

# Fire Safety Awareness and Practices in a Longhouse: A Study in Sarawak, Malaysia

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**ABSTRACT:** Longhouses in Sarawak were deeply rooted in Indigenous culture but faced significant fire risks due to their wooden structures, open-flame cooking, and poor electrical installations. This study aimed to explore fire safety knowledge, attitudes, and practices (KAP) among a longhouse community in Miri, Sarawak, Malaysia. A cross-sectional survey was conducted among 46 respondents using a 25-item questionnaire (Cronbach's  $\alpha = 0.76$ ), and data were analyzed with the Statistical Package for the Social Sciences (SPSS). The results revealed that 61% ( $M = 21.39$ ,  $SD = \pm 5.43$ ) of respondents had good fire safety knowledge, 87% ( $M = 27.74$ ,  $SD = \pm 4.77$ ) demonstrated a positive attitude, and 63% ( $M = 14.72$ ,  $SD = \pm 2.56$ ) engaged in good fire safety practices. However, correlation analysis showed no significant relationships ( $p > 0.05$ ) between knowledge and attitude ( $r = -0.05$ ), knowledge and practice ( $r = 0.27$ ), or attitude and practice ( $r = 0.11$ ), suggesting that knowledge alone did not ensure behavioral change. Factors such as lack of training and risk perception might have influenced fire safety practices. These findings highlighted the need for targeted fire safety interventions, including hands-on training, community engagement, and improved access to fire prevention tools, and emphasized that strengthening fire safety education and policy enforcement was essential to reduce fire incidents in longhouse communities.

**KEYWORDS:** Fire safety; longhouse; knowledge; attitude; practice; awareness

## 1. Introduction

Sarawak constitutes the Malaysian state with the highest number of Indigenous ethnic groups, encompassing 34 distinct communities with a combined population of approximately 1.231 million people. These include, among others, the Iban, Kelabit, Kayan, Kenyah, and Berawan [1]. Around 70 percent of these groups still reside in traditional longhouses, which are integral to their cultural identity. Constructed primarily from sustainable materials such as ironwood, bamboo, palm leaves, and rattan, longhouses exemplify the communities' harmonious relationship with the environment [2]. A typical longhouse features a linear arrangement with a communal veranda (tanju) and an open gallery (ruai) for social activities, alongside private family rooms (bilik) [3]. However, the preservation of these traditional dwellings faces

challenges, including the scarcity of traditional building materials and the influence of modernization, which has led to design alterations [4].

Despite their cultural importance, longhouses remain vulnerable to fires due to their highly flammable wooden structures, reliance on open flames for cooking and lighting, and poor electrical installations [2]. Human negligence, locally referred to as the “3L syndrome” (Leka – distraction, Lupa – forgetfulness, and Lalai – carelessness), has also been identified as a major contributing factor [5]. Furthermore, the remote locations of many longhouses, situated deep within Sarawak’s dense jungles, limit the ability of the Fire and Rescue Department (BOMBA) to respond quickly during emergencies. A 2019 report by BOMBA documented 3,977 registered longhouses across Sarawak, with 164 fire incidents recorded between 2011 and 2019. These fires left more than 2,000 families homeless and caused financial losses estimated at RM138 million [2, 6]. In 2019 alone, longhouse fire losses exceeded RM10 million, while recent statistics reported 119 fire incidents across Sarawak between January and April 2024 [5]. These alarming figures underscore the urgent need for enhanced fire safety awareness, prevention strategies, and improved emergency response measures to safeguard longhouse communities from further devastation.

Raising awareness through community-based fire safety programs is crucial. Such initiatives can equip residents with the knowledge and skills to prevent fires, respond effectively during emergencies, and reduce negligence, while also protecting vulnerable groups such as children and the elderly. Expanding these programs across both urban and rural areas would help safeguard lives, protect property, and preserve the cultural and economic heritage of Sarawak’s Indigenous communities.

