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Impact of Video-Based Health Education on Adolescents' Awareness of Frambusia at Puskesmas Tairi

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ABSTRACT

Background: Frambusia, a neglected tropical disease, poses a significant health challenge in tropical regions, including Indonesia. The disease predominantly affects children and adolescents, especially in areas with poor sanitation. This study evaluates the impact of video-based health education on adolescents' knowledge of Frambusia at Puskesmas Tairi.
Purpose: To assess the effectiveness of video-based education in enhancing adolescents' awareness and understanding of Frambusia disease.
Method: A pre-experimental design with a one-group pretest-posttest approach was used. A sample of 85 adolescents, aged 12 to 15 years, received health education on Frambusia through video media. Knowledge levels were assessed using pretest and posttest questionnaires, analyzed with the Wilcoxon signed-rank test.
Results: Before the intervention, 85.7% of respondents had poor knowledge about Frambusia. Post-intervention, 94.3% of respondents demonstrated good knowledge. The Wilcoxon signed-rank test revealed a significant improvement in knowledge ($p < 0.001$).
Discussion: The use of video-based education significantly enhanced adolescents' understanding of Frambusia. This approach effectively engages both auditory and visual senses, leading to better knowledge retention and potential community impact.
Conclusion: Video-based health education is a powerful tool for improving disease awareness among adolescents. Implementing similar methods could benefit other regions with high incidence of Frambusia and other neglected diseases.

Keywords: adolescents, frambusia, health education, knowledge, video-based

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BACKGROUND

Frambusia, commonly known as Frambusia, remains a critical public health challenge globally and within Indonesia. The World Health Organization (WHO) designates frambusia as one of the 20 Neglected Tropical Diseases (NTDs), prevalent in tropical regions with inadequate sanitation. This disease is widespread in areas such as Africa, South America, Oceania, and Southeast Asia (Samidah et al., 2023; Sudirman et al., 2023).

In 2021, WHO reported 1,102 confirmed cases of frambusia worldwide. Indonesia, in particular, reported 673 cases in 2020, with West Papua province experiencing a notably high incidence of 336 cases in the same year (Felicia & Suhartono, 2021; Tondok et al., 2022). In 2023, Kaimana Regency in West Papua reported 60 cases, with the Tairi Community Health Center (Puskesmas Tairi) documenting 48 cases predominantly among children aged 1 to 15 years.

This age group is particularly vulnerable to frambusia due to their still-developing immune systems. The bacteria responsible for frambusia are transmitted through direct skin-to-skin contact, especially when there are open sores or abrasions. Children and adolescents are more likely to engage in activities in unsanitary environments, frequently come into contact with infected peers, and often lack sufficient knowledge about personal hygiene and wound care (Destra et al., 2023; Natasha et al., 2024).

Despite the efforts of Puskesmas Tairi and the Kaimana Health Office to treat frambusia, prevention strategies, especially those involving health promotion and education, have been insufficient. This shortfall has resulted in a continued rise in cases. An initial study conducted with 10 adolescents at Puskesmas Tairi highlighted a significant gap in their understanding of frambusia. This lack of knowledge about the disease’s symptoms, transmission, and prevention underscores the need for improved educational initiatives. Implementing an effective health education program is essential for providing adolescents with accurate and relevant information about frambusia.

Video-based education offers a promising solution to address this educational gap. Videos can present information in a visually engaging and easily understandable format, which may be more effective for young audiences. They can illustrate the disease's symptoms, modes of transmission, and preventive measures in an accessible way. Additionally, videos can be used repeatedly and shared widely, allowing for broader reach and reinforcement of key messages (Noetel et al., 2021; Xiao et al., 2023).

The proposed research aims to assess the impact of video-based health education on adolescents' awareness of frambusia at Puskesmas Tairi. By offering clear and engaging information through video, the study seeks to improve adolescents’ knowledge of the disease’s symptoms, transmission, and preventive measures. It will evaluate changes in their awareness before and after the intervention to determine its effectiveness. Ultimately, the research aspires to make a positive contribution to frambusia prevention efforts in the Puskesmas Tairi area and reduce the incidence of the disease in the community.

