



The Influence of Website-based Education on Adolescent Girls' Behavior Regarding Personal Hygiene During Menstruation

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ABSTRACT

This study examines the impact of website-based education on menstrual hygiene practices among teenage girls at SMAS Wachid Hasyim 1 in Surabaya. Out of 8,092 women in Surabaya who had cervical and breast exams in 2020, 5 (0.06%) were suspected of having cancer, and 21 (0.26%) had tumors or lumps. The research aimed to assess how a website could influence menstrual hygiene behavior in teenage girls.

The researches used a pretest-posttest design with a one-group sample of 50 respondents, selected randomly from a population of 86 teenage girls. The independent variable was the educational website, and the dependent variable was the girls' actions regarding personal hygiene during menstruation. Data were collected using a questionnaire between February and March 2024 and analyzed using the Wilcoxon Signed Rank Test, with $\alpha < 0.05$.

The results showed a significant improvement in knowledge, attitudes, and behaviors after the website intervention, with a p-value of 0.000, confirming the effectiveness of the website. In conclusion, the findings suggest that website-based education can positively impact teenage girls' knowledge, attitudes, and behaviors toward menstrual hygiene at SMAS Wachid Hasyim 1 in Surabaya.

Keywords: *Adolescent Girls, Personal Hygiene , Website,*

INTRODUCTION

Maintaining reproductive health includes taking care of intimate organs. It is essential to understand the importance of protecting reproductive health. Personal hygiene is crucial, especially in the vaginal area, to protect teenagers from sexually transmitted diseases. (Muharrina et al., 2023)

Indonesian women face a higher risk of RTIs compared to other Southeast Asian countries due to Indonesia's hot and humid climate. The main reasons include weakened immunity (about 10%), poor menstrual hygiene practices (30%), unsanitary environments, and improper use of sanitary pads. Regarding menstrual health, 50% of cases are related to these factors. In 2020, 8,092 women in Surabaya underwent breast and cervical examinations. Only 21 cases (0.26%) were found to have tumors or lumps, while 5 cases (0.06%) were suspected of having cancer. At Puskesmas Sememi, 25 out of 94 individuals tested positive in areas with cancer risk. Visual Acetic Acid Inspections (IVA) detected tumors or lumps in nine individuals, but no cancer was suspected. Meanwhile, 6 out of 51 individuals examined at Puskesmas Kecamatan Sidotopo Wetan had positive IVA results; one was suspected of having cancer (Surabaya City Health Office,

2020), but no tumors or lumps were found. Among 63 million Indonesian teenagers, the majority exhibit unhealthy behaviors. Poor menstrual hygiene practices can lead to Reproductive Tract Infections (RTIs). Abrori et al.'s research on 59 female students from SMAN 1 Simpang Hilir in Kayong Utara found that 47 girls (79.7%) had poor knowledge of vulva hygiene, and 29 girls (49.2%) cleaned their vaginas improperly.

Reproductive Tract Infections (RTIs), including candidiasis in 25%-50% of cases, bacterial vaginosis in 20%-40%, and trichomoniasis in 5%-15%, affect teenagers worldwide. Surabaya and Malang contribute 86.5% of total RTI cases in East Java, including candidiasis and cervicitis, mostly affecting women. The fungus *Candida albicans* is likely the main cause of these conditions. Potential consequences include pelvic inflammation, pregnancy complications, abortion, infertility, and even cancer and HIV/AIDS. (Milla., 2023)

Based on research findings, five female students reported learning about menstruation from their mothers, three from school, and two from friends. This was part of a preliminary study at SMAS Wachid Hasyim 1 Surabaya, which surveyed ten teenage girls about their

knowledge of menstruation and personal hygiene during menstruation. Schools only taught 30% of the female students. During menstruation, all the girls experienced itchy rashes around their vaginas. Three out of ten students had a basic understanding of menstrual hygiene, knowing how to properly care for their intimate areas, including correct use of sanitary pads, washing from front to back, and using clean water. However, seven girls still lacked adequate knowledge of personal hygiene during menstruation. Interview data showed that only 30% of the students demonstrated proper menstrual hygiene behavior.

Teen reproductive health issues in Indonesia require significant attention, as these problems mirror those seen in adolescents elsewhere. To maintain reproductive health and function, teenagers must be informed about their bodies, reproductive organs, and physical and psychological changes. Maintaining menstrual hygiene is crucial for preventing infections and ensuring reproductive organ health.

Each teenage girl has different levels of awareness, which affects their attitudes and behaviors in protecting their intimate areas during menstruation. Inadequate attitudes and behaviors are typical of those with low levels of understanding.