In line with this, the present study aimed to explore the levels of knowledge, attitude, and practice (KAP) of fire safety among residents of a selected longhouse in Miri, Sarawak. The findings are expected to provide baseline data on fire safety awareness and practices, which can serve as a guideline for stakeholders and policymakers in implementing effective strategies to reduce longhouse fire incidents. This study also aligns with the Sustainable Development Goals (SDGs). It contributes to SDG 3 (Good Health and Well-Being) by addressing measures that can reduce injuries, burns, and fatalities, thereby enhancing community health. It supports SDG 4 (Quality Education) by emphasizing the importance of awareness campaigns and training for longhouse residents, promoting lifelong learning in fire prevention and emergency response. Finally, the study strengthens institutional collaboration between local authorities, fire departments, and community leaders, supporting SDG 16 (Peace, Justice, and Strong Institutions) by advancing policies, regulations, and disaster preparedness initiatives.

## **2. Materials and Methods**

### *2.1. Study area.*

This cross-sectional study was conducted in a selected longhouse in Miri, Sarawak, in August 2024. Data were collected at a single point in time from a sample of 46 respondents. The study population consisted of the Iban community residing in the selected longhouse, which is located approximately 147 kilometers from Miri City. The longhouse was occupied by 23 families, or rooms, with a total population of about 200 individuals. It was a traditional longhouse accessible by road, requiring approximately two and a half hours of travel by car. The community was led by a leader known as the *Tuai Rumah*. Most residents worked as

farmers, while the younger generation often sought employment in the city and returned home on weekends or during major celebrations. The longhouse retained its traditional features, including the use of durable ironwood in its construction.

## 2.2. Questionnaire.

A self-administered questionnaire was used to collect data for the study. The instrument was adapted from previous studies [7–9]. It consisted of four parts, namely:

Part A: Socio-demographic information

Part B: Knowledge of fire safety

Part C: Attitude toward fire safety

Part D: Practice of fire safety

The Likert scale, ranging from Level 1 to 5 (Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, and Strongly Agree = 5), was used to evaluate the statements in the questionnaire. To ensure the reliability of the instrument, all the constructs (knowledge, attitude, and practice) were assessed, and Cronbach's alpha values were reported as shown in Table 1. The reliability analysis of all 25 items indicated that the questionnaire was acceptable, with an alpha value of 0.76.

**Table 1.** Reliability analysis of questionnaire constructs (N = 30).

Construct	No. of items	Cronbach's Alpha	Interpretation
Knowledge	10	0.83	Good
Attitude	7	0.72	Acceptable
Practice	8	0.72	Acceptable
Total	25	0.76	Acceptable

## 2.3. Target population and subject criteria.

The target population of this study comprised households and individuals residing in the selected longhouse. To ensure that the participants were appropriate for the study objectives, inclusion and exclusion criteria were established. The inclusion criteria required participants to be residents of the selected longhouse, of Iban ethnicity, and aged 13 years or older to ensure comprehension of the questionnaire. For participants below the age of 18, parental consent was obtained before participation. In addition, only individuals who were able to complete all items in the questionnaire were included. The exclusion criteria comprised individuals who were not residents of the selected longhouse, those younger than 13 years of age, and those unwilling to participate in the study.

## 2.4. Data collection and analysis.

The self-administered questionnaire was distributed to the respondents in the longhouse. A convenience sampling method was applied, where anyone who volunteered and agreed to participate was included in the study sample. The Statistical Package for the Social Sciences (SPSS) software was used to perform the analysis. Descriptive statistics such as means and percentages were reported, along with correlation analysis using Spearman's rho.

### 3. Results

#### 3.1. Socio-demographics.

Table 2 presents the socio-demographic characteristics of the respondents. The majority of respondents were aged above 40 years (39%), followed by those aged 36–40 years (17%), 31–35 years (15%), 26–30 years (13%), 21–25 years (8%), and 15–20 years (6%). All respondents were Iban (100%) and resided in longhouses. More males (54%) participated in the study compared to females (46%). In terms of occupation, most respondents worked as farmers (34%), followed by housewives (23%), students (17%), unemployed individuals (6%), and others (17%). Regarding education level, the majority had completed secondary school (43%), followed by primary school (28%), no formal education (19%), diploma (6%), and Bachelor's degree (2%). Most respondents (58%) reported a household monthly income of less than RM1,500.