OBJECTIVE

The objective of this study is to evaluate the effectiveness of video-based health education in enhancing adolescents' knowledge and awareness of frambesia at Puskesmas Tairi.

METHOD

Study Design

This study employs a quantitative approach using a pre-experimental design, specifically the One-Group Pretest-Posttest Design. This design allows for a comparison of

participants' knowledge before and after the intervention, providing a clearer assessment of the impact of the health education provided.

Participants

The study population consists of 552 adolescents aged 12 to 15 years within the service area of Puskesmas Tairi in March 2024. A sample of 85 participants was selected using purposive sampling, based on inclusion criteria such as willingness to participate and the ability to read and write, not currently suffering from yaws disease and not experiencing visual, hearing, or speech impairments.

Intervention

Participants underwent a pretest to assess their initial knowledge of Frambusia (frambesia). Following this, they received health education about Frambusia through video-based media. A posttest was conducted afterward to measure any changes in their knowledge.

Data Collection

Data were collected using a structured questionnaire, which was validated for reliability and validity. Validity testing shows all questionnaire variables significantly correlate with total scores, with Pearson Correlations from 0.656 to 0.996 ($p < 0.001$), except for X6 and X7, which remain within acceptable significance levels. Overall, the questionnaire demonstrates strong validity. Reliability testing yields a high Cronbach's Alpha of 0.947, confirming the questionnaire's strong consistency and reliability. The pretest and posttest questionnaires included 10 questions with binary (Yes/No) answers.

Data Analysis

Data were analyzed using the Wilcoxon signed-rank test to determine any significant differences in knowledge before and after the intervention. Statistical analysis was performed using SPSS software with a significance level set at 0.05.

RESULTS

Table 1. Characteristic of Respondents

Characteristics	Frequency (f)	Percentage (%)
Sex		
Male	48	57.1
Female	37	42,8
N	85	100
Age		
12 – 13 years old	34	28,5
14 – 15 years old	51	71,4
N	85	100

The study involved 85 respondents, with the majority being male (57.1%) and the remaining female (42.9%). This distribution indicates that more males participated in the study on the effect of health education on adolescents' knowledge about Frambusia disease at Puskesmas Tairi. Most respondents (71.4%) were aged 14–15 years, while the remaining 28.6% were aged 12–13 years. This suggests that the majority of the participants were in the older adolescent age group.

Table 2. Adolescents' Knowledge Level Before and After Receiving Health Education on Frambusia Disease

Knowledge Level	Frequency (f)	Percentage (%)
Pre Test		
Good	7	5,7

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Adequate	10	8,6
Poor	68	85,7
N	85	100
Post Test		
Good	79	94,3
Adequate	3	2,9
Poor	3	2,9
N	85	100

Before receiving health education, 85.7% of respondents had a low level of knowledge about Frambusia disease, 8.6% had a moderate level, and only 5.7% had a good level. This data shows that most respondents were initially uninformed or had limited knowledge about the disease. After the health education intervention, there was a significant improvement in knowledge levels. 94.3% of respondents had a good level of knowledge, while only 2.9% remained in the moderate and low knowledge categories. This indicates that the health education was highly effective in increasing awareness and understanding of Frambusia disease among the adolescents.

Table 3. Wilcoxon Signed Rank Test Results

		Ranks		
		N	Mean Rank	Sum of Ranks
Posttest - Pretest	Negative Ranks	0[a]	.00	.00
	Positive Ranks	35[b]	18.00	630.00
	Ties	0[c]		
	Total	35		

a. Posttest < Pretest
b. Posttest > Pretest
c. Posttest = Pretest

The Wilcoxon Signed Rank Test was used to evaluate the significance of the knowledge improvement. The descriptive statistics showed a marked increase in the mean knowledge score from 30.0 before the intervention to 91.7 after the intervention. The decrease in standard deviation from 18.47 to 12.24 indicates a more consistent understanding among respondents post-intervention.

