

## Establishment of Burn First Aid Laypersons with Beg-Teg In SMPN 1 Kalisat

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### Abstract

**Introduction:** Burns are the main cause of crisis conditions and major traumatic injuries that risk causing various problems, resulting in tissue death. Burns are injuries that occur to skin tissue or other tissues caused by radioactivity, the flow of electric current, friction of hot objects, or exposure to chemicals. Burns that occur in children are a vital health problem but have not been widely disclosed compared to adults. Thermal burns are most common in children, either due to fire or hot water. Children are an age group that is vulnerable to injury in connection with curiosity about their surroundings. One of the injuries that often occur in school-age children is burns. The results of the situation analysis and discussion with partners formulated one problem, namely: lack of information, knowledge and understanding related to first aid problems in student groups in schools, especially in the provision of first aid (First Aid) for burns, the proposer offered through Community Service in the Formation of Layperson First Aid for Burn Cases with TEG-BEG (Technological Gadgets on Based Emergency Group).

**Method:** First Aid Burns using TEG-BEG is a collection of several educational media based on research results from Community Service proposers together with proposer members who have been published. TEG-BEG learning media consists of Power Point Media, documentary short films, FAG (First Aid Guideline), and EFA-Game (Education First Aid Game). In this PKM activity, the school as a partner participates in the implementation of the program through the provision of human resources, namely students and teachers in this activity. In addition, the school will also be involved in providing support for the provision of places and the implementation of PKM program activity times. At the end of the PKM program, evaluation and sustainability of the program in the field will be carried out after the activities are completed through supervision and reevaluation of activities.

**Result:** There are differences in knowledge in students after providing education using several educational media platforms.

**Conclusion:** The PKM TEG-BEG activity can increase the knowledge of SMPN 1 Kalisat students. This is evidenced by improving the graph of knowledge level. This is supported by the existence of fun educational media and following technological developments in accordance with the target of PKM.

**Keywords:** Burns, Documentary Short Films, EFA-Game, First Aid, Layperson.

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### Introduction

Burns are the main cause of crisis conditions and major traumatic injuries that risk causing various problems, resulting in tissue death. Burns are injuries that occur to skin tissue or other tissues caused by radioactivity, electric current, friction of hot objects, or exposure to chemicals (Darotin, 2023; Young & Hassler, 2008). Burns that occur in children are a vital health problem but have not been widely disclosed compared to adults. Age, gender, cause of burns, burn characteristics, burn depth and degree of burn can be used as indicators of morbidity and mortality rates in burn cases. Thermal burns are most common in children, either due to fire or hot water (Christie et al., 2018).

World Health Organization (WHO, 2023), states that there are around 180,000 deaths due to burns that occur every year with more occurring in developing countries so that the prevalence of burns in the world can be categorized as high. According to Riset Kesehatan Dasar (Badan Litbang Kesehatan KKR, 2018; Riskesdas, 2018), the frequency of burns throughout Indonesia was 2.2% in 2018, which occurred in various provinces. The increase in the prevalence of burn cases in East Java was (11,12%). Burns caused by hot water or hot steam are the most common cause, with a percentage (52.2%). The hands and forearms are the parts of the body that are often affected by a percentage (36%), followed by the face and neck area (21,1%). Judging from education, the highest rate of burn incidence is in junior high school education with a percentage (1,5%), the most data on burn injuries in third place, namely in the age group of 15-24 years with a percentage (1,23%) (KEMENKES, 2019).

Burns that occur are generally caused by a heat source such as fire, hot water, chemicals, electricity, and radiation (Sari et al., 2018). Burns can occur when the surface of the body's skin is accidentally or deliberately in direct contact with the R marrow so that the skin, capillaries and blood cells are damaged (Supia & Yuniartika, 2020). Burns that are not treated properly can result in severe pain, infection, disability, respiratory failure, and death. There are so many impacts that can be caused by burns, so it is hoped that every individual can provide first aid for someone who has a burn. Providing first aid is a situation where an individual is ready to respond to help or a person's expertise in responding to a sudden or unplanned event (Rismana & Rosidah, Idah; Y, Prasetyawan; Bunga, Olivia: Y., 2013; Sari et al., 2018).