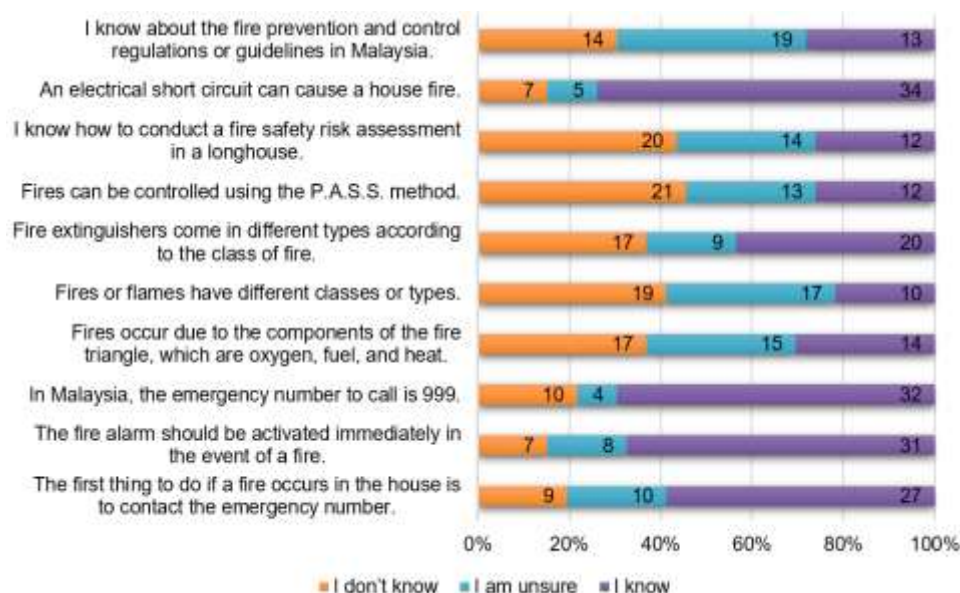
**Table 2:** Socio-demographics of respondents (N=46).

Variable		N	Percentage (%)
<b>Age</b>	15 – 20	3	6.5
	21 – 25	4	8.7
	26 – 30	6	13.0
	31 – 35	7	15.2
	36 – 40	8	17.4
	Above 40	18	39.1
<b>Gender</b>	Male	25	54.3
	Female	21	45.7
<b>Occupation</b>	Farmer	16	34.8
	Housewife	11	23.9
	Student	8	17.4
	Other	8	17.4
	Unemployed	3	6.5
<b>Education level</b>	No Formal Education	9	19.6
	Primary school	13	28.3
	Secondary school	20	43.5
	Diploma	3	6.5
	Bachelor Degree	1	2.2
<b>Monthly Income</b>	No Income	5	10.9
	Less than RM1,500	13	28.3
	RM1,500 – RM2,000	19	41.3
	RM2,001 – RM2,500	8	17.4
	RM4,001 – RM4,500	1	2.2

#### 3.2. Descriptive analysis of fire safety knowledge.

The distribution of fire safety knowledge levels is presented in Figure 1. The findings showed that 58% (N = 27) of respondents knew they should call the emergency number in the event of a fire, and 67% (N = 31) knew that the fire alarm should be activated immediately. However, only 32% (N = 15) correctly identified 999 as the official emergency contact number in Malaysia. In addition, 30% (N = 14) of respondents knew the basic components of the fire triangle (oxygen, fuel, and heat), while 37% (N = 17) stated they did not know and 32% (N = 15) were unsure.