The Wilcoxon test results (Table 3) show no negative ranks, indicating no respondents had decreased knowledge after the intervention. All 85 respondents showed improved knowledge, with a significant mean rank of 18.00 and a sum of ranks of 630.00. The p-value obtained from the test was <0.001, which is much lower than the significance level of 0.05, confirming a statistically significant difference between pretest and posttest knowledge levels.

DISCUSSION

The research conducted at Puskesmas Tairi demonstrates a significant improvement in adolescents' knowledge about Frambusia disease (frambusia) following the implementation of health education using audio-visual media. Initially, a majority of the respondents (85.7%) exhibited a lack of knowledge about Frambusia, indicating a clear need for targeted

educational interventions. Prior to the intervention, many respondents were unaware of crucial aspects of Frambusia, including its causes, symptoms, transmission, and potential complications (Destra et al., 2023; Sudirman et al., 2023; Tondok et al., 2022).

Several factors contribute to baseline knowledge levels. Internal factors such as age and prior experience, and external factors like education, access to information, and environmental influences play a role. This aligns with previous studies, which show that knowledge acquisition is influenced not just by formal education but also by non-formal education and media exposure. For example, previous study highlight that non-formal education and media can effectively enhance understanding in communities with limited formal educational resources (Destra et al., 2023; Samidah et al., 2023; Sudirman et al., 2023).

Post-intervention results show a marked improvement, with 94.2% of respondents demonstrating good knowledge about Frambusia. The use of audio-visual media was likely pivotal in this improvement. Audio-visual education engages both auditory and visual senses, making the content more memorable and easier to comprehend. This method supports the findings of previous study, who found that multimedia approaches significantly enhance understanding and retention by catering to different learning styles and reinforcing information through repeated exposure (Diaz, 2022; van Steenbergen et al., 2022).

The effectiveness of the health education program is confirmed by the Wilcoxon signed-rank test, which indicated a statistically significant increase in knowledge ($p < 0.001$). This supports the notion that health education can lead to meaningful improvements in disease awareness. Previous research underscores the value of video-based education in enhancing health literacy. For instance, previous study points out that video-based methods facilitate a deeper learning experience, leading to greater retention and application of knowledge (Indrawati et al., 2023; Wahyudi & Raharjo, 2023).

The impact of video-based education on awareness is profound. Unlike traditional text-based or verbal methods, videos combine visual and auditory elements, which cater to diverse learning styles and make complex information more accessible. This multimodal approach is particularly effective for adolescents, who may engage more actively with content presented through multimedia. Videos also allow for the repetition of information, which reinforces learning and enhances long-term retention (Indrawati et al., 2023; Sulaeman et al., 2018).

In the context of this study, video-based education not only improved the adolescents' knowledge about Frambusia but also has the potential to enhance community-wide awareness. As these adolescents become more informed, they can act as agents of change, educating their peers and contributing to the broader goal of Frambusia eradication in the Puskesmas Tairi area. This underscores the importance of integrating video-based education into public health strategies, especially in regions where traditional methods might be less effective (Diaz, 2022; Noetel et al., 2021; Xiao et al., 2023).

Overall, the research highlights the critical role of health education in improving disease knowledge among adolescents. The success observed at Puskesmas Tairi suggests that similar multimedia approaches could be effective in other settings, particularly where Frambusia and other neglected diseases are prevalent. The study reinforces the need for engaging and innovative health education methods to address public health challenges effectively.

CONCLUSION

This study highlights the potential of video-based education in enhancing public health strategies, particularly in regions where traditional methods are less effective, and

underscores its role in improving disease awareness and contributing to community health goals like Frambusia eradication.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest related to this study.

