

Original Research

The Use of Educational Video in Increasing Tobacco Farmers' Knowledge of First Aid for Green Tobacco Sickness (GTS)



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Article Info	Abstract
Article history: Received: 30 May 2023 Accepted: 27 July 2023	<p><i>Introduction:</i> The tobacco production process has a negative health impact on tobacco workers. Every day, tobacco farmers who plant, process, and harvest can absorb as much nicotine as the amount of nicotine found in 50 cigarettes. Therefore, tobacco farmers are at risk of acute nicotine poisoning known as Green Tobacco Sickness (GTS). The aim of the study was to determine the effect of educational videos on increasing tobacco farmers' knowledge of first aid for GTS in Kedungadem Village, Kedungadem District, Bojonegoro Regency.</p> <p><i>Methods:</i> This research used a pre-experimental one group pre-test post-test design. The population was 129 tobacco farmers. The sample was 97 tobacco farmers who were recruited by cluster random sampling. The data were obtained by a questionnaire and analyzed by paired t-test ($\alpha \leq 0.05$).</p> <p><i>Results:</i> The results showed that 63 farmers (64.5%) had a low level of knowledge before educational videos were played and increased to 84.5% after the videos were played. The results of the paired t-test indicated that there was an effect of educational videos on tobacco farmers' knowledge of first aid for GTS ($P = 0.000$).</p> <p><i>Conclusion:</i> Health education using videos can increase tobacco farmers' knowledge about first aid for GTS. Videos can be used as alternative media for providing health education to the community. Further researchers can provide a control group and/or use a different method.</p>
Keywords: green tobacco sickness, knowledge, educational videos	

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INTRODUCTION

The tobacco production process has a negative health impact on tobacco workers. A tobacco worker who grows, processes, and harvests tobacco every day can absorb as much nicotine as is found in 50 cigarettes [1]. During the harvesting process, almost the entire farmer's body can be exposed to tobacco plants and has the potential to be exposed to nicotine. The harvesting process is usually carried out in the morning, where the tobacco leaves are still wet with dew so that there is an increase in the absorption of nicotine in the tobacco into the farmer's skin. Therefore, tobacco farmers are at risk of experiencing acute nicotine poisoning which occurs through skin absorption, and this disease is known as Green Tobacco Sickness (GTS) [2].

The use of video as a means of health education is growing in line with advances in technology. Video is an audio-visual learning medium that involves the senses of hearing and sight so that it can describe an object that moves together with a natural sound or an appropriate sound. Health education through video has the advantage of providing good visualization to facilitate the absorption of knowledge. Videos can present information, describe processes, explain complex concepts, teach skills, shorten or slow down time, and influence attitudes to help in understanding learning material. Videos are able to produce better learning outcomes for remembering, recognizing, recalling, and connecting facts and concepts [3].

Bojonegoro is a regency that has a large area of tobacco of 8,623.50 hectares. The

majority of tobacco farmers are located in several sub-districts, including Sugihwaras (1,092 hectares), Kedungadem (1,243 hectares), Kepohbaru (1,067 hectares), Baureno (1,152 hectares), Sumberrejo (797 hectares), and Balen (863 hectares) [4]. Tobacco production in Kedungadem is the largest and is divided into two kinds of tobacco, Jawa and Virginia [5]. In Bojonegoro, GTS has not been well documented and its occurrence is not reported. This happens because many of the farmers experience GTS, but they cannot recognize the symptoms.

In Indonesia, research conducted in several regions showed that 66.3% of tobacco farmers experienced GTS symptoms. Most of the tobacco farmers had low knowledge about GTS symptoms (96.6%), and poor preventive measures (86.5%) [6].

Based on an initial survey conducted on November 13th 2022 using a questionnaire on 11 farmers, it was found that 100% of them had experienced GTS symptoms like dizziness, nausea/vomiting, weakness, blurred vision, and mild shortness of breath. 10 out of 11 farmers experienced headaches, and 5 farmers experienced excessive sweating. Furthermore, the use of personal protective equipment (PPE) was also not optimal. A total of 6 farmers wore long sleeves, 6 farmers wore cloth gloves, 3 farmers wore slippers/boots, and only 1 farmer wore a mask. GTS causes weakness in the body so that only a few tobacco leaves are picked. Some farmers also cannot work due to illness, and thus it decreases productivity. In addition, the impact of GTS can also occur in children, including frequent stomachaches and decreased concentration. [7].

On the other hand, knowledge is affected by some factors such as education, age, income, and information exposure [8]. The results of the research [9] mentioned that the better the level of knowledge, the better the behavior in first aid. Previous research [10] proved that there was a relationship between the level of knowledge and the level of first aid. However, if the knowledge in performing first aid measures cannot be applied, major problems such as death will occur [11].

Knowledge and skills in first aid can be obtained through health education [12]. To obtain effective results and attract public interest, tools and media are required as sources of information [13]. There are various types of health education media that can be used in health education including lecture media, audio, print media, visuals, audio-visual media and computer media, interactive and visual aids. [14]. Respondents in this study were tobacco farmers because they were the first people who came into contact with tobacco from nursery, planting, to harvesting and processing tobacco leaves, so they were often exposed to nicotine every day which caused the risk of getting GTS [15][16].

