



# Qualitative Assessment of Challenges and Impact on Health and Wellbeing of Malaysian Firefighters

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**Abstract:** Operational response by firefighters necessitates a sudden shift from rest to near-maximal physical effort, as well as almost instant stress management due to the nature of work to be readily available attending emergencies. However, more is needed to know about the other challenges faced by firefighters and the impact of those challenges. The purpose of this study was to explore the challenges of Malaysian firefighters and the impact of the challenges. The study adopted a qualitative research method through semi-structured interviews with 23 firefighters in the central region of Malaysia, consisting of supervisors and subordinates. Responses to each question were qualitatively analyzed to determine themes. Results suggest that two superordinate themes emerged relating to workplace and personal challenges, further divided into themes and subthemes. The challenges impact the firefighters psychologically, further divided into mental, physiological, emotional, and behavioural and psychosocial impacts. Exploring challenges and their impact on firefighters provides a foundation and guidance for management, supervisors, or mental health providers in promoting the well-being of firefighters. This study discovered promising avenues for future research regarding challenges and impact on firefighters. It demonstrated that understanding the challenges and their impact is significant in identifying preventive measures among high-risk occupations to support their mental health. The result will eventually provide a better understanding of how to enhance the well-being of firefighters concerning their job descriptions.

**Keywords:** firefighters, emergency personnel, first responder, challenges, mental health, wellbeing

## 1. INTRODUCTION

Firefighting is one of the most stressful jobs exposed to emergency cases and can affect either physical or mental firefighters (Beaton et al., 1997; Norwood & Rascati, 2012). The incidents can be highly stressful, intense, and traumatic, and require high physical involvement and they have to be physically and mentally prepared. Although firefighters have been trained during their recruitment or throughout their services and they might develop resiliency upon attending the emergency incidents, previous researches suggest that prolonged, repeated exposure may cause negative psychological consequences from their experiences (Jahnke, Poston, Haddock, & Murphy, 2016).

In addition to the traumatic stressors, firefighters are also susceptible occupational stressors such as exposure to hazardous material, fears of injury to self and co-workers, and emotionally charged situations (Katsavouni, Bebetos, Malliou, & Beneka, 2016) and impact the firefighters' mental health (Sawhney, Jennings, Britt, & Sliter, 2018). Although researchers

acknowledged that organisational stress and strains mean different (Cooper, Dewe, O’Driscoll, 2001), previous studies are limited to foreign countries with the difference of the cultural context. This provides gap in the studies among the Malaysian firefighter population.

While there is extensive research on the mental health of firefighters in different countries, only a few research conducted among the Malaysian firefighters’ population specifically related to mental health, such as research by Dahlan Malek, Adi Fahrudin, and Ida Shafinaz (2009) on the source of stress and level of mental health and work stress among by Noraini and Noorasmah (2019). The focus of research among Malaysian firefighters is also highlighted the physical aspect, such as the research on physical fitness by Atikah, Nihayah, Leonard, Omar, Noor Ibrahim, et al. (2015) and body weight related to nutrition intake as conducted by Nor Atiqah, Razalee, Arnida Hani and Mohd Sani (2017). Previous studies, especially among the Malaysian firefighter population, have yet to treat the aspect of challenges among the firefighters and how they impact them in detail. Despite the importance of having physical fitness among the firefighter population, the psychological aspect must be considered, as it will contribute to the firefighters’ performance outcome (Yung, Du, Gruber, & Yazdani, 2021).

Several studies related to challenges specific to work settings have been conducted in the previous studies, such as the study on physical and mental health challenges, conducted by Smith, Holmes, and Burkle (2019), the study on challenges in the exposure of traumatic events by Richardson and James (2017) and workplace challenges among female firefighters by Mcquerry, Kwon, and Johnson (2019). One fascinating insight from these studies is the challenges highlighted from the workplace setting, either during their operational duties or throughout their services as firefighters, and how the challenges impact their mental health. Most studies also note that the terms mental health challenges and psychological challenges are interchangeably used, although it refers to the same context. Rather than using the keywords of workplace challenges, research involving firefighters is commonly on the exploration of the experiences in the duties, as in the study conducted by J Jahnke et al. (2016) and Smith et al. (2019), the impact of health condition due to operational duties by G Groot, Caturay, Khan, and Copes (2019) and Yip et al. (2016) and the impact of mental health in operational duties as conducted by Kim et al. (2019), Carleton et al. (2019) and Milligan-Saville et al. (2018). Although a challenge, as mentioned by Maslow (1943), is a fundamental aspect of growth, understanding challenges and issues provides a better understanding of psychological well-being and further impacts job satisfaction and performance. This study aims to answer the following research questions; (1) What challenges are faced by Malaysian firefighters? and (2) How do the challenges impact Malaysian firefighters?

