THE EFFECTIVENESS OF POSTER MEDIA ON KNOWLEDGE AND SMOKING BEHAVIOR AMONG HIGH SCHOOL STUDENTS IN BANDA ACEH

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ABSTRACT

Smoking behavior in adolescents is still very concerning as it becomes a detrimental habit that is considered common by several teenagers around the world. Health education is an effort to support behavior changes in adolescents, including in changing their smoking behavior. This study aimed to determine the effectiveness of poster media on increasing knowledge and decreasing smoking behavior among high school students in Banda Aceh. This quantitative study used a quasi-experimental design with one group pre-test and post-test design involving 106 respondents. The intervention program to provide health education using the poster as a media was carried out for 3 weeks. The effect of the intervention on participants was assessed using a questionnaire and processed using the SPSS program. The results showed that the use of posters was increasing the mean score of students' knowledge about the dangers of smoking (pre-test x̅ = 15.57 and post-test x̅ = 16.80, p-value = 0.000) and decreased behavior bad behavior by 68.9%. About 28.3% bad behavior and 31.1% good behavior were changing into 71.7% good behavior. This means that there is a difference between the mean pre-test and post-test on smoking behavior (the mean pre-test is 27.226 and the mean post-test is 33.679), with p-value = 0.000 < α = 0.05. This indicates that health promotion using posters is effective and can be applied to increase knowledge and decrease smoking behavior in high school students of Banda Aceh.

Keywords: Health Education, Poster, Knowledge, Smoking Behavior

ABSTRAK

Perilaku merokok pada remaja saat ini masih sangat memprihatinkan, menjadi kebiasaan yang dianggap lumrah oleh sebagian remaja di dunia. Pendidikan kesehatan adalah proses perubahan perilaku pada remaja sehingga mereka tahu dan mampu untuk mengubah perilaku termasuk perilaku merokok mereka. Penelitian ini bertujuan untuk mengetahui efektivitas media poster terhadap peningkatan pengetahuan dan penurunan perilaku merokok pada siswa usia Sekolah Menengah Atas Negeri di wilayah Kota Banda Aceh. Penelitian kuantitatif ini menggunakan desain quasi-experiment dengan rancangan one group pre-test and post-test design melibatkan 106 responden. Program intervensi pemberian pendidikan kesehatan menggunakan media poster dilakukan selama 3 minggu. Dampak program intervensi terhadap partisipan dikaji dengan kuesioner dan diolah menggunakan program SPSS. Hasil penelitian menunjukkan bahwa media poster meningkatkan rata-rata pengetahuan siswa tentang bahaya merokok pre-test x̅ = 15.57 dan post-test x̅ = 16.80, p-value = 0.000 dan menurunkan perilaku dengan perilaku buruk 68,9% menjadi perilaku buruk 28,3% dan perilaku baik 31,1% menjadi perilaku baik 71,7%. Nilai rata-rata pre-test adalah 27,226 dan nilai rata-rata post-test adalah 33,679 maka dapat dinyatakan bahwa terdapat perbedaan antara nilai rata-rata pre-test dan post-test perilaku merokok yaitu 6,452 dengan p-value = 0,000 < α = 0,05 merokok siswa di Sekolah Menengah Atas Kota Banda Aceh. Hal ini menunjukkan bahwa promosi kesehatan menggunakan media poster berpengaruh secara efektif terhadap siswa dan dapat diterapkan untuk meningkatkan pengetahuan dan penurunan perilaku merokok pada siswa Sekolah Menengah Atas di Kota Banda Aceh.

Kata Kunci: Pendidikan Kesehatan, Poster, Pengetahuan, Perilaku Merokok

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INTRODUCTION

Smoking can have adverse effects and fatal consequences on life. World Health Organization (WHO) estimated that half the deaths in Asia are due to the high increase in tobacco use. The death rate from smoking in developing countries has almost quadrupled. In 2000, the number of deaths related to smoking was 2.1 million and in 2030 it is estimated to increase to 6.4 million. In developed countries, death due to smoking has decreased, from 2.8 million in 2000 to 1.6 million in 2030 (World Health Organization, 2020).