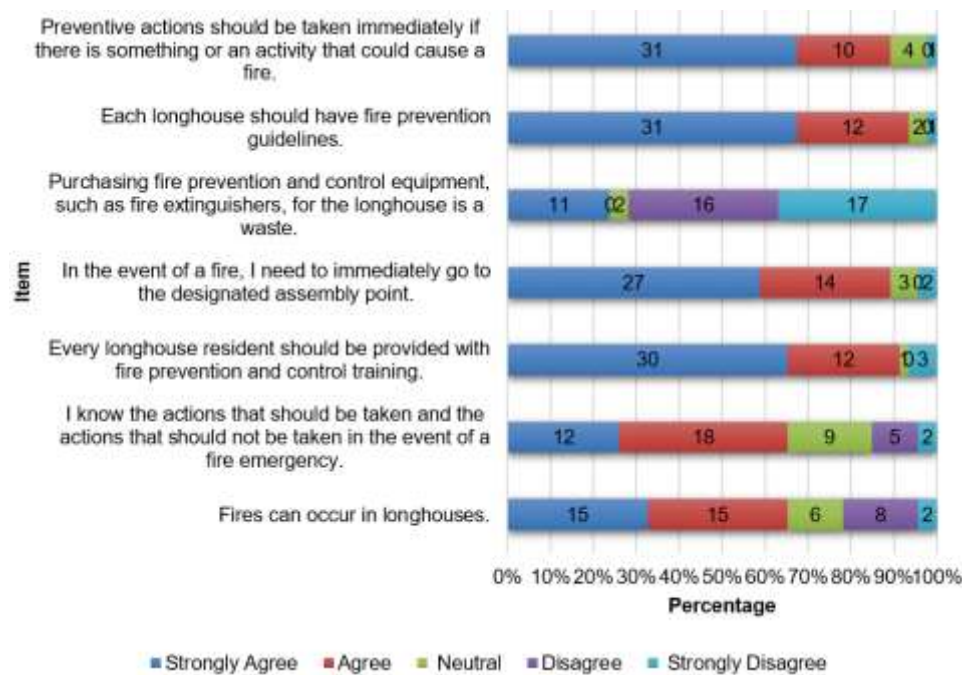
Only 21% (N = 10) of respondents were aware that fires have different classes or types, and 43% (N = 20) were familiar with the various types of fire extinguishers. The study also revealed that 26% (N = 12) of respondents were knowledgeable about the P.A.S.S. method for operating fire extinguishers and about fire safety risk assessments. The majority (73%, N = 34) recognized that electrical short circuits could cause house fires, while 15% (N = 7) did not know and 12% (N = 5) were unsure. With regard to fire prevention and control regulations or guidelines in Malaysia, only 28% (N = 13) of respondents were aware of them, while 71% (N = 33) either did not know or were unsure.



**Figure 1.** The distribution of fire safety knowledge among the respondents in the longhouse (N=46).

### 3.3. Descriptive analysis of fire safety attitude.

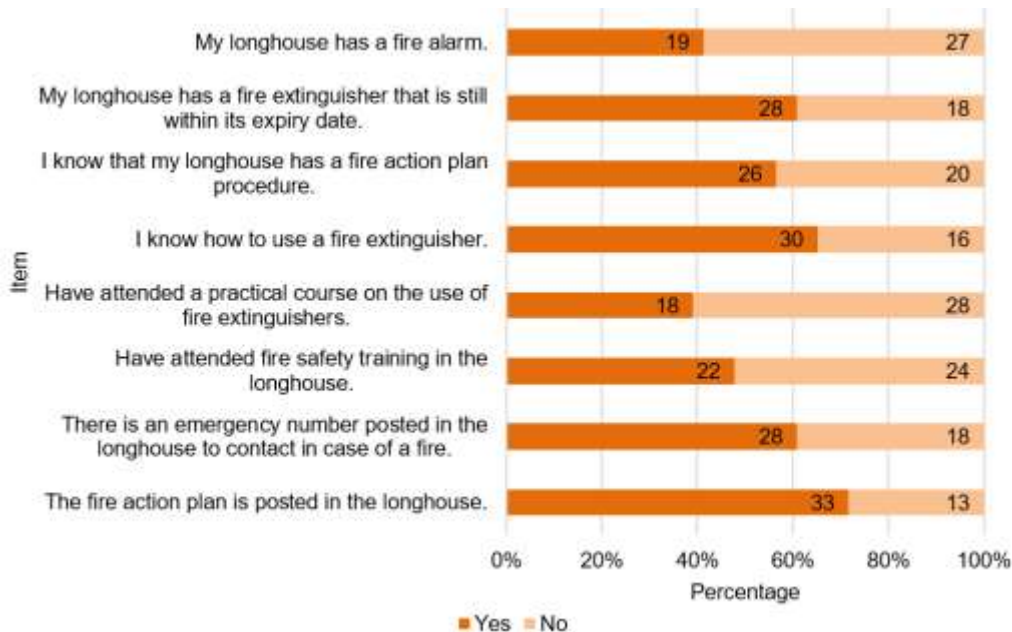
Figure 2 shows the distribution of fire safety attitudes among the respondents in the longhouse. A total of 32% (N = 15) of the respondents strongly agreed, and 15% (N = 7) agreed with the statement, “Fire can occur in the longhouse.” Most respondents responded positively to the statement, “I know the actions that should be taken and the actions that should not be taken in the event of a fire emergency,” with 26% (N = 12) strongly agreeing, 39% (N = 18) agreeing, 19% (N = 9) remaining neutral, 10% (N = 5) disagreeing, and 4% (N = 2) strongly disagreeing. A majority of the respondents strongly agreed (65%, N = 30) and agreed (26%, N = 12) with the statement, “Every longhouse resident should be provided with fire prevention and control training.” Additionally, 58% (N = 27) strongly agreed, and 30% (N = 14) agreed with the statement, “In the event of a fire, residents should immediately go to the designated assembly point.” The study revealed that most respondents strongly disagreed (37%, N = 17) and disagreed (34%, N = 16) with the negative statement, “Purchasing fire prevention and control equipment, such as fire extinguishers, for the longhouse is a waste.” Almost all respondents positively responded to the statement, “Each longhouse should have fire prevention guidelines,” with 67% (N = 31) strongly agreeing and 26% (N = 12) agreeing. Similarly, for the statement, “Preventive actions should be taken immediately if there is something or an activity that could cause a fire,” a majority strongly agreed (67%, N = 31) and agreed (21%, N = 10).



