SUPPLYING OF ACTIVE FIRE PROTECTION SYSTEM (APAR) IN PULO ASEM AREA (TINGKAT RW) JAKARTA TIMUR TO INCREASE SAFETY AWARENESS FOR THE COMMUNITY

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ABSTRACT
Among the world record occupational safety and health (K3) accidents, the death toll in a fire is ranked just below natural disasters such as the earthquake and tsunami. Almost every type of building and almost every country in the world has experienced a history of devastating fires, whether in hotels, nightclubs, hostels, agriculture, shops or fuel depots, included a house. The question we must ask ourselves is ‘why has this tragedy occurred repeatedly and what have we learned from disasters over the past 100 years to strengthen preventive measures globally?’ There are three basic requirements that a fire can occur and get bigger:

a. The presence of fuel or flammable materials;
b. The existence of a lighter source; and
c. The presence of oxygen in the air to support combustion.

The ability to manage and reduce the risks associated with these three elements will greatly reduce the likelihood of a serious fire. So, our obligation as academics to provide knowledge and counseling about the danger of fire to the community so that they understand the danger of fire and can-do prevention and control, in addition to increasing awareness of fire hazards to create a safe and comfortable atmosphere in our environment.

Keywords: Disasters, Fire, Awareness of Fire Hazards, safe and comfortable atmosphere.

1. INTRODUCTION

The danger of fires in the community environment is a disaster that often occurs, both due to electrical short circuit, exploded stove, LPG gas leak, and others. The cause is the lack of community understanding to prevent these dangers. Lack of understanding and lack of community awareness regarding fire protection systems, both passive and active. Therefore, we share our knowledge by providing counseling about the dangers of fires as well as providing light fire extinguishers as a matter of concern if fire hazards occur, not only that we also show how to use these fire extinguishers. We also provide a questionnaire to find out what level of community understanding about the use of fire extinguishers and its control.

Jati village area - East Jakarta is included in the category of densely populated areas. With an area of 215.5 ha, the population reaches 33,531 inhabitants. This village is bordered by Pulogadung in the north, Rawamangun in the west, Jatinegara, Cakung in the east and Jatinegara Kaum, Pulogadung in the south. Borders of this kelurahan: North, Kali Banjir Kanal, and Kelurahan Pulogadung Timur: Kali Sunter and Kelurahan Jatinegara Kaum, South: Kelurahan Cipinanng, West: Kelurahan Rawamangun, Jalan racing bicycle, Jalan Pope, Jalan Pegambiran.
This densely populated area is quite often affected by fire. In the area of DKI Jakarta province in 2019 alone, the total number of fires has reached 258 events. These fires were caused by 104 electricity events, 13 incident stoves, and 141 other incidents. Throughout 2018 there were 1522 incidents, consisting of 891 events due to electricity, 64 events due to smoking, 148 incidents due to stoves, 419 other events, and 6 events with unknown causes. As shown in the Figure 1.1.

![Figure 1.1 Fire Statistics in DKI Jakarta](image)

A fire protection system is very much needed for the prevention of fire hazards, so that each region must be equipped in accordance with applicable laws and regulations both locally and nationally.

2. ANALYSIS CONCEPT

Government Regulation No. 21 of 2008 article 1 paragraph 2 regarding the Implementation of Disaster Management, states that the implementation of disaster management is a series of efforts that include the establishment of risky development policies emergence of disasters, disaster prevention activities, emergency response, and rehabilitation. Through this community service, it is hoped that the community, entrepreneurs will gain knowledge on how to identify hazards and risks at their workplaces and to deal with these hazards and risks correctly and effectively in accordance with applicable laws and regulations.

Based on an analysis of the situation of the region using the Ichikawa Diagram, it can be identified the problems that occur in the region which are the reasons for community service. By analyzing the Ichikawa Diagram, it is hoped that the public, especially entrepreneurs, will understand and understand the danger and risk of fires and how to overcome them.

Based on the situation analysis described, there are several problems, namely:
1. There is no public understanding of how to identify fire hazards and risks.
2. There has been no information about fire hazards from the authorities and related parties
3. There is no concern for the surrounding environment
4. Not yet understood and understood how to deal with fire
5. Lack of facilities and infrastructure for active and passive fire protection systems
6. There has been no calculation of losses resulting from the fire hazard.
To fulfill Government Regulation No. 21 of 2008 article 1 paragraph 2 concerning the Implementation of Disaster Management, then using the Ichikawa Diagram analysis and PDCA is expected to be able to overcome all problems regarding the danger and risk of fire and how to overcome them.

Fire is a chemical reaction that is a fast oxidation process that is formed from 3 (three) elements, namely heat, oxygen and flammable substances that produce heat and light. Fire is an uncontrolled and undesired fire because it can cause a lot of loss both property and casualties.