Data from the Global Youth Tobacco Survey in 2014 mentioned that 20% of adolescents aged 16-19 were active smokers in Indonesia. About 36% of these teenagers were male, while 4% were female students (World Health Organization, 2014). Smoking habits are still widely practiced in society even though most people know the detrimental effects and dangers of smoking. Moreover, this phenomenon occurs not only in adults but also has spread to adolescents and even school students.

The proportion of smoking among adolescents is also high in Aceh. The study results by Tahlil, Woodman, Coveney, & Ward (2013) on 477 students in 6 junior high schools in Aceh revealed that 51% of students were smokers and 7.1% students who wished to smoke in the future.

The fact that there are students who have smoked is certainly very alarming. High school students are very young and they are the nation’s future. If from an early age adolescents have been poisoned by cigarettes, this will affect their health not only physically but also mentally (Dharmastuti, 2017). Also, teens who are addicted to smoking from an early age will be more difficult to stop. Therefore, it is necessary to make serious efforts to stop the smoking habit in students who have previously smoked and prevent smoking in students who have never smoked (Ardini & Hendriani, 2012).

A particular effort to control and increase students’ knowledge about the dangers of smoking and tackling smoking behavior is through health education. One of the media that is often used in health education is a poster. Several studies have stated the effectiveness of poster media. The research by Young, Wong, & Cheung, (2014) revealed that health education using posters can significantly increase students’ knowledge of dental and oral health. This is in line with research conducted in Iran, which indicated that there was a significant 83% increase in knowledge of the teachers who received health education through posters (Ghadimi, Seraj, Keshavarz, Shamshiri, & Abiri, 2014). Meanwhile, study conducted by Brinker et al (2016) in Germany, stated that posters can affect the decline in smoking behavior in adolescents. In line with that, this study aims to determine the effectiveness of using poster media on increasing knowledge and decreasing smoking behavior among High School students in Banda Aceh.
METHOD

Research Design

This research is a quantitative study with a quasi-experimental design using a one group pre-test post-test design.

Tabel 1. Research Design

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Treatment</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>O₁</td>
<td>X</td>
<td>O₂</td>
</tr>
</tbody>
</table>

Information:

O₁: Pre-test assessment before the intervention to measure smoking knowledge and behavior of the intervention group

O₂: Post-test evaluation was carried out after the students receive the intervention for 3 weeks to assess smoking knowledge and behavior of the intervention group

X: The intervention/effectiveness of posters in increasing knowledge and handling smoking behavior of high school students.

The steps in this research were:
1. Determining the intervention group in accordance with the inclusion criteria
2. Giving a pre-test to the intervention group
3. Providing images of poster media to the intervention group using the online system through the WhatsApp application 3 times in 3 weeks with a time interval of 7 days.
4. Giving a post-test to the intervention group using the online system through the Google Form application to measure students' knowledge and smoking behavior.
5. Performing data analysis.

Population and Sample

The population of this study was all students of class X and XI in one of the Public Senior High Schools in Banda Aceh, with 473 students in total. The purposive sampling technique was used based on the characteristics of the population in accordance with the objectives (Arikunto, 2010). The sample was 96 respondents and using a 95% degree of confidence to avoid dropping out. Therefore, the sample was added for 10% to 106 respondents.

Data Collection Tools

The data collection tool used was in a form adopted and modified from the Global Youth Tobacco Survey (GYTS) questionnaire (World Health Organization, 2014). This questionnaire consisted of two parts, part A and B. The research was conducted from 10 June 2020 to 28 August 2020 at Senior High School in Banda Aceh. The intervention was carried out online by sending poster images via a WhatsApp group created by researcher. The poster images were sent to the WhatsApp group 3 times in 3 weeks with an interval of 7 days. The poster used was adopted from the Ministry of Health of Republic of Indonesia.

In the early stages of the intervention, the researcher sent informed consent via WhatsApp group. After the respondent agreed to participate in this research, the researcher immediately directed the respondent to do a pre-test via google form. Then, in the first week the researcher sent a poster image related to knowledge about smoking. In the second week, the researcher sent a poster image related to smoking behavior and in the third week the researcher sent a poster image about the effects caused by smoking and also smoking prevention methods. Finally, the researcher conducted a post-test using google form.

