



Education Through Video Animation to Improve HIV/AIDS Knowledge Among Ship's Crew

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Abstract: Education can be achieved by many tools, including animation video. Health education about HIV/AIDS might be effective in improving the knowledge of ship's crew who are at risk for Sexually Transmitted Infections. This study aimed to test the effectiveness of animation videos to improve HIV/AIDS knowledge. The sample of this study was derived from total sampling which was 25 crews. The knowledge was derived from several questions. The analysis was done using paired t-tests using SPSS. The result revealed that showing animation videos effectively improves HIV/AIDS knowledge. Animation video can be good educational technology to address and deliver information as well as good tools for the education sector. There is a need to collaborate with other sectors to successfully prevent the transmission of HIV/AIDS among ship's crew. In the education sector, using animation videos can be good tools that effectively deliver the information.

Keywords: Animation video; Education; HIV/AIDS; Ship's crew

Introduction

Animated health education videos have been demonstrated to be effective in various health education contexts. It has been found to enhance knowledge retention, improve understanding of health concepts, and increase engagement among viewers. Studies have shown the positive impact of animated videos on health topics (Aisah et al., 2022; Masitah et al., 2020; Wang et al., 2022; Wilandika et al., 2022; Yusuf et al., 2020). Utilizing animation videos as an educational tool has gained significant popularity in recent years due to its ability to engage learners and simplify complex concepts.

Concerning education, it is important too to improve HIV/AIDS knowledge. Improving knowledge about HIV/AIDS among ship crew members is crucial for prevention and effective management. It is crucial to emphasize the perception about Sexually Transmitted Infections (STIs) that might be occurred among domestic and foreign crew (Supriyadi et al., 2020). Another study in Makassar City focused on high-risk sexual behavior among ship crew (Sididi et al., 2020). Other studies

focused on crew health prevention and vaccination (Fanoy et al., 2021; Mouchtouri et al., 2019).

This study highlights the importance of proactive measures to protect crew members from infectious diseases, including HIV/AIDS. By synthesizing insights from these existing studies, it is evident that addressing HIV/AIDS knowledge among ship crew members requires a multifaceted approach that considers perception differences, high-risk behaviors, disease prevention strategies, and cross-border transmission awareness. Implementing targeted educational programs and preventive measures can play a significant role in enhancing HIV/AIDS awareness and promoting the health and well-being of crew members. This study aimed to examine the effectiveness of education through animation video to improve the HIV/AIDS knowledge among ship crews in Bitung Port.

Method

This study is cross-sectional that has been held in Samudra Bitung Port. The data collection was done in September 2023. This study used total sampling method

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to select 25 ship’s crew. The inclusion criteria including those were at the port at survey time and in healthy condition. The exclusion criteria including those aged < 17 years old and not willingness to be respondent. Respondent was asked the information about age and highest educational level.

The dependent variable in this study was HIV/AIDS knowledge. It was measured by several questions, including which system that attacked by HIV/AIDS and what HIV/AIDS is. Moreover, the human specimen that might be had HIV/AIDS (yes/no) and HIV/AIDS transmission (yes/no). The knowledge was then categorized into low, moderate, and high based on the total scores. The intervention given is showing the animation video about HIV/AIDS. The video was created by the authors with animation as the main interest that make this study different with existing one. Paired t-test was employed to test the correlation between pre and post intervention. This study obtained the SPSS software to test the univariate and bivariate. As human as an object, this study was approved for ethical clearance from

Result and Discussion

Results in this study was divided as univariate and bivariate. The univariate results were showed in table below with frequency and percentage. Table 1 below describes the information about knowledge before and after showing the animation video. It revealed that there is an increasing percentage of those who had high knowledge from 0% to 44%. At the same time, the percentage of those who had low knowledge was decreased from 64% to 16% after showing the animation video.

Table 1. Knowledge before and after intervention

Knowledge	Before n (%)	After n (%)
High	0 (0%)	11 (44%)
Moderate	9 (36%)	10 (40%)
Low	16 (64%)	4 (16%)
Total	25 (100%)	21(100%)

Table 2 below shows the result of bivariate analysis that tested using paired t-test. Comparing between before and after giving animation video, it revealed significant difference of mean knowledge with p-value 0.000.

