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Effectiveness of Health Video Education on Knowledge and Preventive Behavior Regarding Polycystic Ovary Syndrome (PCOS) among Female Adolescents at SMAN Glenmore

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ABSTRACT

Background: Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder among adolescent girls, yet awareness and preventive attitudes remain low. Limited knowledge during adolescence may lead to delayed recognition and inadequate prevention. **Object** This study aimed to determine changes in knowledge and preventive attitudes before and after receiving video-based health education about PCOS. **Method:** This pre-experimental one-group pretest–posttest study was conducted at SMAN Glenmore with 130 female students who met predefined inclusion criteria and were selected through purposive sampling. The intervention consisted of a structured educational video on PCOS shown to respondents, followed by pre- and post-assessment using validated and reliable questionnaires measuring knowledge and preventive attitudes. Data were analyzed using the Wilcoxon Signed Rank Test with a significance level of $\alpha = 0.05$. **Results:** The analysis results before the education showed that students had sufficient knowledge (59.2%), while after the education, this increased to good knowledge (93.61%). The analysis of preventive attitude showed that most students had an already positive attitude before the intervention (95.2%), and after the education, this showed a positive attitude in all students (100%). Statistically, there was a significant effect of health education on the level of knowledge ($p = 0.000$) and preventive attitude ($p = 0.001$). **Conclusion:** Health video education proved to be effective in relation to the level of knowledge and preventive attitude regarding PCOS. This demonstrates the importance of health education for adolescent girls to enhance their knowledge in preventing the occurrence of PCOS.

Keywords: PCOS, Health Education, Educational Video, Knowledge, Preventive Attitude

BACKGROUND

Polycystic Ovary Syndrome (PCOS) is a hormonal disorder characterized by enlarged ovaries accompanied by small cysts on the outer edge, resulting from the excessive production of androgens (Kumari, 2022).The condition commonly manifests through menstrual irregularities, acne, obesity, hirsutism, and metabolic disturbances including impaired glucose tolerance and insulin resistance (Javed et al., 2022). If not identified and managed early, PCOS can increase the risk of infertility, cardiovascular diseases, and type 2 diabetes in adulthood (Syamsiah, Christina, 2024). Globally, PCOS affects approximately 6–13% of women of reproductive age, yet more than 70% of cases remain undiagnosed, highlighting a critical gap in awareness and early detection (WHO, 2025). In Indonesia, the prevalence is estimated at 5–10%, with adolescent girls increasingly reported as a vulnerable population (Rezki, 2024). Among adolescents, the prevalence of PCOS ranges from 11–26%, with

approximately 50% of them experiencing overweight (Oktavia, 2024). Data in East Java in 2023 showed a PCOS prevalence of 4–12% in women of reproductive age (KOMINFO & JATIM, 2023).

Pathophysiologically, PCOS is characterized by an increase in luteinizing hormone (LH) secretion, a decrease in follicle-stimulating hormone (FSH), and a disturbance in gonadotropin secretion, which leads to excessive androgen production and ovulatory dysfunction (Xu & Qiao, 2022). This hormonal imbalance is also associated with metabolic disorders such as recurrent hyperglycemia and hyperinsulinemia (Tűű et al., 2024). These conditions often emerge during puberty due to the increased secretion of gonadotropins and ovarian sex hormones (Böttcher, 2023). The management of PCOS is influenced by various factors, including the level of knowledge, economic status, as well as psychological conditions such as stress and anxiety (Guo et al., 2022).

The management of PCOS can be carried out through either pharmacological or non-pharmacological therapies. Non-pharmacological efforts such as dietary regulation, regular exercise, and weight control are considered the primary prevention strategies (Jessica Rianty Suhendi, 2023). Media-based health education is an effective approach to increase adolescents' awareness and understanding of PCOS. Video media is deemed suitable for adolescents' characteristics because it can convey information in an engaging, clear, and easily understandable audio-visual format (Clarke et al., 2023). Therefore, this study aims to analyze the effectiveness of health video education on PCOS in relation to the level of knowledge and preventive attitude towards PCOS in adolescent girls at SMAN Glenmore, considering the still low understanding of this disorder among students and the importance of early prevention efforts.