According to L. Green, this is significant because a person's actions are influenced by the level of knowledge they possess.

One factor influencing teenage girls' health and behavior is the onset of puberty. A lack of sufficient information leads to low knowledge, affecting their attitudes and behaviors. Therefore, creative and engaging health education is necessary.

By using smartphones, websites, and social media to access health-related materials, especially on reproductive health, teenagers can independently gain knowledge and insights through the internet as an information source. As a learning tool, teenagers can explore facts related to reproductive health, encouraging them to pay more attention to this area.

According to Mutiara Ayu, websites that utilize interactive media can increase students' interest and enthusiasm. Creating learning platforms that are easily accessible to the public is key. Education-focused websites are evolving alongside advancements in information and communication technology. The application of e-learning will boost participation, as the public can easily access materials online. The best strategy now is to use websites built around educational content.(Nurfalah & Kurniasari, 2022)

This is in line with Farikhah's research,

which stated that there was an increase in knowledge from 80% to 100% for the website group, with a p-value of (0.016), indicating the effect of knowledge before and after receiving educational media through the website.(Farikhah, 2021)

METHOD

The experimental research design applied in this study is a Pre-Experimental design using a One Group Pre-test and Post-test approach. The research was conducted at SMAS Wachid Hasyim 1 Surabaya, starting in December 2023 and continuing until April 2024. The population for this study consists of 86 eleventh-grade science students, with a sample of 50 selected through Simple Random Sampling based

Based on the presented background, to address the issues faced by teenagers, an educational program on Personal Hygiene for teenagers has been implemented through a website at SMAS Wachid Hasyim 1 Surabaya.

on inclusion and exclusion criteria using the Lemeshow formula. The independent variable in the study is Education through a Website, while the dependent variable is the Behavior of Teenage Girls. Data collection was carried out using a questionnaire. Data analysis was performed with SPSS for Windows, including normality tests and the Wilcoxon Signed Rank Test.

RESULT AND DISCUSSIONS

Result

Respondent Characteristics

The research respondents were female students who met the inclusion criteria at SMA Wachid Hasyim 1 in Surabaya. The total number of respondents in this study was 50 female students. The distribution of the characteristics of the adolescent girls can be described as follows: Among them, 11 students (22%) were 16 years old, 25 students (50%) were 17 years old, and 14 students (28%) were 18 years old. Based on the categorization of adolescents

presented in the table, the majority fell into the middle adolescence category, with 36 students (72%).

Table 1. The distribution of respondent characteristics

Characteristics	Frequency (n)	Presentase (%)
Ages		
16 Old	11	22
17 Old	25	50
18 Old	14	28
Total	50	100
Adolescent Girls		
Early (10-13 old)	0	0
Middle (14-17 old)	36	72
Late (18-24 old)	14	28
Total	50	100

Source: Primary Data (2024)

Analysis of the Influence of Website-Based Education on Teenage Girls' Knowledge About Menstrual Personal Hygiene at SMAS Wachid Hasyim 1 Surabaya

Tabel 2. Frequency Distribution of the Influence of Website-Based Education on Teenage Girls' Knowledge About Menstrual Personal Hygiene at SMAS Wachid Hasyim 1 Surabaya

Knowledgess	Pre-Test		Post-Test	
	n	%	N	%
Good	9	18	45	90
Fair	22	44	5	10
Poor	19	38	0	0
Total	50	100	50	100

Source: Primary Data (2024)

Table 2. shows that 38% of respondents had inadequate awareness about personal hygiene during menstruation before receiving information through the website.

After receiving the education via the provided media, the majority of respondents (90%) demonstrated a good level of understanding.

Table 3. The Impact of Website-Based Education on Teenage Girls' Knowledge About Menstrual Personal Hygiene at SMAS Wachid Hasyim 1 Surabaya

Knowledges	n	Minimum-Maximum Score	Median	Mean	Std. Deviation	p
Before	50	15-90	60	52	22,062	0.000
After	50	65-100	87.5	86.6	10,664	

Source: Primary Data (2024)

Based on the statistical test findings from the Wilcoxon Signed Rank Test (Table 3 with a significance p-value of 0.000), website-based education significantly

influenced the understanding of personal hygiene during menstruation among teenage girls at SMAS Wachid Hasyim 1 Surabaya.

Analysis of the Impact of Website-Based Education on Teenage Girls' Attitudes Towards Menstrual Personal Hygiene at SMAS Wachid Hasyim 1 Surabaya.

Table 4. Frequency Distribution of the Impact of Website-Based Education on Teenage Girls' Attitudes Towards Menstrual Personal Hygiene at SMAS Wachid Hasyim 1 Surabaya.