**Figure 2.** The distribution of fire safety attitude among the respondents in the longhouse (N=46).

### 3.4. Descriptive analysis of fire safety attitude.

Figure 3 presents the distribution of fire safety practices among the respondents. The study found that the majority answered “Yes” to the statement, “The fire action plan is posted in the longhouse.” Additionally, 60% (N=28) of the respondents indicated that an emergency number is posted in their longhouse. Approximately 47% (N=22) of the respondents had attended fire safety training in their longhouse, while 52% (N=24) reported having never attended any fire safety training. Most respondents (65%, N=30) indicated that they know how to use a fire extinguisher.



**Figure 3.** The distribution of fire safety practice among the respondents in the longhouse (N=46).

Furthermore, 56% (N=26) of the respondents answered “Yes” to the statement, “I know that my longhouse has a fire action plan procedure,” while 43% (N=20) answered “No.” The majority (60%, N=28) were aware that their longhouse has a fire extinguisher that is still within

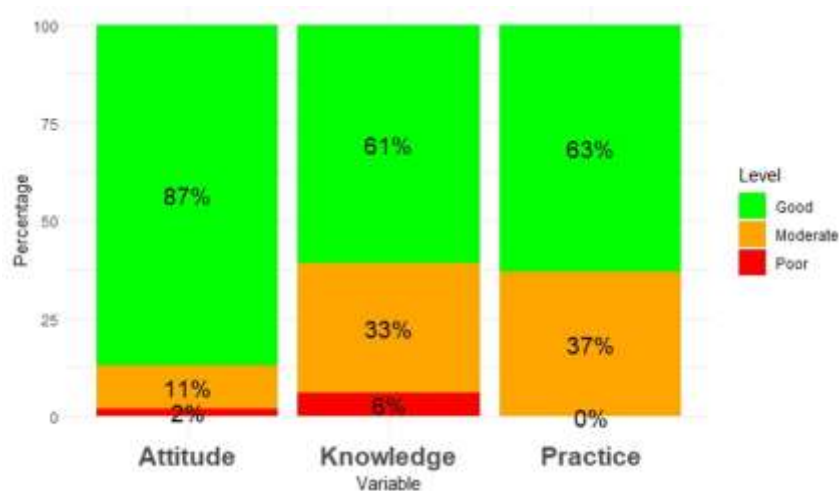
its expiry date. A significant majority, 87% (N=40) and 84% (N=39), responded “No” to the statements, “My longhouse has a fire alarm system”.

### 3.5. KAP level of fire safety.

Figure 4 illustrates the levels of fire safety knowledge, attitudes, and practices (KAP) among the longhouse community. Fire safety KAP was categorized into Good, Moderate, and Poor based on specific scoring criteria:

- Knowledge: Good (21–30), Moderate (11–20), Poor (1–10)
- Attitude: Good (25–35), Moderate (15–24), Poor (1–14)
- Practice: Good (15–20), Moderate (10–14), Poor (1–9)

The findings showed that 87% (N = 40) of respondents demonstrated a good attitude towards fire safety, while 11% (N = 5) had a moderate attitude and 2% (N = 1) had a poor attitude. In terms of knowledge, 61% (N = 28) of respondents achieved a good level, 33% (N = 15) were at a moderate level, and 6% (N = 3) had poor knowledge. Similarly, 63% (N = 29) reported good fire safety practices, while 37% (N = 17) demonstrated a moderate level of practice.