Validity and Reliability
Validity and reliability tests were carried out on 30 students at a high school in Banda Aceh with Pearson's product moment correlation (r) indicating that the correlation coefficient values ranged from 0.60 to 0.87. The results of the reliability test on the knowledge statements showed Cronbach's alpha value of 0.88> 0.7 for all statement items, so that it was concluded that the tool is reliable. Similarly, the smoking behavior statements Cronbach's alpha value was 0.90> 0.7 for all statement items, so it is reliable.

**Data analysis**

This descriptive analysis aimed to describe the description of the demographic data of respondents in the form of age, religion, ethnicity, gender, and class which are presented in frequency distribution and percentage. While the sub-variables of knowledge and smoking behavior were presented in the form of the mean value.

The normality test used the Kolmogorov-Smirnov test and the results for knowledge sub-variable obtained p value = 0.415 (≥ 0.05), indicating that the data was normally distributed. The smoking behavior p value = 0.867 (≥ 0.05), which means that smoking behavior data was also normally distributed.

Inferential analysis was performed using statistical paired sample t-test to assess differences in knowledge and smoking behavior in the provision of poster media before and after. Then the data is processed using the help of the SPSS 21.0 for windows computer program.

**RESULTS**

**Respondent Characteristics**

The characteristics of respondents consist of class, gender, age, ethnicity and religion.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Distribution of Student Demographic Based on Respondent Characteristics (n = 106)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Demographics</td>
</tr>
<tr>
<td>1.</td>
<td>Class/Year</td>
</tr>
<tr>
<td>a.</td>
<td>Class XI</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Sex</td>
</tr>
<tr>
<td>a.</td>
<td>Male</td>
</tr>
<tr>
<td>b.</td>
<td>Female</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Age (years)</td>
</tr>
<tr>
<td>a.</td>
<td>16</td>
</tr>
<tr>
<td>b.</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Ethnic group</td>
</tr>
<tr>
<td>a.</td>
<td>Aceh</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Religion</td>
</tr>
<tr>
<td>a.</td>
<td>Islam</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>
Table 2 shows that all students in this study were class XI students and 106 students (100%) are Acehnese and Muslim (100%). The majority of these respondents were male (56.6%) and aged 16 years (84.9%).

Result of Paired T-Test

Table 3
Distribution of Students’ Knowledge Difference Test Before and After Receiving Poster Media Intervention in Senior High School Banda Aceh (N = 106)

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean</th>
<th>SD</th>
<th>Mean Difference</th>
<th>95% CI Difference</th>
<th>t-Test</th>
<th>df</th>
<th>Sig.(2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-test</td>
<td>16,801</td>
<td>2,067</td>
<td>1,235</td>
<td>1,387, 1,084</td>
<td>16,159</td>
<td>105</td>
<td>0.000</td>
</tr>
<tr>
<td>Pre-test</td>
<td>15,566</td>
<td>2,370</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 shows that there is a difference in the mean score of students’ pre-test (15.57) and post-test (16.80) related to knowledge about smoking after respondents were giving media posters with a mean difference of 1.24. The result of the t-test = 16.159 > t-table = 1.659 with the p-value = 0.000 (<α = 0.05).

Table 4
Distribution of Students’ Smoking Behavior Different Test Before and After Receiving Poster Media Intervention in Senior High School Banda Aceh (N = 106)

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean</th>
<th>SD</th>
<th>Mean Difference</th>
<th>95% CI Difference</th>
<th>t-Test</th>
<th>df</th>
<th>Sig.(2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-test</td>
<td>33,679</td>
<td>8,655</td>
<td>6,452</td>
<td>7,612, 5,292</td>
<td>11,031</td>
<td>105</td>
<td>0.000</td>
</tr>
<tr>
<td>Pre-test</td>
<td>27,226</td>
<td>4,909</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 indicates that there was a difference in the mean score of pre-test (27.23) and post-test (33.68) of students' smoking behavior after receiving posters with a mean difference of 6.45. The results of the t-test = 11.03 > t-table = 1.66 and p-value = 0.000 (<α = 0.05).

DISCUSSION

The results of the data analysis show that after being given health promotion about smoking using poster media to adolescents at Public Senior High School in Banda Aceh, the average value of knowledge and smoking behavior among adolescents has increased.