Based on a preliminary study at SMP Negeri 01 Kalisat, the results of interviews with 10 students said that they had experienced burns during scouting activities and while decorating the classroom. Burns experienced by students such as being exposed to hot water, being hit by a hot pot while cooking, being exposed to fire, and being sunburned, and when decorating a classroom were hit by glue gunfire. However, it does not immediately get first aid because for health extracurriculars such as the Indonesian Red Cross (PMR) are not running actively and on the other hand there is a School Health Unit (UKS) that does not have complete tools and drugs for handling injuries so that students still do not have complete tools and drugs for handling injuries so that students still lack knowledge and confidence to provide first aid to burn injury victims Because they do not have support from the school environment and there is no provision of learning education provided to the school. In providing first aid, they provide treatment by applying toothpaste to the wound area. Close knowledge is also related to their

ability to organize and carry out a series of actions necessary to complete a particular task. Therefore, it is necessary to provide intervention or solutions to form a Layperson First Aid for Burn Cases in SMPN 1 Kalisat students.

Prevention and first aid in injuries including extremity injuries are very important in schools to create safe schools for children. This is also supported by the Safe Community program launched by WHO for accident prevention, increasing community capacity in preventing injuries and health organizations are important in this program. The implication that can be done in the school environment is to increase the knowledge of school residents in preventing injuries and conducting P3K that can be applied in the school environment and at home (Spinks et al., 2009). Providing education in the formation of Burn First Aid Layperson with BEG-TEG (Based Emergency Group on Technology Gadget) is an important thing to do in the school environment considering that the school is a location with a fairly high risk of extremity injuries. In addition, education is also needed to increase a person's confidence before providing first aid for injuries (Nastiti, 2020)(Nastiti, 2020).

The development of the times followed by the latest innovations is one of the solutions to convey information to school-age children in providing first aid in burn cases. Projection media, (Power Point), documentary short films, FAG (First Aid Guideline), and EFA-Game (Education First Aid Game) are emergency groups based on Technology Gadgets that can be used as a medium for conveying information. E-Fa Game is one of the first application-based games that can be operated using an android as a medium in delivering learning in the form of first aid in injury cases in school-age children (Nastiti & Darotin, 2022). Based on this background, the Community Partnership Program (PKM) of schools in the rural area of Jember Regency, educational facilities can be used as partners in expanding knowledge and the formation of Layperson First Aid as an effort to form resilient students and Emergency Response in providing help to friends or family, especially in cases of burns.

### **Identification of Problems**

The focus of community service activities will be carried out at SPMN 1 Kalisat as one of the first-level schools located in rural areas with low knowledge about first aid caused by lack of information, incompetence, unwillingness and lack of motivation of students in accessing information. Analysis of the situation in the field with partners and teachers found that there were quite a lot of burn incidents in the area. In addition, information was obtained that so far

skills in providing first aid have been provided through extracurricular scouts and PMR, but students feel unsure that the procedures carried out are correct or there are still shortcomings. So many students said that they were not optimal in providing first aid when there were burn cases. Therefore, schools and students need first aid education media that is in accordance with the needs of junior high school students and their growth and development.

Based on the results of the study of the above partner problems, it can be concluded that there is a need for PKM in junior high school student groups through the formation of Burn First Aid Laypersons using BEG-TEG (Based Emergency Group on Technology Gadget). This PKM program is an application of research results on the development of first aid education technology for junior high school students from Dityawardani et al., (2023) and Nastiti et al., (2023). Therefore, this PKM program takes this theme in an effort to improve access and quality of Health Education through the establishment of Burn First Aid Layperson using BEG-TEG (Based Emergency Group on Technology Gadget) at SMPN 1 Kalisat.

### **Implementation Methodology**

The implementation of the activity will be carried out with several activities below, including:

1. School Community Deliberation

In the first month, the activity began with a meeting between the PKM proposing team and school partners. This school community meeting was attended by teachers and student representatives. This activity aims to introduce the proposer team to the partners involved. In addition, in the first step, deliberations were also held on possibilities that could occur during activities related to student and teacher activities.