Attitudes	Pre-Test		Post-Test	
	N	%	n	%
Good/Positive	1	2	44	88
Fair/Netral	18	36	5	10
Poor/Negative	31	62	1	2
Total	50	100	50	100

Source: Primary Data (2024)

It is clearly shown in Table 4 that a significant number of respondents (62%) exhibited a negative attitude before receiving knowledge through media such as the website. After receiving information

about personal hygiene during menstruation through internet media components, the majority of respondents (88%) displayed a positive attitude.

Table 5. The Impact of Website-Based Education on Teenage Girls' Attitudes Towards Menstrual Personal Hygiene at SMAS Wachid Hasyim 1 Surabaya.

Attitudes	n	Minimum-Maximum score	Median	Mean	Std. Deviation	p
Before	50	28-83	30	42.34	18,096	0.000
After	50	59-100	87	87.96	7.165	

Source: Primary Data (2024)

Website-based education has an impact on the attitudes of teenage girls at SMAS Wachid Hasyim 1 in Surabaya (Table 5 shows a p-value of 0.000), based on the Wilcoxon signed rank test.

Analysis of the Impact of Website-Based Education on Teenage Girls' Actions Regarding Menstrual Personal Hygiene at SMAS Wachid Hasyim 1 Surabaya.

Table 6 Frequency Distribution of the Impact of Website-Based Education on Teenage Girls' Actions Regarding Menstrual Personal Hygiene at SMAS Wachid Hasyim 1 Surabaya.

Actions	Pre-Test		Post-Test	
	n	%	n	%
Very Supportive	6	12	45	90
Supportive	17	38	5	10
Not Supportive	27	54	0	0
Total	50	100	50	100

Source: Primary Data (2024)

Based on Table 6, it is evident that the majority of respondents (specifically 54%) exhibited non-supportive actions before receiving education through the website.

After the socialization on personal hygiene practices during menstruation via the website, the majority of respondents (90%) fell into the "Very Supportive" category.

Table 7. Influence of Website-Based Education on Adolescent Girls' Actions Regarding Personal Hygiene During Menstruation at SMAS Wachid Hasyim 1 Surabaya

Actions	n	Minimum-Maximum score	Median	Mean	Std. Deviation	p
Before	50	19-88	31	43.26	18.550	0.000
After	50	25-100	94	88	16.407	

Source: Primary Data (2024)

Website-based education has an impact on the actions of teenage girls at SMAS Wachid Hasyim 1 in Surabaya (Table 4.5

DISCUSSION

Based on table 2, before receiving information through the website, the majority of teenage girls had a limited understanding of menstrual hygiene, according to the research. However, their understanding improved after the intervention via the website.

Lawrence defines health education as “an effort to promote healthy behaviors through intentional, planned, and experiential learning,” as stated in Suryana Budi's book. Education about health is commonly referred to as health education.

Through health education, the community can learn more about menstruation. Educational health websites, which are easy to absorb and understand, can broaden the public's understanding. This is important because well-packaged websites have a significant impact on the topic.

According to research conducted by Afiaz and Biswas, 43% of female mobile phone owners obtain information through modern means compared to those who do not own a phone. Similarly, women with access to various media (newspapers,

shows a p-value of 0.000), based on the Wilcoxon signed rank test.

television, radio, and the internet) are more likely to use modern sanitary products. (Afiaz & Biswas, 2021)

Media can help disseminate information about new absorbent pads, which is good news for menstrual health. Findings from this research indicate that the evolving media landscape has the potential to provide intervention programs that enhance or restore understanding of menstrual health management. A more targeted and efficient way to reach a broader audience is through mass media as an intervention.(Afiaz & Biswas, 2021)

If you need resources, you can quickly and easily find them online. Anyone can use this publicly accessible tool to search for information, just like websites. This indicates that a significant number of respondents accessed information via the internet, with 26.9% of respondents in Andani's study using the internet as a source of personal hygiene information. Therefore, it is essential to obtain accurate explanations from experts, such as instructors and health professionals, regarding menstruation and personal

hygiene to understand foreign terminology and avoid misunderstandings.(Andani, 2021)

Based on the table 3, Evidence from pre- and post-tests shows that educational media via the internet influences knowledge both before and after learning. The p-value for this effect is 0.000. This aligns with research presented by Farikhah, indicating that there is an impact on knowledge before and after receiving educational material on a website (p-value = 0.016). (Farikhah, 2021)

Teenage girls with low awareness are often hindered by a lack of reading engagement. This issue arises because, generally, books do not contain sufficiently interesting content to capture teenagers' attention. Therefore, TeenHealthEdu can make a significant impact on teenage girls as it is a website that offers many engaging features, such as the "Let's Discuss" feature that allows them to ask questions and receive answers. On the other hand, the "References" section of TeenHealthEdu provides original journal-based material, ensuring that teenage girls do not have to worry about the reliability of the data presented on the site.

