Menstrual Hygiene Management Among School Adolescent Girls in Central Ethiopia: A Cross-Sectional Study. *Risk Management and Healthcare Policy*, 14, 911 - 923. <https://doi.org/10.2147/rmhp.s296670>
- Fuadah, F., Yogisutanti, G., & Saragih, B. D. (2025). The Effectiveness of Digital Media in Improving Menstrual Hygiene Knowledge Among Adolescent Girls: A Study in Junior High Schools in Bandung Regency. *BMC Public Health*, 26. <https://doi.org/10.1186/s12889-025-24967-4>
- Haninuna, G. Y., Nayoan, C., & Bunga, E. H. Z. (2023). Effect of Tik-Tok and Leaflet Media in Increasing Adolescents' Knowledge and Attitude About Reproductive Health. *Journal of Public Health for Tropical and Coastal Region*. <https://doi.org/10.14710/jphtcr.v6i1.17709>
- Herlinadiyaningsih, H., & Arisani, G. (2022). Efektivitas Media Video dan Leaflet terhadap Tingkat Pengetahuan dan Sikap tentang Menstrual Hygiene di MA Darul Ulum Palangka Raya. *Jurnal Surya Medika*. <https://doi.org/10.33084/jsm.v8i2.3886>

- Kpodo, L., Aberese-Ako, M., Axame, W., Adjuik, M., & Gyapong, M. (2022). Socio-Cultural Factors Associated with Knowledge, Attitudes and Menstrual Hygiene Practices Among Junior High School Adolescent Girls in the Kpando District of Ghana: A Mixed Method Study. *PLoS One*, *17*. <https://doi.org/10.1371/journal.pone.0275583>
- Kusbaryanto, , & Chapsoh, (2024). The Effectiveness of Education with Picture Media to Increase Students' Knowledge and Attitudes about Maintaining the Cleanliness of the External Genitalia at Al-Azhar26 Junior High School Yogyakarta. *International Journal of Human and Health Sciences (IJHHS)*. <https://doi.org/10.31344/ijhhs.v8i2.637>
- Lestari, D. I., Ningrum, E. W., & Safitri, M. (2025). Relationship between Social Media Access and Adolescent Reproductive Health Behavior in SMK Banyumas Regency. *Professional Health Journal*. <https://doi.org/10.54832/phj.v7i2.1151>
- M., Y., Trivedi, N. S., Damor, R., Patel, M., Ladani, H., Ramachandran, A., Vamja, R., & Surati, B. (2023). Assessment of Knowledge, Attitudes, and Practices Regarding Menstrual Hygiene Management Among Adolescent Schoolgirls (10–19 Years) in the Saurashtra Region, Gujarat. *Cureus*, *15*. <https://doi.org/10.7759/cureus.50950>
- Mustikarani, I. (2021). The Effect of Health Education with "MAGIS (Menstrual Hygiene Sehat)" Booklet to the Menstrual Hygiene Perception of Teenage Girls at SMP Muhammadiyah 1 Surakarta. 53-58. <https://doi.org/10.37341/jkkt.v0i0.245>
- Mustikawati, R., Rachmawati, W. C., Redjeki, E. S., & Ulfah, N. H. (2025). Effectiveness of 3D Poster in Improving Menstrual Hygiene Knowledge Among Adolescent Girls: A Quasi-Experimental Study. *Public Health and Occupational Safety Journal*. <https://doi.org/10.56003/phosj.v1i1.531>
- Nadila, R., Tampubolon, M. M., & Utami, S. (2025). Efektifitas Media Komik terhadap Pengetahuan Manajemen Kebersihan Menstruasi. *Jurnal Ilmu dan Teknologi Kesehatan Terpadu*. <https://doi.org/10.53579/jitkt.v4i2.219>
- Peni, T., Triwibowo, H., & Aprilia, S. (2023). The Effect of Audio Visual Health Education Method on Increasing Adolescent Girls' Knowledge About Personal Hygiene During Menstruation. *Journal of Scientific Research, Education, and Technology (JSRET)*. <https://doi.org/10.58526/jsret.v2i2.160>
- Rahmawati, L., & Laili, A. N. (2025). Hubungan Pengetahuan dengan Perilaku Personal Hygiene Siswa saat Menstruasi. *Assyifa : Jurnal Ilmu Kesehatan*. <https://doi.org/10.62085/ajk.v3i1.131>
- Sabrina, M., Wardani, S. W., Widayani, W., & Ferina, F. (2025). Pengaruh E-Flashcard terhadap Perilaku Remaja Putri dalam Hygiene Genitalia saat Menstruasi. *Griya Widya: Journal of Sexual and Reproductive Health*. <https://doi.org/10.53088/griyawidya.v4i2.2040>
- Saha, R., Paul, P., Yaya, S., & Banke-Thomas, A. (2022). Association between Exposure to Social Media and Knowledge of Sexual and Reproductive Health Among Adolescent Girls: Evidence from the UDAYA survey in Bihar and Uttar Pradesh, India. *Reproductive Health*, *19*. <https://doi.org/10.1186/s12978-022-01487-7>
- Triamanda, R. Z., Salawati, T., & Larasaty, N. D. (2022). Pengembangan Konten Video Animasi Motion Graphic sebagai Media Promosi Kesehatan Personal Hygiene Menstruasi bagi Remaja Putri. *Jurnal Cakrawala Promkes*. <https://doi.org/10.12928/promkes.v4i1.5466>

- Yati, D., & Andriyani, F. (2025). Pengaruh Media Edukasi Ular Tangga terhadap Pengetahuan Menstrual Hygiene pada Remaja Intellectual Disability di SLB Kabupaten Bantul. *Healthy Behavior Journal*. <https://doi.org/10.30989/hbj.v3i1.1287>
- Yuliwati, N., & Afiah, E. S. (2022). Monitoring Intervention of Video Media Extension and Booklet To Improving Adolescent Reproductive Health Knowledge. *International Journal of Health and Pharmaceutical (IJHP)*. <https://doi.org/10.51601/ijhp.v2i4.99>