2. Health education and the establishment of Burn First Aid Laypersons using BEG-TEG (Based Emergency Group on Technology Gadget) at SMPN 1 Kalisat. In the second to sixth months, participants are carried out first aid health education using BEG-TEG, containing quiz materials accompanied by materials and videos containing first aid materials including burn cases will be studied by students in 4 weeks with 1 time 4 offline face-to-face then 2 times of programmatic guidance. The success of the program will be evaluated in the fifth and sixth months using a knowledge questionnaire.

**Table 1.** Structure of Burn Health Education Sessions and Time Allocation

Stages	Deskripsi Materi	Duration
1	Burn Health Education using Projection Media ( <i>Power Point</i> )	30 Minutes
2	Burn Health Education Using Documentary Short Film Media	30 Minutes
3	Burn Health Education using FAG ( <i>First Aid Guidelines</i> ) media	30 Minutes
4	Burn Health Education using EFA-Game (First Aid Game) media	30 Minutes
5	Evaluation 1	30 Minutes
6	Evaluation 2	30 Minutes

### 3. Program supervision and evaluation

Supervision is carried out every week to see how often students and teachers see the short film of the first aid every week and then it will be evaluated in the fourth week related to knowledge, willingness and motivation in accordance with the indicators that have been determined.

At the end of the PKM program, an evaluation and sustainability of the program in the field is carried out after the activities are completed through supervision and reevaluation of activities. This supervision activity will involve UKS teachers/coaches with the hope that there will be a weaning process in the sustainability of independent programs in schools. Program reevaluation activities are carried out through activity documentation and completeness of the recording system and activity reporting. Recording and reporting are used to assess whether there is a transfer of knowledge and methods from the proposing team to partners in overcoming problems that have been agreed upon in the school.

## Results and Discussion

**Table 2.** Identification of Respondents by Age

Age	Frequency (f)	Presented (%)
12	62	32,29
13	96	50,00
14	34	17,71
Total	192	100,00

(Data Source: Primary Data 2024)

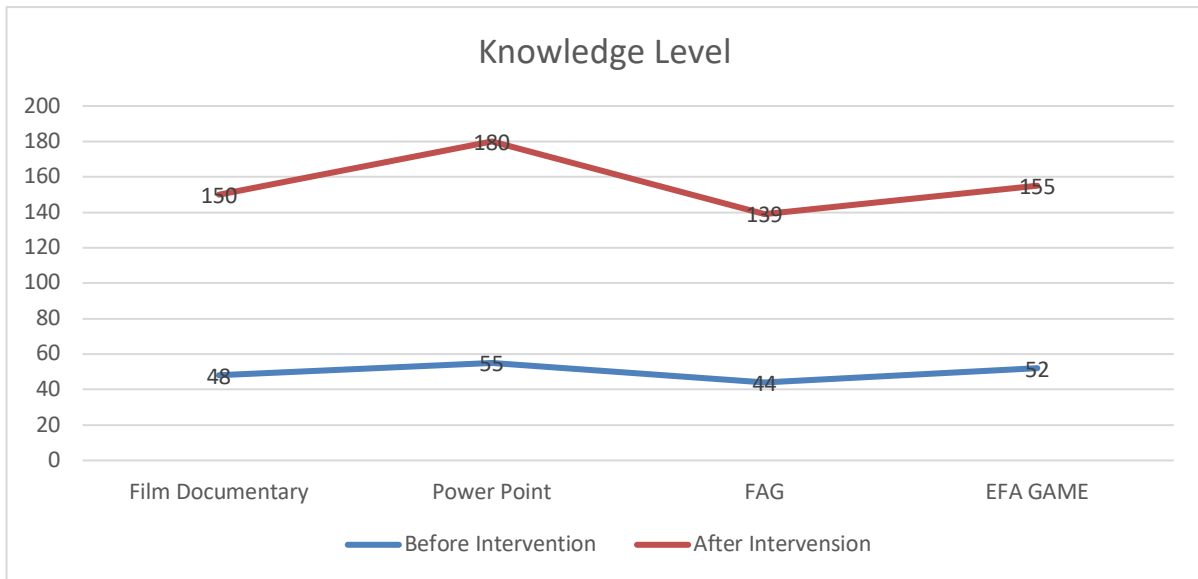
Based on table 1, it is known that the identification of respondents based on the age type, the majority of whom are 13 years old, as many as 96 respondents with a percentage of 50,00%.

