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Comparative Study of Learning Media: Video Animation and E-Book in Education on Drugs Abuse in Students

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ABSTRACT

Aims The problem of drugs is still urgent and complex, especially in Indonesia, and even in the last decade, it has become increasingly widespread. This situation can be seen in the significant increase in drug abusers or addicts, drug crime cases with various patterns, and the massive syndicate network. This study aimed to examine the effectiveness of educational media, animated videos, and e-books on adolescents' knowledge in managing drug abuse.

Materials & Methods This quasi-experimental study with a two-group pre-test and post-test design was conducted in SMPN 5 Kendari City in 2021. Forty eight samples were selected among 8th-grade students using proportional random sampling method and divided into the video animation group (n=24) and the e-book group (n=24). Students' knowledge about drug abuse was assessed before and after the intervention turough a questionare. Collected data were analyzed using ANCOVA.

Findings The mean score of knowledge, before and after education with animated video media and e-books increased. The mean difference of knowledge score before and after the education with animated video media was 1.3 (p=0.001), and before and after education with e-book media was 1.25 (p=0.0001).

Conclusion Education with animated video media and e-books effectively increases adolescent knowledge in managing drug abuse.

Keywords Education; Knowledge; Adolescent; Drug Abuse

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Introduction

Drug abuse has become an epidemic almost all over the world. It is responsible for the death of millions of people, and damage to family relationships, shaking national security, stability, and resilience [1–3]. Narcotics crime is a transnational, organized, and serious crime that affects all levels of society, causing enormous losses, especially in terms of health, social economy, and security. Another extremely worrying consequence is the future loss of a nation's generation (lost gener-ation) [4].

In Indonesia, the threat of drug abuse is quite severe and concerning. It can be seen from the increasing prevalence of drug abuse, including the type and number of dangerous drugs abused. Of approximately 4,924 cases of drug abuse, of all cases that were revealed, there were 4,561 men and 363 women [5]. The most concerning fact is the age of first use of substances or drugs, which is getting younger [6, 7].

The increasing number of users in Indonesia causes an increased interest in the operation of drug syndicate networks in Indonesia, especially at relatively high prices. The number of drug abuse attempts increases year by year. Thus, new violations arise, and abusers regularly use drugs, then become addicted [8–10].

Mapping data for the province with the highest number of drug users is Jakarta, which has a prevalence of 7.0%. The prevalence of drug abuse is 4.3% in Riau Archipelago Province, 2.5% in West Java, 2.8% in Yogyakarta, 3.0% in North Sumatra, 2.1% in Riau, and 3.1% in East Kalimantan [11]. Drug abuse in Southeast Sulawesi Province is relatively high. The Directorate of Narcotics Investigation (Ditresnarkoba) uncovered 438 cases of drug trafficking with 529 suspects in 2022 [12].

The data shows that the highest number of drug users are teenagers. The 2018 World Drugs Reports published by the United Nations Office on Drugs and Crime (UNODC) stated that as many as 275 million people in the world, or 5.6% of the world's population (age 15-64 years), have used drugs. Meanwhile, in Indonesia, BNN, as the focal point in the field of Prevention and Eradication of Drug Abuse and Illicit Trafficking (P4GN), reported drug abuse rates of 3,376,115 people aged 10-59 years in 2017 [13].

Adolescence is a developmental phase between childhood and adulthood. A person's development in childhood and adolescence will shape the person's self-development in adulthood. That is why their future is bleak or even destroyed when drugs ruin childhood and youth. During adolescence, the desire to try, follow trends and lifestyles, and have fun is enormous. Even though all of these tendencies are normal, they can facilitate the motivation of adolescents to abuse substances [14, 15]. Drug use among adolescents is higher than that of adults for some types of drugs [9, 10].

Considering the ever-increasing number of students exposed to drug abuse, this issue should be seriously taken because it can damage the morals of the nation. From a health standpoint, the drug effects include increased heart rate and disturbances in the heart, brain, and other organs. In addition, from a psychological perspective, it can cause mental depression, anxiety, and loss of consciousness [16, 17]. In social life, the impacts that can occur include damage to relationships with friends and family, changes in attitudes and personalities in the community, to a decrease in the attitude of responsibility and discipline in everyday life [18, 19].

Reasonable drug control is to make prevention efforts such as early detection through counseling to increase awareness through information strategies and drug prevention education using learning media such as animated videos and e-books [20–22].

This study aimed to investigate the effectiveness of education using animated video learning media and e-books on the knowledge of young students in managing drug abuse at SMPN 5 Kendari City. This research can be an essential step in eradicating drugs because one of the reasons for drug abuse is a lack of knowledge.

Materials and Methods

Trial design

This research is a quantitative study using a quasi-experimental research design with two groups, pre-post-test.

Participants

This research was conducted at SMPN 5 Kendari City from May to June 2021. The study population was all 8th-grade students, with a sample of 48 respondents who were divided into the video animation group (n=24) and the e-book group (n=24). Samples were randomly selected among students who met inclusion criteria such as being healthy at the time of the study, grades XII and XIII, and having an android. In contrast, students who did not have an android were excluded from this study.

Sample size

The number of samples involved was 48 participants who were randomly selected from the population. The sample size was calculated using the Slovin formula at a precision (d) = 0.05. The total population was 55 students.

Data collection

The dependent variable in the study was students' knowledge of drugs, while the independent variable was education using animated video learning media and e-books. The knowledge was assessed using 15 items with a range of values between 1-15 and had objective criteria. A good category was given if the score

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was 12-15 (76-100%), moderate if the score was 9-11 (56-75%), and poor if the answer score was 1-8 (0-55%).

Research data was collected in the field involving two research assistants who had previously been trained in data collection procedures. This enumerator had never previously met with research participants to maintain the objectivity of the answers.