Table 2. The bivariate analysis

Knowledge	t	p-value
Before		
After	-8.048	0.000

The findings from this study found improvement in HIV/AIDS knowledge among ship crews. It is supporting existing studies that animation videos can enhance learning outcomes among students (Mayer, 2008a, 2008b). Those study comparing animation video and static graphics and the results indicated that animation videos were more effective as educational tools. Moreover, visual learners, in particular, benefit from the visual representation of information in animation videos, which can aid in better understanding and retention of concepts. The dynamic and interactive nature of animation videos can capture attention and maintain their interest throughout the learning process (Sepp et al., 2019). This can lead to higher levels of motivation and participation in educational activities.

Animation videos have the potential to simplify complex health concepts, increase understanding, and engage viewers in a visually appealing manner. One study by (Houts et al., 2006) examined the impact of animation videos on health education in a pediatric setting. The results indicated that children who watched animated educational videos about health topics showed improved knowledge retention and comprehension compared to those who received traditional educational materials. This suggests that animation videos can be a valuable tool in health education, especially for younger audiences. Moreover, animation videos can be used to illustrate health-related processes and procedures in a clear and engaging way. For example, animations can demonstrate how certain diseases develop in the body, the effects of different medications, or proper techniques for administering first aid. By visualizing these concepts, viewers can better understand and remember the information presented (Mayer, 2008b). In addition, animation videos can be tailored to different cultural contexts and languages, making them accessible to diverse populations. This can help improve health literacy and promote health equity by ensuring that important health information reaches a wider audience (Kreuter et al., 2007). Overall, the use of animation videos in health education has the potential to enhance knowledge retention, improve understanding of health concepts, and engage viewers in a visually stimulating way. By leveraging the power of animation, health educators can create effective educational materials that promote health literacy and empower individuals to make informed decisions about their health and well-being.

Animated videos have been shown to be effective in increasing patient knowledge (Feeley et al., 2022; McNab & Skapetis, 2019), engaging youth in health education (Pate et al., 2020), and improving mental health and health-related behaviors during public health emergencies (Yang et al., 2021). They can also significantly increase knowledge and reduce barriers to

prevention (Aisah et al., 2022), as well as enhance health education by increasing knowledge on specific topics (Erika et al., 2023). Visual aids and video formats, including animations, are effective in-patient education (Munigala et al., 2022). Additionally, video animations have been shown to effectively communicate complex health information to audiences with different health literacy levels (Deliv et al., 2021). Educational videos have also been used successfully to increase community awareness about health issues (Maisrikrod et al., 2023).

Existing studies enhanced knowledge about HIV/AIDS through animation videos found supports the effectiveness of this approach (Safitri et al., 2021; Setiyawati & Meilani, 2020). Moreover, video-based interventions have a strong track record in improving health knowledge and promoting behavior change (Ren et al., 2022). By aligning educational content with established models like the Health Belief Model (Aisah et al., 2022), educators can effectively increase knowledge and reduce barriers to prevention. Additionally, animated videos have been shown to significantly increase knowledge on various topics (Erika et al., 2023; Masitah et al., 2020), highlighting their potential to convey complex information in an engaging and informative manner.

Research by (Supriyadi et al., 2020) highlights the importance of understanding perception differences on sexually transmitted infections between domestic and foreign ship crews, which can influence knowledge and attitudes toward HIV/AIDS. Moreover, the study by Ren et al. (2022) on a video-based intervention to improve AIDS prevention among elderly men underscores the effectiveness of video interventions in increasing health knowledge and promoting behavior change. Additionally, the research by (Budu et al., 2021) emphasizes the importance of disseminating comprehensive HIV/AIDS knowledge in communities to reduce misconceptions and stigma associated with the disease. By providing accurate information and addressing misconceptions, educational programs can play a crucial role in improving awareness and promoting positive attitudes towards HIV/AIDS among ship crew members.

HIV/AIDS prevalence among ship crew is a critical concern due to the unique challenges faced by seafarers. Research indicates that seafarers have been a focus of HIV/AIDS studies, with a review highlighting the importance of safe sex practices and addressing sexually transmitted infections (Richard et al., 2020). The global burden of HIV/AIDS remains significant, with high prevalence rates reported, emphasizing the need for continued monitoring and intervention efforts (Tian et al., 2023). In specific regions like Central Africa, HIV/AIDS prevalence rates among adults have been

notably high, underscoring the regional disparities in infection rates (Martial & Mubarik, 2021).

