



Training on Household Fire Disaster Management for the UNRIYO Academic Community

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Abstract. Household fires represent a critical type of domestic disaster that may lead to significant property damage and loss of life. As the smallest social unit, households often lack adequate awareness and management of occupational health and safety, particularly in identifying and mitigating potential hazards. The academic community of UNRIYO, residing across various districts of Yogyakarta, is expected to be prepared not only for disaster management within their own households but also in contributing to community education and awareness. This community service program aims to enhance fire disaster preparedness through structured health education, fire management simulations, and pre- and post-assessments. The expected outcomes include scholarly publications and educational materials to support sustainable disaster preparedness initiatives.

Keywords: Disaster, Academic Community, Fire Disaster

INTRODUCTION

One type of disaster that may occur within the household setting is fire. Fires can cause losses not only in terms of property but also in human lives [1]. Due to their hazardous nature and their disruption of community life and livelihoods, fires are categorized as a form of disaster. A disaster is defined as “an event or series of events that threatens and disrupts the life and livelihood of a community, caused by natural, non-natural, or human factors, resulting in casualties, environmental damage, property loss, and psychological impact[2].

The household or family constitutes the smallest unit within the structure of society. In general, communities tend to pay limited attention to occupational health and safety management within the household environment, including the recognition and identification of potential hazards [3]. This is largely due to limited knowledge and skills in hazard management and disaster response. Consequently, households often experience panic when hazards occur in the domestic setting. This condition is further influenced by the family’s ability to detect potential disasters that may arise within the household [4].

Within the household environment, disasters can generate three distinct impacts: 1. Wealthier individuals experience fewer disaster-related losses, as they are able to mitigate impacts by strengthening their houses and utilizing available assets. 2. The poor, although more severely affected, often adapt by relying on social capital to sustain their livelihoods, thereby reducing reconstruction costs and maximizing communal support. 3. The survival group, representing the most vulnerable, faces the greatest risk, as their limited wealth is depleted for reconstruction expenses, leaving them unable to reduce labor costs or further mitigate disaster impacts [5].

The academic community of UNRIYO comes from diverse regions and resides across almost all districts of Yogyakarta. Upon returning home, they are expected to be prepared to manage disasters, both within their own households and in the broader community. In addition to individual preparedness, they are also

expected to play an active role in educating the communities in which they live. Furthermore, household fires may also occur within UNRIYO itself, with electrical short circuits being one of the potential causes. Therefore, the UNRIYO academic community must be equipped to manage disasters, particularly fires, whether they occur on campus or at home. Enhancing disaster preparedness in fire management requires health education interventions, including the delivery of learning materials and fire-handling simulations

METHODS

This community service program will be conducted at Universitas Respati Yogyakarta in May–June 2025. The activities will begin with a situational analysis, the development of pre- and post-test instruments, the preparation of a health Education Unit Plan (SAP), and the provision of equipment and materials (a water-filled drum doused with gasoline, burlap sacks, and two fire extinguishers). Members of the academic community will first gather in the main hall, where their knowledge of fire management will be assessed through a pre-test. After completing the questionnaire, participants will receive a 20-minute fire management session using a safety induction video, followed by a household-level fire simulation. The simulation will employ both simple methods (wet cloths) and the use of light fire extinguishers (APAR). Participants will then be given the opportunity to practice fire extinguishing techniques as demonstrated by the facilitators. Finally, a post-test will be administered to measure knowledge improvement after the intervention.

RESULTS AND DISCUSSION

The analysis of identified problems emphasizes the urgent need for structured household-level fire management education. The absence of such initiatives has left the academic community with limited knowledge of fundamental fire prevention and mitigation strategies. Addressing this gap through the delivery of structured training materials and simulations ensures the establishment of systematic strategies for fire emergency education. This intervention provides a foundation for enhancing household disaster preparedness at both the individual and institutional levels.

Furthermore, the lack of sustainable fire extinguishing simulation activities highlights the importance of continuity in disaster preparedness training. One-off interventions are insufficient to instill practical skills and behavioral change. Therefore, the program’s approach to implementing regular training and simulations led by the Community Service Team was designed to embed preparedness as an ongoing process. This method ensures that participants are not only exposed to fire management concepts but also repeatedly practice techniques, strengthening long-term retention and resilience.

The third problem identified relates to the limited assessment of the academic community’s knowledge regarding fire management. Without systematic measurement, it is difficult to evaluate the effectiveness of training interventions. By incorporating pre-test and post-test questionnaires, the program was able to generate empirical data that captures participants’ baseline knowledge as well as post-intervention improvements. This evidence-based approach is essential in demonstrating the program’s impact and in guiding future improvements.

Table 1.Program Design

No	Identified Problem	Proposed Intervention	Output
1	The absence of structured household-level fire management education	Delivery of training materials and household fire extinguishing simulations	Established strategies for fire emergency education
2	Lack of sustainable household fire extinguishing simulation activities	Implementation of regular training and fire extinguishing simulations by the Community Service Team	Practical application of household fire extinguishing techniques

3	Limited identification of the academic community's knowledge level regarding household fire extinguishing methods	Assessment of knowledge through pre-test and post-test questionnaires	Availability of baseline and post-intervention data on fire extinguishing knowledge
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The integration of these three interventions demonstrates a comprehensive strategy that combines education, practice, and evaluation. Training provided theoretical foundations, simulations offered hands-on experience, and assessments measured knowledge gains. Together, these components created a holistic program that not only addressed the immediate gaps identified in the community but also contributed to the development of a culture of preparedness. Such an approach is consistent with best practices in disaster education, which emphasize the integration of knowledge, skills, and evaluation.

Overall, the implementation of these interventions highlights the importance of adopting a systematic and sustainable approach to household-level disaster preparedness. The program's outcomes—ranging from the establishment of emergency education strategies to the availability of knowledge assessment data provide a strong basis for replication and scaling in other educational institutions and community settings. By empowering the academic community as both learners and agents of knowledge dissemination, the initiative contributes to broader societal resilience in facing the persistent risk of household fire disasters.

CONCLUSION

This community service program demonstrated that structured education combined with practical simulations is highly effective in improving the knowledge and skills of the academic community in household fire disaster management. The integration of pre-test and post-test assessments provided empirical evidence of knowledge improvement, while hands-on simulations ensured participants acquired practical competencies to respond confidently to emergency situations. Beyond individual learning outcomes, the program strengthened the role of the academic community as agents of disaster education, enabling them to disseminate knowledge within their local communities. Moreover, the initiative contributed to the cultivation of a preparedness culture within the university setting, aligning with broader national efforts to mitigate household fire risks in Indonesia. Future programs are recommended to expand participation to surrounding communities and include additional training components such as evacuation techniques, first aid, and fire risk management, thereby enhancing long-term community resilience

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