REFERENCES

Destra, E., Anggraeni, N., Prakoso, A. B., Ashil, R. H., Jamaludin, J., & Juliastina, M. J. (2023). Skrining dan Edukasi Pencegahan Frambusia Puskesmas Kupu di SDN 01 Lawatan Kabupaten Tegal. Jurnal Pengabdian Kepada Masyarakat, 2(2), 1–8.

Diaz, P. (2022). Effectiveness of an Informational Video-Assisted Presentation on Primary Care Provider Awareness, Knowledge, and Screening of Genitourinary Syndrome of Menopause: A Quality Improvement Project.

Felicia, M., & Suhartono, B. (2021). FRAMBUSIA: INFEKSI TROPIS TERABAIKAN, DIAGNOSIS SERTA TATALAKSANANYA. Majalah Kedokteran UKI, 37(3), 88–95.

Indrawati, N., Aryastuti, N., Ekasari, F., & Muhani, N. (2023). The Effectiveness of IEC Using Booklet and Video Media on Diarrhea Prevention Efforts on the Knowledge of Posyandu Cadres. Jurnal Penelitian Pendidikan IPA, 9(10), 8873–8878.

Natasha, J., Menaldi, S. L. S. W., Irawan, Y., & Novianto, E. (2024). PERKEMBANGAN TERKINI MANIFESTASI KLINIS FRAMBUSIA. Media Dermato-Venereologica Indonesiana, 51(2), 75–81.

Noetel, M., Griffith, S., Delaney, O., Sanders, T., Parker, P., del Pozo Cruz, B., & Lonsdale, C. (2021). Video improves learning in higher education: A systematic review. Review of Educational Research, 91(2), 204–236.

Samidah, I., Murwati, M., Sojais, D. A. R., Suyanto, J., Pebriani, E., Sulastri, S., Royana, W., & Elpina, E. (2023). Edukasi Dan Pemeriksaan Penyakit Kusta Dan Frambusia Di RT 27 Dusun Besar Wilayah Kerja Puskesmas Jembatan Kecil. Jurnal Dehasen Untuk Negeri, 2(1), 79–84.

Sudirman, A. A., Modjo, D., Piola, W. S., & Ali, L. (2023). Skrining dan Edukasi Pencegahan Frambusia di SDN 10 Kwandang Kabupaten Gorontalo Utara. Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM), 6(1), 68–79.

Sulaeman, R., Purnamawati, D., Jafar, S. R., & Suiraoka, I. P. (2018). Progressive muscle relaxation using video aids reduces blood pressure of hypertension patients. International Journal of Health Sciences, 2(3), 33–42.

Tondok, S. B., Tafor, D., & Sulistiyani, S. (2022). Sosialisasi Kesehatan Tentang Frambusia dan Pencegahannya Dengan Penerapan PHBS Serta Deteksi Dini Frambusia pada Anak. Jurnal Inovasi Kesehatan Dan Pengabdian Masyarakat, 1(2), 71–74.

Van Steenbergen, G., van Veghel, D., van Lieshout, D., Sperwer, M., Ter Woorst, J., & Dekker, L. (2022). Effects of video-based patient education and consultation on unplanned health care utilization and early recovery after coronary artery bypass surgery (IMPROV-ED): randomized controlled trial. Journal of Medical Internet Research, 24(8), e37728.

ISSN: 2614-3488 (print); 2614-3496 (online) Vol.8 No.1. October 2024. Page.190-196

Wahyudi, G., & Raharjo, R. (2023). Positive Impact Of Health Education Through Video Media to the Improvevement of Adolescent Reproductive Health Knowledge. Jurnal Ners Dan Kebidanan (Journal of Ners and Midwifery), 10(3), 405–411.

Xiao, X., Wong, R. M., & Yang, W. (2023). Effectiveness of video-based health promotion: A systematic review and meta-analysis. Patient Education and Counseling, 108095.