**Figure 4.** The distribution of Knowledge, Attitude, and Practice levels.

### 3.6. Correlation analysis between KAP level.

The study found no significant correlation between knowledge, attitude, and practice of fire safety among respondents in the longhouse, as shown in Figure 5. The correlation coefficient (r) between knowledge and attitude was -0.05 with a p-value of 0.73, indicating a weak and non-significant relationship. The correlation between knowledge and practice was  $r = 0.27$  with a p-value of 0.07, suggesting a positive but non-significant trend, as the p-value exceeded the conventional threshold of 0.05. Similarly, the correlation between practice and attitude was  $r = 0.11$  with a p-value of 0.45, further confirming the absence of a statistically significant association.





Figure 5. The relationship between KAP of fire safety (Spearman's rho test).

#### 4. Discussion

The majority of respondents were aged above 40 years, which reflects a mature population with potentially greater responsibilities in ensuring fire safety in their longhouse. A slightly higher proportion of male respondents than female respondents participated in the study, and all respondents were of Iban ethnicity. This balance underscores the importance of designing fire safety interventions that are inclusive and address the specific roles and responsibilities of both genders in fire prevention and response within the longhouse community. The employment distribution revealed that most respondents were farmers. Farmers may face specific fire risks associated with agricultural activities, such as burning vegetation, while housewives may encounter fire hazards in household settings.

In terms of education, a significant proportion of respondents had completed only primary or secondary school. This highlights the need for fire safety training materials to be simple, visual, and accessible to accommodate varying literacy levels within the community. Moreover, the present study shows the economic challenges faced by the community, with 28% and 41% of respondents reporting a household monthly income of less than RM1,500 and RM1,500 to RM2,000. Financial constraints may limit the ability of households to invest in fire safety equipment, such as fire extinguishers or smoke detectors. Therefore, it is crucial to provide essential fire safety tools through subsidized programs or government initiatives to alleviate this barrier and enhance preparedness in the longhouse.

A majority of respondents demonstrated basic awareness by knowing the need to call an emergency number in the event of a fire (58%) and the importance of activating a fire alarm immediately (67%). However, only 32% correctly identified 999 as Malaysia's emergency contact number for fire emergencies. This gap underscores a fundamental issue in disseminating vital information that could delay timely response during fire incidents. According to [10], efforts should be made to raise awareness about emergency protocols through community campaigns (i.e., face-to-face methods) that are more effective than mass media campaigns.

Knowledge of the fire triangle, an essential concept in fire prevention, was limited, with only 30% of respondents correctly identifying its components. A significant proportion (37%)



admitted not knowing this information, and 32% were unsure. This lack of understanding may hinder residents' ability to recognize and mitigate fire hazards effectively. Thus, the fire safety education is crucial to empower people with the knowledge needed to prevent fires [11]. Awareness of fire classification and appropriate extinguishers was also low. Only 21% of respondents were aware of the different classes or types of fires, and 43% were familiar with various fire extinguishers. This limited understanding could lead to ineffective or unsafe responses during emergencies. Training sessions focusing on practical demonstrations and hands-on activities could improve familiarity with fire types and extinguisher usage [12, 13].

Although most respondents (73%) recognized electrical short circuits as a potential fire hazard, the remainder either did not know (15%) or were unsure (12%). This indicates that while there is a general awareness of common fire causes, continuous education is needed to reinforce this knowledge and expand it to include less obvious fire risks. The lack of awareness regarding the P.A.S.S. method for using fire extinguishers (26%) and fire safety risk assessments suggests that many residents may not be prepared to respond effectively to fire emergencies. This presents an opportunity to introduce training programs that cover fire safety protocols in depth, with practical demonstrations to ensure comprehension and retention. The low awareness (28%) of fire prevention and control regulations or guidelines in Malaysia is concerning. A significant majority (71%) either did not know or were unsure about these regulations, indicating a disconnect between policy and community-level knowledge. Local authorities and fire safety organizations should work to bridge this gap by distributing clear, accessible information about fire safety standards and guidelines [14].

