

Research Article

The Effectiveness of Video-Based Educational Media on Adolescents' Knowledge of Syphilis at Al Hikmah 2 Vocational School, Sirampog, Brebes Regency

Nunung Febriyaningsih ^{1*}, Noveri Aisyaroh ²

¹ Sarjana Kebidanan Universitas Islam Sultan Agung Semarang, Indonesia
Email : febriyannunung@gmail.com

² Sarjana Kebidanan Universitas Islam Sultan Agung Semarang, Indonesia
Email : noveri@unissula.ac.id

* Correspondence: febriyannunung@gmail.com

Abstract Syphilis is one of the reproductive health problems that remains a challenge in Indonesia, with a trend of increasing cases, while the level of adolescent knowledge about this disease is still low. Educational efforts are needed to improve adolescent understanding, one of which is through video media which is considered more interesting because it combines visual and audio elements. This study aims to evaluate the effectiveness of video as an educational medium in improving adolescent knowledge about syphilis at SMKS Al Hikmah 2 Sirampog, Brebes Regency. This type of research is a pre-experimental study with a one group pretest-posttest design. The study sample consisted of 47 students selected using a purposive sampling technique. The research instrument was a syphilis knowledge questionnaire administered before and after the educational video intervention. Data analysis used the Wilcoxon Signed Rank Test and N-Gain calculation. The study showed that Results Before the intervention, the level of knowledge of respondents was in the good category for 24 students (51.1%), sufficient for 11 students (25.5%), and poor for 12 students (23.4%). After being given the educational video intervention, there was a significant increase with all respondents (100%) being in the good category. The Wilcoxon Signed Rank Test showed a significant difference between pretest and posttest scores (p -value = 0.000). N-Gain analysis categorized the increase in knowledge as high. The study concluded that video media has proven effective as an educational tool in increasing adolescent knowledge about syphilis, making it a viable alternative learning medium in reproductive health programs.

Keywords : Educational Video, Knowledge, Reproductive Health, Syphilis, Teenagers.

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1. BACKGROUND

Adolescence is the transition from childhood to adulthood, involving changes in various biological, psychological, and sociocultural aspects. Biologically, puberty can be marked by physical changes, such as breast development or voice changes. According to the National Family Planning Coordinating Board (BKKBN), adolescents are those aged 10-24 who are unmarried. Meanwhile, the Ministry of Health, in its work program, defines adolescents as those aged 10 to 19 (BKKBN, 2023).

During puberty, adolescents experience heightened sexual urges due to hormonal changes, leading them to seek attention from the opposite sex and engage in sexual behaviors such as kissing and intercourse. However, many adolescents are not yet emotionally and psychologically prepared to understand the risks and control these urges. This is exacerbated by a lack of understanding about sexuality and social norms that prohibit premarital sex (Roby & Djoko, 2023).

Promiscuous behavior among adolescents can lead to negative impacts such as unwanted pregnancies (KTD), sexually transmitted infections (STIs) such as gonorrhea, genital herpes, trichomoniasis, syphilis, and HIV/AIDS, as well as psychological disorders and sexual deviations. Many adolescents are unaware that STIs, such as syphilis, can occur without obvious initial symptoms. Syphilis can cause painless sores, skin rashes, fever, joint pain, and warts in the genital area. If left untreated, syphilis has the potential to cause serious damage to organs such as the heart, blood vessels, nervous system, and brain (Patanduk et al., 2023).

Syphilis is a systemic, chronic infectious disease caused by the gram-negative bacterium *Treponema pallidum*. Syphilis is a key reproductive health issue, primarily sexually transmitted and considered a sexually transmitted infection (Laurentino et al., 2024). Globally, the WHO recorded approximately 14.1 million cases of syphilis in 2019, representing an increase of approximately 60% over the past 30 years. In 2020, an estimated 7.1 million adults aged 15–49 were infected with syphilis. Between January and September 2024, 6,855 cases of syphilis were recorded in adolescents aged 15–19, including 245 primary, 239 secondary, and 49 congenital syphilis cases. Several countries reported significant increases, particularly among men who have sex with men (MSM) and congenital syphilis cases. In the Americas, approximately 30,000 cases of mother-to-child syphilis transmission were recorded in 2021 (WHO, 2024).