Based on the table 4, The findings indicate that the attitudes of the girls have improved, with a significant increase

compared to their negative attitudes before the intervention through the website. Immediately after the intervention, nearly all respondents rated their understanding positively.

One factor influencing knowledge is age. The majority of respondents fall into the middle and late adolescent categories, suggesting that they are more mature in their thinking. Experience is another aspect that may contribute to differences in understanding. Analytical findings align with the hypothesis regarding the perception of certainty about an object when "knowing" occurs, according to Notoatmodjo. Seeing, hearing, smelling, tasting, and touching are the senses that enable humans to perceive the world around them. The level of focus, perception, or opinion an individual has about an object significantly impacts how quickly they can learn about it through sensory experiences.

Findings from Notoatmodjo's research state that this aligns with the concepts presented by Lawrence Green in his book "Theory Factors" regarding variables that influence community actions. Several steps are involved in effecting the aforementioned changes, including "knowledge," "attitudes," and "practices" (often abbreviated as "KAP").

The most critical component in

determining a person's everyday behavior is their attitude, although other variables, such as the surrounding environment and beliefs, also play a role. The characteristics of a person's behavior, such as their attitude, make them unique. One can predict an individual's reaction or actions in response to a crisis or event by observing their attitude. While an attitude can sometimes dictate a person's actions, not all attitudes have the power to bring about behavioral change.(Syamaun, 2019) The findings of this study align with research conducted by Sentia Reni titled “Ma Darul Hijrah Nwdi Understanding, and Behavior of Adolescent Girls in Orong Balu Wanasaba Daya as a Result of Health Education.” The study found that respondents with positive attitudes were more likely to assess menstrual hygiene better than those with negative attitudes. This indicates that adolescent behavior will improve in accordance with their level of optimism regarding menstrual hygiene.(Sentia et al., 2023)

The majority of respondents in this study held a pessimistic view. Many girls in this group had negative attitudes and believed they could not manage menstrual hygiene issues. Adolescents need strong information to enhance their attitudes; one way to achieve this is by improving reading engagement through appealing

and educational material like TeenHealthEdu. After receiving the intervention, the attitudes of the teenage girls improved thanks to the website that provided relevant information.

Based on the table 5, The majority of adolescent girls exhibited behaviors categorized as "poor" in terms of menstrual hygiene, according to research conducted before they received information through the website. However, after the intervention via the web, the behavior of the adolescent girls improved.

According to Notoatmodjo (2003), actions are the manifestation of knowledge and attitudes toward something that is correct. A person's response to external stimuli, whether in concrete or open form, is also considered an action. Perception based on theory does not apply naturally; automatic processes manifest as an action or open behavior. For this mindset to develop or become actual behavior, facilities and other supporting elements are necessary.(Adventus et al., 2019)

Providing health education interventions on personal hygiene during menstruation may have a positive impact on adolescents' knowledge and behavior regarding self-hygiene. The media used in health education can also serve as supporting components, and researchers

can utilize it to make the material engaging, easy to understand, memorable, and enjoyable for adolescents.(Hartoyo & Susanto, 2021)

Findings from statistical analyses by Hartoyo and Erlina Wati indicate that both girls and boys at Pondok Pesantren Al-Qur'an Insan Pratama greatly benefited from a health education program focused on personal hygiene. The p-value for this dataset is 0.000, which is less than the significance level of 0.05.(Hartoyo & Susanto, 2021)

CONCLUSION

Based on the discussion and data analysis, we can draw the following conclusions and make recommendations regarding the impact of website-based education on adolescent girls' behavior at SMAS Wachid Hasyim 1 Surabaya related to personal hygiene during menstruation:

1. Website-based education influences the knowledge of adolescent girls at SMAS Wachid Hasyim 1 Surabaya regarding personal hygiene during menstruation.
2. Website-based education affects the attitudes of adolescent girls at SMAS Wachid Hasyim 1 Surabaya towards personal hygiene during menstruation.
3. Website-based education impacts the actions of adolescent girls at SMAS Wachid Hasyim 1 Surabaya concerning

Having knowledge during adolescence positively affects mood, behavior, and personal hygiene efforts. Adolescents might still feel embarrassed or hesitant to ask about menstruation because they perceive maintaining personal hygiene as unimportant. Consequently, there is a lack of activity to address this issue. The experience of adolescent girls improved from "less supportive" to "very supportive" after the intervention, according to the study findings.

personal hygiene during menstruation.

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