RESEARCH METHODS

Materials and Method

The subjects in this study were 194 female students aged 16–17 years from grades XI and XII at SMA Negeri 1 Glenmore, which is located in Glenmore District, Banyuwangi Regency, East Java. The sample used consisted of 130 subjects selected using a purposive sampling technique, which allowed the researchers to include participants who met predetermined characteristics relevant to the study variables. The inclusion criteria included: female students who were active in school, willing to participate as respondents, and present during both the pretest and posttest sessions. The exclusion criteria included: students who were participating in other studies at the same time or those engaged in school activities that prevented participation during the research implementation.

Research Design

This study employed a pre-experimental one-group pretest–posttest design**.** This design was appropriate because the study aimed to measure changes in knowledge and preventive attitudes before and after the intervention within a single group of respondents, without the use of a control group. The sampling process and inclusion criteria were fully aligned with this design, as the sample was selected using purposive sampling to ensure that only eligible female students participated in both measurement phases.

Research Procedure

The research procedure began with conducting validity and reliability testing of the instruments, in which the knowledge questionnaire obtained a validity value of r = 0.737 and a reliability score of Cronbach’s Alpha = 0.711, while the preventive attitude questionnaire obtained a validity value of r = 0.776 and a reliability score of Cronbach’s Alpha = 0.953, after which the researcher explained the study objectives to eligible

respondents, obtained informed consent, administered the pretest questionnaire, facilitated the delivery of a structured educational video on PCOS in the classroom under direct supervision, and subsequently distributed the posttest questionnaire immediately after the intervention to ensure that all respondents completed both assessments in the correct sequence and under consistent conditions to minimize bias.

Instruments and Equipment

The instruments in this study included a PCOS educational video and validated questionnaire sheets. The educational video was prepared using a combination approach**,** in which the researcher created original material and adapted additional content from credible sources to ensure accuracy and suitability for adolescents.

Data Collection Methods

The data collection method used was a survey employing a questionnaire sheet that was declared valid and reliable. The research instruments consisted of questionnaires for the level of knowledge and preventive attitude regarding PCOS. These questionnaires were tested, confirming their validity and reliability. The questionnaire was considered valid after a validity test resulted in an r value of 0.737 for knowledge and an r value of 0.776 for attitude. Meanwhile, the reliability test using Cronbach's Alpha showed a value of 0.711 for knowledge and 0.953 for attitude, which indicates that the instruments are valid and reliable.

Data Analysis

Univariate analysis was utilized to analyze each variable individually. Bivariate analysis employed the Wilcoxon Signed Rank Test to determine the effectiveness between variables. This analysis was performed using the IBM SPSS Statistics 24 application.

Research Ethics

This study has obtained ethical clearance (or ethical approval) with the number: No: 227/03/KEPK-STIKESBWI/VII/2024-2025.

RESULT AND DISCUSSION

Table 1.

Frequency Percentage of Pre-Post Knowledge Level and Preventive Attitude

Specific Data	Frequency	Percentage *(%)*
Pre-Test Knowledge Level		
Good	41	31,5%
Moderate	77	59,2%
Low	12	9,3%
Total	**130**	**100%**
Post- Test Knowledge Level		
Good	121	93,1%
Moderate	9	6,9%
Low	0	0%
Total	**130**	**100%**
Preventive Attitude Pre-Test		
Positive	119	91,53%
Negative	11	8,47%
Total	**130**	**100%**
Preventive Attitude Post- Test		

Specific Data	Frequency	Percentage *(%)*
Positive	130	100%
Negative	0	0%
Total	**130**	**100%**

Based on Table 1, before the video education was administered, the data showed that 41 respondents had good knowledge, 77 had sufficient knowledge, and 12 respondents had poor knowledge. After the video education, the number of respondents with good knowledge increased to 121, 9 respondents had sufficient knowledge, and no respondents were in the low knowledge level. Regarding preventive attitude, before the health video education, out of 130 total respondents, 119 had a positive preventive attitude, and 11 respondents had a negative preventive attitude. After the video education, there was an increase, with all respondents (100%) exhibiting a positive preventive attitude.

Table 2.

Pre-Post Analysis of Knowledge and Preventive Attitude Using the Wilcoxon Signed Rank Test

Test Statistics[a]

	Post-Test Knowledge Level – Pre-Test Knowledge Level
Z	**-8.525** [b]
Asymp. Sig. (2-tailed)	.000

Test Statistics[a]

	Post-Test Preventive Attitude – Pre-Test Preventive Attitude
Z	**-3.317** [b]
Asymp. Sig. (2-tailed)	.001

Based on Table 2, the results of the Wilcoxon Signed Rank Test analysis showed a significance value of p = 0.000 for knowledge and p = 0.001 for preventive attitude, which proves the effectiveness of the video intervention.These results indicate that video media plays a crucial role in enhancing adolescent health literacy because it is capable of presenting messages using simple language, attractive illustrations, and a duration that suits the learning characteristics of today's adolescents.