In Indonesia, syphilis cases among people aged 24–45 have increased sharply over the past five years. The number of cases rose from 17,560 in 2019 to 18,437 in 2020, and reached 20,783 in 2022—nearly 70% higher than in 2018. In 2023, the proportion of cases treated reached 70%, with a performance achievement of 82.35%, but still below the national target of 85% (Ministry of Health, 2022).

Based on data on syphilis cases in the 24–45 age group, there has been an increase in the past five years, but no data is available on the number of syphilis cases in adolescents. Research by Umniya et al. (2023) states that the number of syphilis cases in adolescents has increased by six million new cases annually, especially in those aged 15 years. Syphilis cases in Indonesia remain a problem, with 76,923 new cases found in adolescents. The number of syphilis sufferers in Indonesia from January to March 2021 through a laboratory diagnostic approach was 2,976 cases of early syphilis and 892 cases of late syphilis (Umniya et al., 2023).

In Central Java Province, syphilis is part of the triple elimination program and continues to attract attention due to its increasing trend (Central Java Provincial Health Office, 2023). Based on data from the Brebes Regency Health Office, 28 cases of syphilis were recorded in 2022 (Brebes Regency Health Office, 2022). The high number of syphilis cases is influenced by interpersonal stigma, judgmental attitudes of service providers, limited facilities providing syphilis testing, shortages of test kits, and high costs within the health system (Muhindo et al., 2021). The social stigma surrounding syphilis makes many people, including adolescents, reluctant to get tested for fear of discrimination or ostracization, thus choosing not to know their health status (Widiawati, 2023).

The Brebes Regency Government has implemented a syphilis prevention program for adolescents through the roles of PAFI, PIK-KRR, BKKBN, and the Triad Genre program. However, access to reproductive health education remains limited, especially in schools. Adolescents' knowledge of syphilis remains low. To increase knowledge, various methods are used, such as videos, lectures, leaflets, and educational campaigns. A study by Larasati et al. (2023) showed that videos are more effective in increasing adolescent understanding because they combine engaging and easy-to-understand visuals and audio.

A preliminary survey of four tenth-grade female students at SMKS Al Hikmah 2 Sirampog revealed that their knowledge of syphilis remains low, as evidenced by their lack of knowledge of its causes, transmission methods, and symptoms. This situation highlights the need for engaging educational media, such as videos, to improve adolescents' understanding. This indicates that adolescents' knowledge of syphilis at the school is still low, necessitating the use of appropriate and engaging educational media, such as videos, to improve their understanding.

2. THEORETICAL STUDY

Media comes from the Latin word *medium*, which means intermediary. In general, media can be defined as a tool or means used to convey a message from the sender to the recipient. Examples of media include films, television, diagrams, print materials, computers, teachers, and others (Hasan et al., 2021). Media plays a role as a tool to convey messages to the audience, so that the content can be more easily understood by the target audience. In health promotion, media can contain health-related information delivered through print media, electronic media such as radio, TV or computers, and outdoor media. The goal is to increase knowledge and encourage behavioral changes towards a healthier and more positive direction (Jatmika et al., 2019).

Video is a form of audio-visual media that utilizes the senses of hearing and sight. Video is used as a learning tool for listening, displaying a series of images in frames projected through a projector lens, creating a moving image. Video's ability to display moving images and sound makes it more engaging. Furthermore, video can be used to convey information, illustrate processes, explain concepts, teach skills, and influence audience attitudes (Fajar, 2021).

Knowledge can be measured by administering a questionnaire containing questions about the topic the respondent wants to learn, or through direct interviews with research subjects. The measurement process can be tailored to the level of knowledge, ranging from knowing, understanding, applying, analyzing, synthesizing, to evaluating (Aiman et al., 2022).