## **2. METHOD**

The study design of this research is a qualitative methodology where the researcher conducted multiple case studies in Malaysia fire stations to understand how challenges are perceived in the firefighter’s context for three fire stations. During the case study inquiry, the researcher conducted semi-structured interviews with the supervisors and the subordinates about the challenges in firefighter services and how the challenges impact them.

### ***Population and Setting***

Participants were selected through a purposive sampling technique. The sample size was determined by theoretical completeness or known as data saturation. The inclusion criteria of the expert group are 1) supervisors or leaders in the emergency response organization who have served more than 24 months with a minimum of five subordinates. The inclusion criteria of the

firefighters' focus group discussion (FGD) are 1) firefighters with more than six months of working experience. The participant recruitment process started with identifying the selected emergency response organisation in Malaysia.

### ***Design and Procedures***

The researcher developed the interview protocol based on the research questions and the theories used in this study: Affective Event Theory, Mental Health Dual Continuum Model, and Transactional Model of Stress and Coping. Separate interview questions were derived for the supervisors and the subordinates to reflect the scope of questions for each population. The interview questions for the subordinates conducted via focus group discussion focused more on their own experience and perception. In contrast, the questions to the supervisors explore their own experience and perception on the subordinates under their supervision. The interview protocol was designed in bilingual; English language and Malay language. The Human Ethics Review Committee was obtained from the university before conducting this study. A permission letter was sent to the emergency response organization, which provided the approval and consent to collect data and interview the respective sample of participants. The interviews were conducted in their respective fire stations, using Malay language, which is the participants' native language.

### ***Analysis***

The transcripts of the interviews were stored electrically and systematically in the researcher's online storage platform to allow real-time cross-checking and editing. This will provide a comprehensive audit trail to revisit and track the data. Lichtman's Model (2014) was used as a guideline for data analysis which utilised the Three Cs of Data Analysis; (1) codes, (2) categories, and (3) concepts. The steps in coding are broken down into six steps (1) initial coding: going from responses to summary ideas of the responses, (2) revisiting initial coding, (3) developing an initial list of categories, (4) modifying the initial list based on additional rereading, (5) revisiting the categories and subcategories, (6) moving from categories to concepts.

## **3. RESULT**

The total number of participants in the study was 23 firefighters, which involved eight supervisors and 15 subordinates in three fire stations. All participants are male. The mean age of participants who participated in the study was  $M=34.22$ , with a minimum age of 24 and a maximum age of 43. The average years of service were  $M=13.37$ . Out of the 23 firefighters, 20 firefighters are married. Specific codes, PA1 until PA3 were used to address the respondents and maintaining their confidentiality. The results are organised into three category levels; superordinate themes, themes, and subthemes. The finding identified three superordinate themes, nine themes, and 16 subthemes to answer the research question, as shown in Table 1. The development of superordinate themes is constructed across the data set once coding and theme development are complete for each data item.

**Table 1** Superordinate Themes, Themes and Sub-themes by Research Questions

Research Question	Superordinate Theme	Themes	Sub-theme
What are the challenges faced by Malaysian firefighters?	Workplace challenges	Challenges with the management	Inefficient management or operation system Staff welfare Managing subordinates Communication with management
		Challenges during operational duties	High-risk and traumatic jobs Lack of resources Training needs Public interferences
		Challenges on the nature of works	Standard Operating Procedure (SOP) and work shift Over workload Clerical task
		Challenges of the working environment	Supervisor-subordinate relationship Workplace politics
What are the challenges faced by Malaysian firefighters?	Personal challenges	Personal and family challenges	Individual Family Economy or Finances Values or Work Ethics
		Professional challenges	
How do the challenges impact Malaysian firefighters?	Psychological impacts	Mental and physiological impacts	
		Emotional impacts	
		Behavioural and Psychosocial impacts	

**Research Question 1: What are the Challenges Faced by Malaysian Firefighters?**

Following the interview conducted with the participants, the challenges were identified as (1) workplace challenges and (2) personal challenges. The workplace challenges were further divided into (1) challenges with the management, (2) challenges during operational duties, (3) challenges on the nature of work, and (4) challenges of the working environment.

The participants, consisting of supervisors and subordinates, highlight issues on staff welfare revolving around the application of leave (PA1, PA5, PA6, PA7, PA10) due to unclear communication and arrangement.

*"...if the management, the administration was changed, it means there will be an effect for us in the future. For example, he has accumulated leave up to 150 days in a case like this. However, there is no record. It means (there is no record) how many days he has left." (PA10)*

The participant (PA7), a subordinate, highlighted a fatal incident where the public blamed the firefighters as they could not save victims from fire tragedy causing fatalities. The management team did not devise a backup statement on behalf of the firefighters.