From the abovementioned studies, there has been no research about providing education with videos to tobacco farmers. Therefore, this study aimed to analyze the effect of providing educational videos on tobacco farmers' knowledge of first aid for GTS in Kedungadem village, Kedungadem district, Bojonegoro regency.

METHODS

This research was a pre-experimental study

with one group pre-test post-test design. The dependent variable was the use of educational videos and the independent variable was tobacco farmers' knowledge of first aid for GTS. The research was conducted in Kedungadem village, Kedungadem district, Bojonegoro regency on March 11th and 12th, 2023. The population in this study was tobacco farmers amounting to 109 people. The sample consisted of 97 people who were determined based on the Slovin's formula with $\alpha=0.05$. The sample was obtained by using cluster random sampling from several hamlets.

The inclusion criteria were landowning tobacco farmers who were willing to be respondents, not illiterate, and not deaf.

The instrument used educational videos made by researchers referring to the Director General of P2P, Ministry of Health of the Republic of Indonesia which contained definitions, signs and symptoms, impacts, prevention, and ways to treat GTS [9]. The data was collected using a questionnaire prepared by the researchers consisting of 10 questions. The questionnaire was tested for validity on 30 tobacco farmers in Kepohkidul village, Kedungadem district, Bojonegoro regency, which showed that 10 items were valid with a value of <0.374 and an Cronbach's alpha value of 0.749 which stated that the questionnaire was reliable. The level of knowledge was categorized into 3, good (score 76-100), moderate (score 56-7), and poor (score ≤ 55).

The data were collected by inviting tobacco farmers to attend the village hall, then counseling activities with educational videos were carried out in two batches. Before the

education was given, informed consents were distributed to the farmers. If they agreed, they were asked to sign the consent form. After the farmers agreed, the farmers were given a pre-test knowledge questionnaire and then given health education about GTS. The post-test questionnaire was provided after the education completed (on the same day).

Before the statistical test was carried out, a data distribution test was carried out using a comparison of the skewness value, namely a

comparison of the skewness value and standard error skewness which showed the results of the pre-test 0.18 (-2 to 2) and post-test 0.11 (-2 to 2), meaning that the data distribution was normal. Then, the data were analyzed by using paired t-test ($\alpha \leq 0.05$).

This research was declared ethically acceptable by the Ethics Committee of the Universitas Muhammadiyah Lamongan on February 27th, 2023, with No. 244 /EC /KEPK -S1 / 02 /2023.

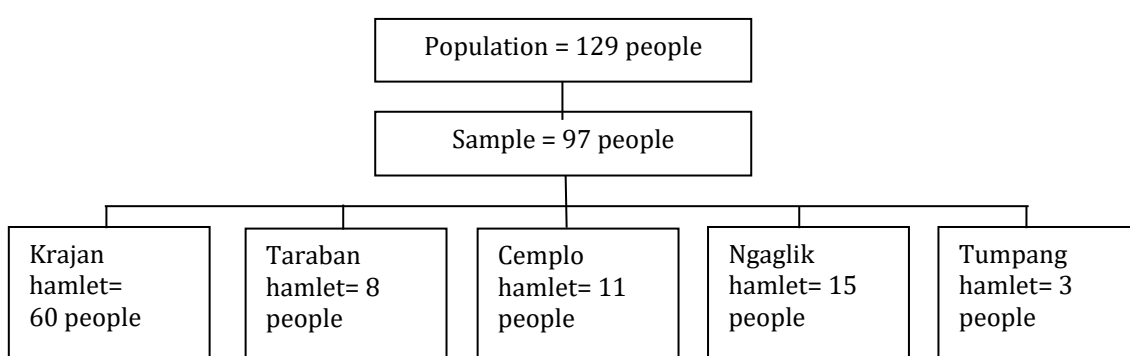


Figure 1. Cluster Random Sampling

RESULTS

This research was conducted in Kedungadem village, Kedungadem district, Bojonegoro regency on March 11th and 12th, 2023. On March 11th, it was attended by 47 people, while on March 12th, 2023 it was attended by 39 people. There were 11 people who did not come, and then the data were collected by using the door-to-door or home visit method.

Data on Table 1 indicate that 88.7% of tobacco farmers are female, 90.7% are senior high school graduates, 70.1% are aged between 30 and 50 years, 69% work as tobacco farmers for 5-10 years, and 100% have experienced signs and symptoms of GTS.

Data on Table 2 show that 64.9% of tobacco farmers have poor knowledge before being given educational videos. After being given educational video, (84.5%) tobacco farmers have good knowledge.

Data on Table 3 indicate that before the educational video was given, the mean value of farmer knowledge was 49.59, with a minimum value of 30 and a maximum of 70. After being given an educational video, the mean value of farmer knowledge increased to 85.15 with a minimum value of 70 and a maximum of 100 with a pre-posttest mean difference of 35.56. The results of the paired t-test showed a value of $p = 0.000$ ($p < 0.05$), meaning that there was an effect of the GTS

first aid educational video on the knowledge of tobacco farmers in Kedungadem village, Kedungadem district, Bojonegoro regency.