Syphilis is a highly chronic and systemic STI caused by *Treponema pallidum* subspecies *pallidum*. One of the reasons this disease is so dangerous is that it can increase the risk of HIV infection in people who are not yet infected with HIV. In people living with HIV/AIDS (PLWHA), syphilis can increase the risk of HIV infection. However, with early

treatment, complications and potential life-threatening complications can be avoided (Relica & Mariyati, 2024).

3. RESEARCH METHODS

This study is a pre-experimental study using a *one-group pretest-posttest design*. The researcher administered an intervention to a group, measured through a pretest *first*, and then re-measured using a *posttest after the intervention*. The sample consisted of 47 students selected using a purposive sampling technique. The research instrument was a syphilis knowledge questionnaire administered before and after the educational video intervention. Data analysis used the Wilcoxon Signed Rank Test and N-Gain calculation.

4. RESULTS AND DISCUSSION

Level of Knowledge of Adolescents Before and After Being Given Education Using Video

The results of the study showed that the average knowledge score of respondents in the pre-test was 9.74 with the lowest value of 1 and the highest of 14. The distribution of respondents' knowledge levels was in the good category of 24 respondents (51.1%), the sufficient category of 11 respondents (25.5%), and the less category of 12 respondents (23.4%). After being given education using video media, the average knowledge score of respondents increased to 14.74 with the lowest value of 12 and the highest of 15. All respondents (47 people = 100%) were in the good category.

This research aligns with research by Kusumastuty et al., 2020, which found that after education was provided through video media, knowledge increased by an average of 65.68%. Individual knowledge before receiving health education is influenced by various factors, such as education level, access to information or mass media, social, cultural, and economic conditions, the surrounding environment, life experiences, and age. Knowledge levels can be categorized into several levels: knowing, understanding, applying, analyzing, synthesizing, and evaluating (Yensya, 2020). Furthermore, knowledge can be acquired through various means, such as trial and error, chance, authority or power, personal experience, common sense, intuitive truth, revelation, and even through logical thinking processes, both induction and deduction (Notoatmodjo, 2018).

The Effectiveness of Video as an Educational Medium

In non-normally distributed data, the Wilcoxon Signed Rank Test was used, which showed that most of them experienced an increase with a $p\text{-value} = 0.000$ ($p < 0.05$). This indicates a significant difference in pre-test and post-test scores, which proves that education through video media is effective in increasing respondents' knowledge about syphilis.

These results are in line with research (Larasati, Santoso and Drew, 2023) using the Wilcoxon test found a significant relationship between the level of knowledge about syphilis before and after counseling using educational videos with a $p\text{-value} = 0.000$ mean difference value of 42.22. Thus, this study is proven to be able to increase respondents' knowledge about

syphilis through counseling using educational videos. Supported by the results of research by (Ratih et al., 2024) which stated that video media has a p value of 0.000 ($p < 0.05$) which means it has significant effectiveness on adolescent knowledge.

The use of video media has been proven to be more effective in delivering educational messages than non-media methods. According to Djannah et al. (2020), audiovisual media plays a crucial role in improving reproductive health knowledge among adolescents. Research (Wahyudi & Raharjo, 2023) also demonstrated that health education through video has a positive impact on increasing knowledge, as evidenced by significant differences before and after the intervention.

Media has a role as a tool to convey messages to the audience, so that the content of the message can be more easily understood by the intended person. In health promotion, media can contain information about health that is conveyed through print media, electronic media such as radio, TV or computers, and outdoor media. The goal is to be able to increase knowledge and can encourage behavioral changes towards a healthier and more positive direction (Jatmika et al., 2019) video media has advantages and disadvantages including being able to show activities again, the use of certain features in videos that can facilitate the learning process by delivering interesting material, information can be displayed simultaneously in different places, through videos students can learn independently without depending on teachers (Gulo et al., 2024).

Thus, using video as an educational medium can increase adolescents' understanding and awareness of syphilis. This increased knowledge is expected to encourage them to make wiser decisions about maintaining their health.

5. CONCLUSION

From the research results, it can be concluded that video media has proven effective as an educational medium in increasing adolescent knowledge about syphilis, so it can be used as an alternative learning medium in reproductive health programs.

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