There are several factors that cause fire, namely due to human factors themselves, natural factors, and animal factors. From human factors, there are several causes of fire, namely Intentional, Negligence, Lack of Understanding. Examples of deliberate factors are throwing cigarette butts that are still burning into trash cans that contain flammable materials such as paper, an example of negligence is forgetting to turn off air conditioners or electronic devices that are no longer in use, examples of the inattention factor are those that are commonly used in our daily lives i.e. excessive use of the T (plug) on the socket that can cause a circuit to burn inside the T. Then from natural factors can be caused by the dry season, volcanic eruptions, earthquakes, etc. And the last factor can be caused by animal animals, mice, or cats that accidentally bite the cable to peel and cause electrical short circuit to cause a fire.

In the blackout science there are 3 classes about fires namely class A fires, class B fires, and class C.

1. **DRY POWDER ABC**, a versatile fire extinguisher, especially fires class A and B are also effective for protecting vehicles. The advantages are dry chemical powder is not harmful to humans, oxygen separator from burning objects, effectively used in open space as long as the wind is not too strong, can absorb heat and cool.
2. EASY FLUID (HALON), a bonding of methane and halogen. Its function is to extinguish class B and C fires originating from liquids, gas and electricity. But now it is not produced because the content can damage ozone.

3. CO2 (CARBONDIOXIDA), used to extinguish fires that occur on equipment or machines that are electrified. The advantage is that it can be used to extinguish class B and C fires because it is a gas material, CO2 does not damage, with effective and clean efficiency, very efficient and effective for use in rooms such as offices, laboratories and other rooms, Carbon Dioxide (CO2) can absorb heat and at the same time cools, the tube construction is specially designed to withstand high pressure and is equipped with a long hose with a funnel-shaped nozzle, a low temperature (-50°C) that may freeze human nerves and nerves. And humans who contract diseases such as asthma, will be weakened by CO2.

4. FOAM (FOAM), a collection of liquids in the form of small bubbles that contain gas or air from the mixture of sodium bi-carbonate with aluminum sulfate. The advantage is that it can be used to extinguish class A fires, but it is very suitable when used for class B, Conductive in nature. Cannot be used to extinguish Class C fires, Foam is lightweight, very effective for extinguishing flammable liquids by isolating oxygen and covering the surface of liquid to avoid fires that can spread (expand) again.

5. AIR, a type of fire extinguisher that is dissipated by water at high pressure. APAR This type of water APAR is the most economical type of APAR and is suitable for extinguishing fires caused by non-metallic solid materials such as Paper, Fabric, Rubber, Plastics etc. (Class A fires). But it will be very dangerous if used in fires caused by a voltage installation (Class C Fire).

3. METHODOLOGY

The flow of the implementation of community service activities illustrates the stages of the implementation of activities carried out in the Jati District region in order to increase awareness and knowledge of the local community on the importance of risk knowledge, danger and fire disaster management. The flow of the implementation of these activities can be seen in the figure below:
4. IMPLEMENTATION

- Conducted online socialization regarding Fire Danger Coaching / Training and Fire Prevention and Control on 26 June 2020 at 11.00 - 11.30 WIB with representatives of PKK RW 02.
- On Sunday, July 12, 2020 at 08.00 WIB, our PKM Binus team visited Post RW02 of Pulo Asem Timur & Pulo Asem Utara area - Jati Village, Pulogadung District to meet with RW02 Chair and security team in order to conduct counseling and submission of 2 units of APAR (Fire Extinguisher) as an aid to the residents of RW02. In addition, we also give questionnaires to participants to fill in to find out the extent of people's understanding of the use of APAR.

We were welcomed very well by the Chairman of RW02 Pulo Asem along with the local security team. Mr RW02 was pleased and thanked BINUS for caring about the environment where counseling was still needed regarding potential hazards that could occur anytime, anywhere, unexpectedly. So far the Pulo Asem RW02 environment already has fire facilities, but it has not been sufficient, so the provision of 2 APAR units is very helpful for residents to be able to deal with fires if they occur as initial controls before being reported and controlled by the fire department.

Fire control training is carried out once a year together with the nearest fire fighting team. The Fire Fighter’s team (fire department) has completed the installation of fire alarms and 10 kg APAR including Hydrant pumps which are installed in several access points to the Pulo Asem area and always testing the water pressure from the Hydrant pump.

5. CONCLUSIONS

a. fire is a disaster that often occurs in residential areas
b. the vigilance and care of every citizen is very important in the prevention and control of fire hazards
c. understanding and knowledge of fire hazards is very important through socialization, counseling, as well as the practice of using fire extinguishers
d. Equally important is that cooperation with related parties such as fire teams must be carried out
e. Information about emergency numbers in the area must always be disseminated by local authorities

6. ATTACHMENT

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Introduction/penyuluhan via daring

Oleh:
Sartika Rini, ST.MT (Ketua)
Hubertus Davy Yuliante, ST. MT (Anggota)
PENYEDIAAN APAR UNTUK AREA PULO ASEM
TIMUR & UTARA RW02
Nilai Kuesioner Pengenalan APAR

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Government Regulation No. 21/2008 Article 1 version 2 concerning Disaster Management Organizations

Governor's Instruction No.65 of 2019 concerning Citizens Preventing Fire.