Table 1

Demographic Data (N=97)

Variable		N	%
Sex	Male	11	11,3
	Female	86	88,7
Educational Background	Junior High School	7	7,2
	Senior High School	88	90,7
	Higher Education	2	2,1
Age(years)	<30	14	14,4
	30-50	68	70,1
	>50	15	15,5
Length of working	<5 years	15	15,5
	5-10 years	67	69
	>10 years	15	15,5
The number of symptoms	<4	37	38,1
	4-6	35	36,1
	>6	25	25,8

Table 2

Tobacco Farmers' Knowledge before and after being Given Educational Videos (N=97)

Knowledge Level	Pre test		Post test	
	N	%	N	%
Good	-	-	82	84.5
Sufficient	34	35.1	15	15.5
Poor	63	64.9	-	-
Total	97	100	97	100

Table 3

Statistical Analysis (N=97)

Knowledge Level	N	Min-Max	Mean±SD	p
Pre-test	97	30-70	49.59±12.069	
Posttest	97	70-100	85.15±9.587	0,000

DISCUSSION

The results showed that there was an effect of providing educational videos on tobacco farmers' knowledge about first aid for GTS which was also proven by an increase in the mean pre-test and post-test of 35.56 from (49.59 to 85.15).

The results of this study are in accordance with Septiani's research which showed that there was an effect of health education using audio-visual media on Basic Life Support (BLS) knowledge [17]. Yandi's research revealed that the provision of audio-visual education had an effect on the level of students' knowledge about the occurrence of avulsions in West Sumatra with an increase in the mean difference of 2.97 (from 9.47 to 12.44) [18]. Furthermore, Ardianto's research showed that providing health education using the video had an effect on increasing snake bite first aid knowledge in farmer groups in Lamongan with a mean of 26.83 (from 60.50 to 87.33) [19].

Factors affecting knowledge include education, mass media or sources of information, socio-cultural and economic, environment, experience, and age [20]. The level of knowledge of tobacco farmers affects the incidence of GTS. Tobacco farmers do not use personal protective equipment when working, especially during harvesting [21]. The farmers do not use personal protective equipment because they do not know the impact and benefits of using personal protective equipment. The use of personal protective equipment is one way to prevent the occurrence of GTS [22]. In this study, the factors that greatly influence the lack of

knowledge are the lack of information and farmers' educational background. Those two factors cause low awareness of tobacco farmers about the dangers of GTS. This is emphasized by the results of the pre-test which showed that farmers were lack of knowledge regarding how to prevent GTS in the fields or when having direct contact with tobacco leaves. They only wore usual clothes without wearing boots and face masks.

Based on demographic data, 90.7% of farmers had a high school education. One of the factors which affect knowledge is educational background. Educational background influences one's behavior, attitudes, level of motivation, skills, and ways of speaking or communicating. The higher a person's level of education, the easier it is to capture information [23]. Information provided to respondents using video media is understandable because video provides images and sound. In this case, it is considered efficient and practical since the video is easier to understand and can be shown repeatedly so it is effective for changing the views of the target to be given the intervention [24].

Playing videos is very suitable for one's learning because most knowledge is obtained through the sense of sight (30%) and the sense of hearing (10%), meaning that the more senses are involved in gaining knowledge, the easier it will be to understand the knowledge [23]. This is supported by the theory which stated that audio-visual media have elements of sound, images, and various variations which are conveyed through assistive devices such as television, computer/laptop, Liquid Crystal Display (LCD), Compact Disk (CD), Video Compact

Disk (VCD), and Digital Versatile Disk (DVD) [25]. The provision of health education using computers/laptops and LCDs will provide more opportunities for respondents to obtain authentic material and create a more attractive environment [25].

The development of educational methods changes according to technological developments. The use of digital technology is very useful in conveying information in the current era. One example of providing education is through multimedia videos. Video is the most meaningful media compared to other media such as graphics, audio and so on [26]. Video is a technology for capturing, recording, processing and storing, transferring and reconstructing still image sequences by presenting scenes in motion electronically. Multimedia video is useful for increasing one's retention in remembering learning materials. [3]. The use of video is very effective for health services, especially in nursing. Providing education through video can be applied in health services because the audio-visual combination is more interesting, the content delivered can be standardized and the video can be repeated if one forgets [17].

CONCLUSION

Providing education using videos can increase tobacco farmers' knowledge about first aid for GTS. This activity is very useful for tobacco farmers to minimize the occurrence of recurrent GTS. Videos that have been socialized can be replayed and included on the agenda for regular tobacco farmer meetings, especially during the dry season so that GTS can eventually be prevented. In addition, the

results of this study can be used as a reference by future researchers to conduct further research using a control group and other methods as a comparison.

LIMITATIONS

The limitations of this research are related to the difficulty of controlling the farmers when the research was carried out. Some farmers do not come to fulfill the invitation so there was a modification of data collection by visiting the tobacco farmer's house. This was performed to fulfill the specified number of samples.

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CONFLICTS OF INTEREST

This study has no conflict of interest.

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