Discussion

Pre-Post Effectiveness of Health Video Education on PCOS Knowledge Level

This increase suggests that knowledge is a crucial foundation for health behavior change, as a higher level of knowledge leads to better attitudes and actions in disease prevention (Syamsiah, Christina, 2024). Knowledge forms the basis of health behavior change, because without adequate knowledge, it is difficult for individuals to make appropriate decisions regarding disease prevention (Clarke et al., 2023). Audiovisual media is explained to increase information absorption because it combines sound, images, and an engaging storyline. According to Lawrence Green's

PRECEDE–PROCEED theory, an individual's health behavior is influenced by predisposing factors such as knowledge, attitudes, and beliefs, which determine the individual's readiness to act (Sayuti et al., 2022). The improvement in knowledge after the intervention is very likely to have occurred because the video medium used was able to stimulate students' understanding visually and auditorily (Tania Pratiwi & Setiawan, 2019).

The lack of knowledge before the educational video intervention was due to the absence of specific learning about reproductive health, even though understanding about PCOS (Polycystic Ovary Syndrome) from adolescence is crucial for preventing future fertility disorders and metabolic problems (Wijayanti et al., 2024). The effectiveness of video media stems from its ability to present information in an engaging visual and auditory manner, which helps students understand and recall the material better. Based on Dale's Cone of Experience theory, learning through audiovisual media can enhance understanding because it involves more senses in the learning process (Nugraha et al., 2023). This limited knowledge also indicates that adolescents inherently have curiosity, but they do not receive appropriate sources of information. This underscores the importance of providing valid and engaging educational video interventions so that adolescents don't just know about PCOS superficially, but understand it thoroughly.

Pre-Post Effectiveness of Health Video Education on PCOS Preventive Attitude

The improvement in students' preventive attitudes following the educational intervention suggests that increased knowledge plays a crucial role in shaping adolescents' readiness to adopt healthy behaviors related to PCOS prevention. According to Ajzen's Theory of Planned Behavior, attitudes are influenced by beliefs about the outcomes of an action and the perceived benefits of preventive measures (Zelharsandy, 2022). According to Ajzen's (2020) Theory of Planned Behavior, the intention to act arises after an individual holds a positive belief regarding the benefits of the behavior performed. Thus, when students understand the importance of maintaining weight, healthy eating, and physical activity, their intention to engage in preventive actions becomes stronger. The educational video, which featured examples of healthy behaviors like maintaining weight, regular exercise, and healthy eating patterns, further reinforced students' awareness and motivation to prevent PCOS. Even if knowledge isn't optimal, adolescents might still show positive attitudes due to the influence of their environment or peers. However, this positive preventive attitude might not yet be based on a solid understanding of the knowledge.

This finding aligns with previous research stating that audiovisual-based health education can increase awareness and positive behavior in adolescents (Sari et al., 2023). Their habit of accessing digital platforms like YouTube and TikTok also makes video a relevant and easily accepted educational tool (Cowan et al., 2023). Preventive attitudes can be strengthened by education that includes real-life examples, as adolescents are more likely to imitate behavior they see visually (Annashr et al., 2021). Health education delivered through video is effective not only in increasing knowledge but also in fostering a better preventive attitude towards health, particularly in the effort to prevent PCOS. The engaging audiovisual presentation makes students feel more connected and motivated to adopt healthy behaviors. Furthermore, educational video media does not just provide knowledge; it can also cultivate a more aware and proactive attitude in mitigating the risk of PCOS.

CONCLUSION

Video-based health education demonstrated its capacity to enhance adolescents' conceptual understanding of PCOS and to foster more constructive preventive attitudes. By providing structured and accessible information, the intervention supported students in recognizing the significance of early awareness, risk identification, and appropriate preventive behaviors. These findings underscore the relevance of integrating audiovisual media into school-based reproductive health initiatives, particularly in contexts where formal health education resources remain limited. Strengthening such educational strategies may contribute to improved reproductive health literacy and promote sustained preventive actions among adolescents.

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