The use of posters as a medium to distribute information about cigarettes was expected to help increase adolescent knowledge about smoking. It is expected that the increase in knowledge about the dangers of smoking can decrease adolescent smoking behavior. This study
result shows an increase in student knowledge after being given information through poster, with the mean of pre-test was 15.566 and the mean post-test was 16.801. There is a difference between the mean pre-test and post-test of students' knowledge before and after receiving the poster media (1,235 with p-value = 0.000 <α = 0.05). This indicates that poster is effective in increasing adolescent knowledge about smoking.

This study results are in line with the research by Akmal, Rahmatika, & Fitria (2015) about "The program in providing information about the dangers of smoking through leaflets, presentations and posters", showed an increase in respondent knowledge after being given information about the dangers of smoking. Before the intervention, the average knowledge of students was 1.94, but after obtaining information through leaflet, presentation and poster, the average student knowledge increased to 3.69 in the first post-test and 4.17 in the second post-test.

There is an increase in adolescent knowledge about cigarettes after being given information using poster because posters as information media are easier to remember and understand because of the simplicity of the messages conveyed accompanied by attractive visuals that help teenagers to easily analyse and absorb the information the researcher wants to convey. Posters are a combination of clear and attractive visual images aimed to attract attention. Moreover, posters have the power to be easily understood by the viewer because they emphasize the power of message, visuals and colors.

In the adolescent group, smoking behavior is one of the habits commonly encountered in everyday life. There are many reasons why teenagers smoke. One of them is that smoking is perceived to have pleasuring and calming effects on smoker. But on in fact, the smoking behavior can have a negative impact not only for the smoker himself, but also for the people around him.

Besides the perception that smoking gives enjoyment and calmness, there are several other reasons that influence smoking behavior on adolescents, including because of a recognition from their peer group, or anticipatory beliefs to eliminate disappointment (relieving beliefs) and consider that smoking is not violating the norms (permission beliefs) / positive) (Ragan, 2016). Besides that, smoking activity by teenagers is also assumed as an effort to find self-identity. This is similar to smoking activities showed by adolescents in front of other people, especially in front of their peers to get recognition from their friends.

The reason of using posters in health promotion and education is that posters can illustrate the message the messenger wants to deliver through images that can attract viewer attention, in which the content is the persuasion that can influence people, contains motivation, ideas, or certain events (Akmal et al., 2015; Khuzaimah, 2019). This can be inferred from the results of this study that showing a decrease of smoking behavior in adolescents after being given information using poster, from 68.9% bad behavior to 28.3% bad behavior and 31.1% good behavior to good behavior 71.7%. There is a difference between the mean pre-test and post-test of student smoking behavior (the pre-test mean was 27.226 and the post-test mean was 33.679, 6.452 with p-value = 0.000 <α = 0.05). Therefore, the poster media is effective in reducing smoking behavior in adolescents.

This effect can occur because information related to the impact that smoking behavior can have on adolescent groups through posters can
be more easily accepted and understood by teenagers. This is one of the benefits of using poster as an information media to deliver messages visually. The posters are easily understood and allow adolescents to read and look back at the information imaged on posters. As the consequences, the posters have a significant impact on changes in adolescents smoking behavior.

This study result is supported by Pratama & Darmansyah (2015) research regarding the relationship between exposures to cigarette advertisements and smoking behavior in adolescents in Public Senior High School 23 in Bandung. The results indicated a relationship between exposure to cigarette advertisements and smoking behavior based on statistical tests (chi square with the p-value obtained is 0.001). Similar to the study by (2019) on the effectiveness of hand lettering as a media to promote youth health regarding the dangers of smoking, which shows the effectiveness of hand lettering in improving knowledge and changing behavior of adolescents before and after being given treatment (with p-value obtained based on the statistical test results is 0.001).

CONCLUSION

Based on the study results conducted on 106 students at one of the Senior High School in Banda Aceh, it was found that there the poster media are effective in increasing knowledge and decreasing smoking behavior in adolescents(p-value 0.000 <0.05). For this reason, it is suggested that schools as an educational institution to intensively promoting student health especially in preventing and reducing smoking behavior among students using attractive media like posters. Consequently, students’ knowledge related to the dangers of smoking is improved and eliminate students’ interest in consuming cigarettes, as well as provide awareness to students how dangerous cigarette is.

REFERENCES