Studies have also explored coinfections and modeling dynamics related to HIV/AIDS, such as pneumonia coinfections and the impact of vaccination and treatment on transmission dynamics (Endashaw & Mekonnen, 2022; Teklu & Koya, 2022). Furthermore, research has highlighted the vulnerability of key populations, including men who have sex with men, sex workers, injection drug users, and prisoners, to higher HIV/AIDS prevalence rates (Montana et al., 2020). The association between CD4 levels, stress, and depression symptoms among individuals living with HIV/AIDS has also been investigated, pointing to the importance of addressing mental health aspects in HIV/AIDS care (Effendy et al., 2019).

Moreover, the challenges faced by seafarers during the COVID-19 pandemic have shed light on the mental health implications, including high rates of depression and anxiety due to prolonged stays onboard and limited interactions (Lin, 2024). Stigma surrounding HIV/AIDS remains a concern, with studies indicating the fear of stigma among sailors and the need for targeted interventions to address psychosocial aspects (Kolarova-Dimitrova, 2023).

This study found the effectiveness of intervening ship's crew with the animation video to improve HIV/AIDS knowledge.

Conclusion

This study revealed that showing animation videos about HIV/AIDS can improve HIV/AIDS knowledge among ship's crew. The findings of this study could not adjust to other places and time frames. Future studies could add more control variables and make the analysis advance to multivariate. The qualitative study might be good to enrich and deeper scraped the information.

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Author Contributions

Conceptualization, V.K. and S.C.M.; methodology, V.K.; software, S.C.M.; validation, V.K. and W.C.M.; formal analysis, S.C.M.; investigation, W.C.M.; resources, V.K.; data curation, V.K.; writing—original draft preparation, V.K.; writing—review and editing, V.K. and W.C.M.; visualization, V.K.; supervision, W.C.M.; project administration, S.C.M.; funding acquisition, V.K. All authors have read and agreed to the published last version of the manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.