A significant proportion of respondents (47%) acknowledged the possibility of fires occurring in the longhouse, indicating an awareness of the risks. However, this figure also suggests that a notable percentage of residents may underestimate the likelihood of such incidents, highlighting the need for further educational initiatives to emphasize the potential threats and their implications. The majority of respondents (91%) expressed strong support for fire prevention and control training for longhouse residents. This consensus underscores the community's recognition of the importance of equipping themselves with the knowledge and skills needed to handle fire emergencies effectively. Training programs could capitalize on this positive attitude to foster community-wide participation and preparedness [15, 16].

Encouragingly, 88% of respondents emphasized the importance of going to a designated assembly point during a fire. This reflects a good level of awareness regarding critical emergency actions, which is vital for ensuring safety during such incidents [17]. However, efforts should continue to reinforce this behaviour, especially for the minority who remained neutral or disagreed. The community's attitude toward investing in fire safety equipment is also favourable, with 71% of them support that purchasing fire prevention and control equipment is crucial for their longhouse. This positive attitude toward resource allocation provides an opportunity to advocate for better funding and acquisition of fire safety tools. Majority of the them (93%) agreed that each longhouse should have fire prevention guidelines. This demonstrates a clear demand for formalized fire safety measures. This support extends to the belief that immediate preventive actions should be taken if a fire hazard is identified, as evidenced by the 88% responses. These findings highlight the residents' proactive attitude toward fire safety and their willingness to address potential risks promptly.

The presence of fire action plans and emergency numbers, acknowledged by 60% of respondents, signifies a foundational level of fire safety awareness. Such measures are crucial

as they ensure that residents have immediate access to essential information during emergencies. However, the results show significant disparities in training and equipment-related practices. While nearly half of the respondents (47%) have attended fire safety training, the slightly larger proportion (52%) who have never participated in such training points to a need for broader outreach and consistent fire safety education programs. A previous study has proved that higher fire safety knowledge related to increased awareness of precautionary and fire safety training can enhance community preparedness and reduce fire-related injuries [18].

The finding that 65% of respondents know how to use a fire extinguisher is encouraging and reflects a level of practical fire safety competence within the community. Furthermore, 60% of respondents are aware of the presence of fire extinguishers within their longhouse, and these extinguishers are noted to be within their expiry dates, ensuring readiness for use in an emergency. In contrast, the availability and awareness of other critical fire safety equipment appear to be alarmingly low. Only 41% of respondents reported the presence of smoke and fire detectors in their longhouse, and an even smaller number (13%) indicated that their longhouse has a fire alarm system. The absence of basic detection systems limits the community's capacity for early fire detection and intervention. Similarly, the lack of a fire hose, as reported by 84% of respondents, further underscores the insufficient availability of firefighting resources.

These results indicate that although the longhouse community has made progress in certain areas of fire safety, there are significant aspects that need immediate attention. Prioritizing the installation of smoke detectors, fire alarm systems, and fire hoses is crucial, as these tools are vital for effective fire prevention and response. Furthermore, improving communication and awareness regarding the fire action plan, which only 56% of participants reported being aware of, is essential for coordinated emergency responses.

The majority of respondents exhibited good levels of fire safety knowledge (61%). While most respondents demonstrated good knowledge of fire safety, a notable 33% had only a moderate understanding, and 6% had poor knowledge. This suggests that while fire safety education has been somewhat effective, there is still a gap in awareness, particularly among those with lower scores. Fire safety training, insufficient access to educational materials, and a lack of structured fire safety programmes in rural communities may contribute to this knowledge gap.

The study revealed that 87% of respondents had a good attitude towards fire safety, which is a positive finding. This high percentage suggests that most community members understand the importance of fire safety measures and are willing to adopt safe behaviours. However, the presence of 11% of respondents with a moderate attitude and 2% with a poor attitude indicates that some individuals may not fully appreciate the risks associated with fire hazards.