**Table 3.** Identification of respondents by gender

Sex	Frequency (f)	Presented (%)
Boys	87	45,31
Girl	105	54,69
Total	192	100,00

(Data Source: Primary Data 2024)

Based on table 2, it is known that the identification of respondents based on gender is the majority of Girls as many as 105 with a percentage of 54,69%.



**Figure 1.** Knowledge Difference provides first aid for burns through several media platforms

## DISCUSSION

The activity carried out in the form of the Formation of *Layperson First Aid* for Burn Cases with BEG-TEG (Based Emergency Group on Technology Gadget) at SMPN 1 aims to increase the knowledge and understanding of SMPN 1 Kalisat students. Burns are one of the most dangerous cases that occur not only in adults but also in children and adolescents (WHO, 2023). Meanwhile, based on preliminary studies, data was obtained that SMPN 1 Kalisat students did not know what actions should be taken to provide help due to lack of knowledge so that they were unable to make decisions. Junior high school students are expected to be able to make decisions related to first aid as an effort to help *Laayperson*. Burns are a type of injury that is one of the causes of exposure to hot objects, junior high school students with an average age in the child category have a high risk of exposure to hot objects. Hot objects that often come into contact with teenagers are exhaust from two-wheeled vehicles with manual transmissions. Not only about the skin area, in the case of burns with a wide degree will cause an emergency in terms of health. Improper first aid can worsen the condition of the wound and even cause infection and inhibit the healing process of burns (Indri Wahyuningsih et al., 2022).

The team of the Department of Emergency Nursing, Nursing Study Program, University dr. Soebandi carried out Tridarma Higher Education activities through internal funding in the form of Community Service at SMPN 1 Kalisat. The reason for choosing SMPN 1 Kalisat is because it is located in the northern part of Jember Regency in the rural area category. So that first aid if there is a case of minor or degree 1 burns in rural areas can be handled independently by the

residents of SMPN 1 Kalisat. Through education, a person will gain more knowledge (Didit Damayanti, 2023). Providing proper first aid in the event of a burn can reduce the risk of trauma emergency, reduce pain, reduce burn area and minimize complications and sequelae after exposure to hot objects (Riaz et al., 2020).



**Figure 2.** The Chief Executive conducted an evaluation of burn first aid knowledge

Community service in the form of burn first aid education was carried out by the chief executive, namely Rida Darotin, S.Kep., Ns., M.Kep. and team members with the topic “*First Aid for Burns with BEG-TEG (Based Emergency Group on Technology Gadget) at SMPN 1 Kalisat*”. First aid actions are in accordance with those delivered by (Walsh et al., 2013), That is, removing something that sticks to the wound area, either clothes or other objects, wrapping the wound with a clean cloth. Where these actions have been outlined in documentary short films and the E-FA Game application. The combination of technology Technology uses documentary short films that can be accessed on the youtube page <https://www.youtube.com/watch?v=YsgajNIt5-I&t=254s>, and the E-FA Game (*Edukation First Aid Game*) application which can be accessed with Android.

Community Service Activities that utilize the technology are based on *Focus Group Discussions* with Partners in accordance with a predetermined agreement, namely increasing the knowledge and willingness of SMPN 1 Kalisat residents. The students who attended the activity also had high enthusiasm, this was evidenced by their willingness to answer questions from the chief executive at the time of evaluation at the end of the activity. The responses of participants, who are students of SMPN 1 Kalisat, indicate an interest in providing first aid for

first-degree (mild) burn injuries. For more severe burn cases, participants report that referral to the nearest health facility is necessary. This finding suggests that students recognize the appropriate boundaries of first aid management and understand the importance of seeking professional medical care for more serious burn injuries. Previous studies have shown that early recognition of burn severity and timely referral are critical in preventing complications and improving outcomes.

## Conclusion

The PKM TEG-BEG activity can increase the knowledge of SMPN 1 Kalisat students. This is evidenced by improving the graph of knowledge level. This is supported by the existence of fun educational media and following technological developments in accordance with the target of PKM.

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