References

- Aisah, S., Ismail, S., & Margawati, A. (2022). Animated Educational Video Using Health Belief Model on the Knowledge of Anemia Prevention Among Female Adolescents: An Intervention Study. *Malaysian Family Physician*. <https://doi.org/10.51866/oa.136>
- Budu, E., Seidu, A.-A., Armah-Ansah, E. K., Mohammed, A., Adu, C., & Ameyaw, E. K. (2021). What Has Comprehensive HIV/AIDS Knowledge Got to Do With HIV Testing Among Men in Kenya and Mozambique? Evidence From Demographic and Health Surveys. *Journal of Biosocial Science*. <https://doi.org/10.1017/s0021932021000237>
- Deliv, C., Putnam, E. L., Devane, D., Healy, P., Hall, A., Rosenbaum, S., & Toomey, E. (2021). *Development of a Video-Based Evidence Synthesis Knowledge Translation Resource: Applying a User-Centred Approach*. <https://doi.org/10.1101/2021.03.19.21253944>
- Effendy, E., Amin, M. M., Vega, L. d., & Utami, N. (2019). The Association Between CD-4 Level, Stress and Depression Symptoms Among People Living With HIV/AIDS. *Open Access Macedonian Journal of Medical Sciences*. <https://doi.org/10.3889/oamjms.2019.446>
- Endashaw, E. E., & Mekonnen, T. T. (2022). Modeling the Effect of Vaccination and Treatment on the Transmission Dynamics of Hepatitis B Virus and HIV/AIDS Coinfection. *Journal of Applied Mathematics*. <https://doi.org/10.1155/2022/5246762>
- Erika, ., Ramadhani, D. W., Riamah, ., Setianingsih, D., & Wahyuni, N. (2023). The Effect of Early Education Using Animation Video and Leaflets on Preparation of Complementary Feedings as Stunting Prevention. *Kne Medicine*. <https://doi.org/10.18502/kme.v3i1.12699>
- Fanoy, E., Ummels, A. E., Schokkenbroek, V., Dijk, B. v., Wiegman, S., Veenstra, T., Eijk, A. A. van der, Sikkema, R. S., & Raad, A. d. (2021). Outbreak of COVID-19 on an Industrial Ship. *International Maritime Health*. <https://doi.org/10.5603/imh.2021.0016>
- Feeley, T. H., Keller, M., & Kayler, L. K. (2022). Using Animated Videos to Increase Patient Knowledge: A Meta-Analytic Review. *Health Education & Behavior*. <https://doi.org/10.1177/10901981221116791>
- Houts, P. S., Doak, C. C., Doak, L. G., & Loscalzo, M. J. (2006). The role of pictures in improving health communication: a review of research on attention, comprehension, recall, and adherence. *Patient Education and Counseling*, 61(2), 173–190.
- Kolarova-Dimitrova, M. (2023). Sailors' Fear of the Stigma of HIV/AIDS. *Hiv Infection and Immunosuppressive Disorders*. <https://doi.org/10.22328/2077-9828-2022-14-4-36-40>
- Kreuter, M. W., Green, M. C., Cappella, J. N., Slater, M. D., Wise, M. E., Storey, D., Clark, E. M., O'Keefe, D. J., Erwin, D. O., & Holmes, K. (2007). Narrative communication in cancer prevention and control: A framework to guide research and application. *Annals of Behavioral Medicine*, 33, 221–235.
- Lin, M. S. (2024). Identifying Critical Challenges and Government's Responses for Filipino Seafarers During The COVID-19 Pandemic. *Maritime Business Review*. <https://doi.org/10.1108/mabr-02-2023-0019>
- Maisrikrod, S., Currie, M., Govan, B., Norton, R., Currie, B. J., Ketheesan, N., & Mayo, M. (2023). Design and Development of an Internationally Applicable Educational Video to Increase Community Awareness in Regions With High Prevalence of Melioidosis and Diabetes. *American Journal of Tropical Medicine and Hygiene*. <https://doi.org/10.4269/ajtmh.22-0024>
- Martial, N. T., & Mubarik, S. (2021). The Trend of HIV/AIDS Incidence and Risks Associated With Age, Period, and Birth Cohort in Four Central African Countries. *International Journal of Environmental Research and Public Health*. <https://doi.org/10.3390/ijerph18052564>
- Masitah, R., Pamungkasari, E. P., & Suminah, S. (2020). The Effectiveness of Animation Video to Increase Adolescents' Nutritional Knowledge. *Media Gizi Indonesia*. <https://doi.org/10.20473/mgi.v15i3.199-204>
- Mayer, R. E. (2008a). Applying the science of learning: evidence-based principles for the design of multimedia instruction. *American Psychologist*, 63(8), 760.
- Mayer, R. E. (2008b). *based principles for learning with animation*. Cambridge University Press New York, NY.
- McNab, M., & Skapetis, T. (2019). Why Video Health Education Messages Should Be Considered for All Dental Waiting Rooms. *Plos One*. <https://doi.org/10.1371/journal.pone.0219506>
- Montana, J. F., Ferreira, G. R. O. N., Cunha, C. L. F., Queiroz, A. A. R. de, Fernandes, W. A. A., Polaro, S. H. I., Couto, D. C. C., Gir, E., Reis, R. K., Sorensen, W., & Botelho, E. P. (2020). *The HIV Epidemic in Colombia: Spatial and Temporal Trends*