Despite good knowledge and attitudes, only 63% of respondents reported good fire safety practices, while 37% had a moderate level. Factors such as accessibility to fire extinguishers, the presence of fire escape plans, and prior experience with fire incidents may influence practice levels. Practical training and fire drills should be introduced to enhance the community's ability to apply their knowledge effectively [18]. Ensuring that households have functional fire extinguishers, clear emergency exit routes, and basic fire response training can significantly improve fire safety practices [19].

The correlation analysis revealed weak relationships between these variables, suggesting that higher fire safety knowledge does not necessarily translate into positive attitudes or improved fire safety practices. In this study, a possible explanation for the lack of correlation

between knowledge and attitude is that while some respondents may possess fire safety knowledge, they may not perceive fire risks as immediate threats, leading to a lack of concern or motivation to adopt fire safety measures. Similarly, the weak correlation between knowledge and practice suggests that having fire safety knowledge alone is insufficient to drive proper safety behaviors. A previous study conducted among secondary students in Malaysia also reported that knowledge did not exhibit a significant relationship with attitude or practice in fire evacuation [20, 21]. The study conducted by Salmawati et al. also found that there was no relationship between knowledge and attitudes with fire prevention preparedness among respondents in Indonesia. The behaviors change often requires not only knowledge but also reinforcement through training, community engagement, and policy enforcement [7, 22]

The correlation between practice and attitude being statistically insignificant suggests that even individuals with a positive attitude toward fire safety may not necessarily engage in proactive fire prevention behaviors. This could be attributed to limited fire safety training, lack of past fire incidents, or complacency due to perceived low fire risks in the longhouse setting. As reported by Saeed et al. [8], a positive attitude can lead to better fire safety practices. Their study found that respondents with experience in fire drill training demonstrated good knowledge and a positive attitude, which contributed to improved fire safety practices.

There are several limitations acknowledged in this study. First, the study was conducted in a single longhouse in Miri, Sarawak, with a small sample size (46 respondents), which may not fully represent fire safety awareness and practices across longhouse communities in Sarawak. Future studies should consider a larger sample size and conduct comparative studies across different longhouse communities to identify regional variations in fire safety knowledge, attitude, and practice. Second, the study relied on a self-administered questionnaire, which may introduce response bias, as respondents might have overestimated or underestimated their fire safety KAP. To improve accuracy, future research should integrate survey data with on-site fire safety inspections, fire drills, or simulation exercises to assess actual awareness and response behaviors. Although the findings showed no significant correlation between knowledge, attitude, and practice, this does not necessarily imply that knowledge has no impact on behavior. Other factors, such as social influences, cultural beliefs, and enforcement of safety regulations, may mediate the relationship between fire safety KAP. Therefore, future studies should consider intervention-based research to evaluate the impact of fire safety education, hands-on training, and community drills on behavioral change.

Despite these limitations, the findings of this study can be used by authorities and the government to act in preventing fire incidents and improving fire safety among longhouse communities in Sarawak. This study can serve as a catalyst to encourage more research on fire awareness and preparedness in both rural and urban areas.

## 5. Conclusions

In conclusion, most respondents demonstrated good knowledge and positive attitudes toward fire safety, but gaps in fire safety practices indicated that knowledge alone did not translate into effective behavioral change. Therefore, effective programs such as practical training sessions, fire drills, and community-based engagement initiatives should be prioritized to strengthen fire safety and reinforce behavioral change. By implementing a holistic approach that integrates education, infrastructure, and policy, fire safety resilience in longhouse communities can be significantly enhanced. This is crucial to reducing the risk of devastating fires and ensuring the

protection of both the community and their cultural heritage. The novelty of this study lay in providing baseline data on fire safety knowledge, attitudes, and practices specifically among the Iban community residing in longhouses in Sarawak. To the best of our knowledge, this was the first study of its kind focusing on this unique cultural and rural context. The findings are expected to serve as a catalyst for further research on fire safety awareness in Sarawak, particularly in rural communities, and to inform targeted interventions and policies.

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## Author Contribution

Conceptualization, Methodology, Data Analysis, and Supervision: Josfirin Uding Ranga; Data Collection and Writing (Original Draft): Josfirin Uding Ranga, Nancy Ujan, and Rona Bang Tan; Writing (Review & Editing): Wilson Lio Apoi and Noraisikin Sabani

## Competing Interest

All authors declare no competing interest from any other party influences this research.

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