The questionnaire used was the Guttman scale. The Guttman scale has an important feature where it is a cumulative scale and only measures one dimension of a multidimensional variable; therefore, this scale is dimensionless. The data obtained are interval data or dichotomous ratios (two alternatives) [23].

Educational content

Educational materials in the learning media used included aspects of drug law, forms and types of drugs, targets of drug dealers, short-term and long-term effects of drug abuse, the impact of drugs on student achievement, and how to prevent them. All materials were written in detail and accompanied by pictures.

Outcomes

This study produced a description of students' knowledge of drugs before and after education using animated video learning media and e-books.

Statistical analysis

Data were presented as numbers and percentages for categorical variables. Continuous data were expressed as mean ± Standard Deviation (SD) or median with Interquartile Range (IQR). The data normality was examined using the Kolmogorov-Smirnov test, and the results showed that the data is normally distributed. The data were analyzed using bivariate Analysis of covariance (ANCOVA). The ANCOVA was used to determine the effect of the video animation and e-book intervention on knowledge. P-values <0.05 were considered significant. Statistical analysis was performed using the SPSS 16.0 application.

Findings

Most of the respondents were 12-13 years old (93.8%), and the majority were women (54.2%). The frequency distribution of the respondents' characteristics is presented in Table 1.

In the pre-test, 54.2% of the animated video media group was in the poor category concerning knowledge, which decreased to 4.2% after the intervention. Also, 25% of the e-book media group was in the poor category in the pre-test, which decreased to 12.5% in the post-test (Table 2).

There was a significant increase in students' knowledge after education using animated video media and after education using e-book media (Table 3).

Table 1) Frequency distribution of the respondents' characteristics (n=48)

Characteristics	Number	Percentage
Age		
12-13 years	45	93.8
14-15 years	3	6.2
Gender		
Male	22	45.8
Female	26	54.2

Table 2) Frequency distribution of knowledge levels in students before and after the intervention (n=24 per group)

Knowledge	Animated video media group	E-book media group
Poor		
Pre-test	13 (54.2%)	6 (25%)
Post-test	1 (4.2%)	3 (12.5%)
Sufficient		
Pre-test	9 (37.5%)	9 (37.5%)
Post-test	14 (58.3%)	6 (25%)
Good		
Pre-test	2 (8.3%)	9 (37.5%)
Post-test	9 (37.5%)	15 (62.5%)

Table 3) Comparing the mean knowledge score of students before and after the intervention (n=24 per group)

Knowledge	Mean±SD	Median	P-value
Animated video media group			
Pre-test	10.08±2.51	11	0.001
Post-test	11.67±2.14	12	
E-book media group			
Pre-test	9.17±2.03	9.5	0.0001
Post-test	11.37±1.88	11	

Discussion

One of the factors that cause drug abuse among adolescents is a lack of understanding of the dangers of drugs. Education is a form of intervention for adolescents to increase their understanding of drug abuse prevention.

The study results showed that animated video media is more effective in increasing knowledge about drugs. The author argues that significant differences in knowledge about drug abuse through animation media directly cause respondents to have material objects that can be observed, primarily through the five senses of hearing and sight. When the respondent pays attention to information that the researcher provides through animated video media, the cognitive knowledge of the respondent increases. It has an impact on the ability of respondents to answer the questions on the questionnaire properly.

Media that can provide explanations, from abstract lessons to concrete ones that are visualized in animated images, will be more meaningful and exciting, easier to accept, easier to understand, and more able to motivate students. The use of animation and special effects is

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excellent and effective for attracting students' attention in learning situations both at the surface and at the end of a series of lessons [24, 25].

The research results show that the mean score of knowledge before and after education with animated video media and e-books increases. The mean disparity in knowledge before and after education with video Animation media was 1.59. The difference in the mean score of knowledge before and after education with e-book media was 2.2. It indicates that animated video media is more effective in increasing adolescent knowledge about drugs, as seen from the difference in the mean score of using animated video media, which is higher than e-books.

According to the author's assumption, animated videos are more effective in increasing youth's knowledge about drugs because animated videos have messages accompanied by moving pictures; thus, they are not boring to follow or to listen. Video media is considered adequate because it can lead to teaching that attracts more attention with vital images, and it is easier to understand, so that it can foster understanding and stimulate students to receive the messages [21].

Hartati et al. [26] showed a significant effect of video animation on the level of knowledge and attitudes of young women in the treatment group and control group. Baskoro's research [27] reported an effect of health education with audio-visual media on knowledge of drug abuse prevention. This finding also corroborates the research of Jackson et al. [28], which reported that media/marketing influences adolescent and young adult substance abuse.

Providing proper health education is like using audio-visual media. It is hoped that adolescents can apply drug abuse prevention measures obtained from counseling to help prevent drug abuse properly.

This research shows the importance of increasing technology-based media literacy to increase adolescents' understanding of drug abuse prevention. Providing material, especially on the impact of drugs on the bleak future of adolescents, is very effective in suppressing adolescent intentions to use drugs.

This assessment has several limitations that should be emphasized. First, the sample number is minimal, so caution may be needed to generalize these results. Second, the educational content was not previously discussed with linguists and drug experts at a young age. It allows further misunderstanding of the substance of education. However, when providing education, participants received assistance and were encouraged to ask questions about things not understood in educational content. Future studies should involve a larger sample size, involving adolescent students from all grades and even between schools. Comparing current learning media with social media campaigns is also essential, considering that there are more social media users than teenagers of school age.

Conclusion

Providing education based on animated videos and e-books improves students' knowledge. Schools can use animated videos and e-books as learning media, especially in increasing youth's understanding of drug prevention.

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