- Analysis*. <https://doi.org/10.21203/rs.3.rs-30150/v1>
- Mouchtouri, V. A., Lewis, H. C., & Hadjichristodoulou, C. (2019). A Systematic Review for Vaccine-Preventable Diseases on Ships: Evidence for Cross-Border Transmission and for Pre-Employment Immunization Need. *International Journal of Environmental Research and Public Health*. <https://doi.org/10.3390/ijerph16152713>
- Munigala, S., Gardner, T. B., O'Reilly, E. M., Castillo, C. F., Ko, A. H., Pleskow, D. K., Vollmer, C. M., Searle, N. A., Bakelman, D. E., Holt, J., & Gelrud, A. (2022). Helping Patients Understand Pancreatic Cancer Using Animated Pancreas Patient Education With Visual Formats of Learning. *Pancreas*. <https://doi.org/10.1097/mpa.0000000000002087>
- Pate, J. W., Heathcote, L. C., Simons, L. E., Leake, H. B., & Moseley, G. L. (2020). Creating Online Animated Videos to Reach and Engage Youth: Lessons Learned From Pain Science Education and a Call to Action. *Paediatric and Neonatal Pain*. <https://doi.org/10.1002/pne2.12015>
- Ren, J., Li, M., Luo, Y., Zheng, Y., Tang, J., Wang, Y., & Chen, Y. (2022). Sunset Without AIDS: Protocol for a Randomized Controlled Trial of a Brief Video-Based Intervention to Improve the Ability of AIDS Prevention in Elderly Men. *Trials*. <https://doi.org/10.1186/s13063-022-06069-3>
- Richard, P., Pougnet, L., Dewitte, J.-D., Rousseau, C., Gourrier, G., Lucas, D., & Loddé, B. (2020). Sexually Transmitted Infections in Seafarers: 2020's Perspectives Based on a Literature Review From 2000–2020. *International Maritime Health*. <https://doi.org/10.5603/imh.2020.0030>
- Safitri, D., Lestari, I., Maksam, A., Ibrahim, N., Marini, A., Zahari, M., & Iskandar, R. (2021). Web-Based Animation Video for Student Environmental Education at Elementary Schools. *International Journal of Interactive Mobile Technologies (Ijim)*. <https://doi.org/10.3991/ijim.v15i11.22023>
- Sepp, S., Howard, S. J., Tindall-Ford, S., Agostinho, S., & Paas, F. (2019). Cognitive load theory and human movement: Towards an integrated model of working memory. *Educational Psychology Review*, 31, 293–317.
- Setiyawati, N., & Meilani, N. (2020). The Effectiveness of Videos and Pocket Books on the Level of Knowledge and Attitudes Towards Stigma People With HIV/AIDS. *Journal of Education and Learning (Edulearn)*. <https://doi.org/10.11591/edulearn.v14i4.15751>
- Sididi, M., Rahman, R., & Yusriani, Y. (2020). High Risk Behaviour Tertular HIV/AIDS Pada Anak Buah Kapal. *Jurnal Kesmas Asclepius*. <https://doi.org/10.31539/jka.v2i2.1470>
- Supriyadi, D., Wahono, T., Pudjiati, S. R., & Probandari, A. (2020). *Perception Difference on Sexually Transmitted Infections Between Domestic and Foreign Ship Crews (A Study at Merak Port of Banten)*. <https://doi.org/10.2991/ahsr.k.200311.036>
- Teklu, S. W., & Koya, P. R. (2022). HIV/AIDS-Pneumonia Codynamics Model Analysis With Vaccination and Treatment. *Computational and Mathematical Methods in Medicine*. <https://doi.org/10.1155/2022/3105734>
- Tian, X., Chen, J., Wang, X., Xie, Y., Zhang, X., Han, D., Fu, H., Yin, W., & Wu, N. (2023). Global, Regional, and National HIV/AIDS Disease Burden Levels and Trends in 1990–2019: A Systematic Analysis for the Global Burden of Disease 2019 Study. *Frontiers in Public Health*. <https://doi.org/10.3389/fpubh.2023.1068664>
- Wang, Y., Huang, X., & Liu, Z. (2022). The Effect of Preoperative Health Education, Delivered as Animation Videos, on Postoperative Anxiety and Pain in Femoral Fractures. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2022.881799>
- Wilandika, A., Handayani, F., & Yusof, S. (2022). Self-Efficacy in Prevention of COVID-19 in Teenagers Through Islamic-Based Animation Videos. *Khazanah Theologia*. <https://doi.org/10.15575/kt.v4i3.21624>
- Yang, Q., Wu, Z., Xie, Y., Xiao, X., Wu, J., Sang, T., Zhang, K., Song, H., Wu, X., & Xu, X. (2021). The Impact of Health Education Videos on General Public's Mental Health and Behavior During COVID-19. *Global Health Research and Policy*. <https://doi.org/10.1186/s41256-021-00211-5>
- Yusuf, M., Zuhrawardi, Z., & Wardani, E. (2020). The Effectiveness of Animated Video as Learning Media Towards the Perception of Healthy Snacks on Elementary School Students in Indonesia. *The International Journal of Tropical Veterinary and Biomedical Research*. <https://doi.org/10.21157/ijtvbr.v5i2.20483>