*"But in terms of the department wanting to back up the fire department, there is none. It seems that the fault was inclined to the members (firefighters)." (PA7).*

The sub-theme of challenges during operational duties includes (1) high-risk and traumatic jobs, (2) lack of resources, (3) training needs, and (4) public interferences. Most participants in the current study highlighted the challenges during the operational duties, which are physically demanding and involve hazardous environmental conditions. When considered in conjunction with the identified occupational-specific tasks, the severity of the operational task is unique to the location of the fire stations. The participants, mutually agreed by the supervisors and subordinates (PA10, PA11, PA12, PA19), also highlighted the lack of resources and the challenges in firefighter duties regarding monetary resources or equipment.

*"In this department, there is no clerical term. They don't have." (PA10).*

*"Because of this, I have been proposing this for a long time. About time management, mind management, but that's it, yes, sometimes when it involves cost, not everything can be done." (PA11).*

The supervisors also mentioned training as a source of challenges in firefighter duties. They have to keep learning new things, such as administrative work (PA4) and adapting to new cases, such as dealing with snakes (PA2).

*"...but, when will we do this kind of work. The people are not that smart; I don't mean to disparage them. By saying not smart, it means if we learn it today, it does not mean we will get it right away, which means that maybe have to take a course for a week or two. (laugh). If we were to take this course, we won't be able to catch up with the other external courses." (PA4)*

This sub-theme described the nature of work that contributed to the challenges among Malaysian firefighters. This sub-theme includes four themes that the participants discussed; (1) standard operating procedure (SOP) and work shift, (2) over workload, (3) clerical tasks, and (4) workplace politics. The nature of the work of firefighters in attending emergency calls requires them to abide by the strict standard operating procedure (SOP) and work shift. The participant, who is a subordinate, highlighted that the SOP might be a challenge. However, they understand that it was designed to put the firefighter's safety as its highest priority. Other than that, the participant, a supervisor in the current studies, highlighted workload as one of the challenges in firefighting duties explained by the additional clerical and administrative work and the limited amount of workforce (PA4).

*"There are many examples, like the clerical work mentioned just now. Sometimes we think that is a small matter. However, it seems that clerical work can be stressful for certain people if it does not align with their soul." (PA4).*

The next theme was related to challenges of the working environment that involved the setting, social features, and physical conditions in which the firefighters perform their job. These challenges were divided into two sub-themes; 1) subordinate-superior relationship and 2) work politics. Both aspects have been mentioned by the participants mainly about the conflict in the relationship involving the line of communication (PA4, PA19), where both participants are

supervisors, the method of communication (PA17, PA18), the subordinate and unclear instruction (PA17, PA19), both mutually agreed by the supervisor and subordinate.

*"If it is outside, the field operation, there is no problem. The real challenge is in the station. No one, right? I know people have complained to me. Working time. When there is a problem with the officer, they will be stressed out going to work."* (PA4)

*"...because now the commands are done via WhatsApp, so that is disturbing."* (PA17)

This superordinate theme 2 focuses on another aspect of firefighters' challenges during their services: personal challenges. The personal challenge is further scaled down to two themes which are 1) personal and family challenges and (2) professionalism challenges. Across this personal and family challenge theme, three sub-themes were identified revolving around personal challenges; 1) individual, 2) family, and 3) economy or finances. On the other hand, professionalism challenges are further divided into two sub-themes which are (1) social characteristics and (2) values or work ethics. Most of the participants mentioned individual personal challenges, which revolved around physical health (PA1, PA11, PA2), safety issues (PA22), and resiliency (PA5). Both supervisors and subordinates mutually agree upon these themes.

*"...health as well. We do not even know (our health) inside. So, I think that is the way it is."* (PA1)

*"...maybe after this I will be more careful and appreciate my friends and always remember what had happened."* (PA22)

*"...like my experience, I think during the recruit. In recruits, there may be pressure. It means when we want to enter from the public to members (firefighters). During the training, some cannot accept the training. Culture shock."* (PA5)

In terms of family, the challenges revolve around the inability to fulfil family needs (PA3), work scope misunderstanding (PA11), unsettled family issues (PA7) that may affect the work-life balance, and if not managed properly, will affect the job performance. Both the supervisors and the subordinates mutually agree upon these matters.

*"...there is always a conflict with the family, but when I get a promotion to change in the operational task, I will, even at the initial stage, experience the same thing too, because they did not understand my scope and duties."* (PA11)

*"Some of them want to get married, but their mother and father are not well, and they can't always go back."* (PA7)

The second subtheme under personal challenges is professionalism challenge in which addressed the traits or skills specifically related to the scope of firefighter. This theme is divided into two sub-themes which are 1) social characteristics and 2) values or work ethics. PA3, a supervisor, highlighted the social characteristics in terms of mental and physical strength, which is then supported by another supervisor from a different fire station, PA19 quoting that firefighters should always be ready regardless of the instruction.

*"...but with Sir x, he's a little different. Because if he says A, he will become B. After it becomes B, it has to become C, so they have to think until Z. When they have to think until Z, that means it's over. It's finished. However, if they think on A, they do A, meaning it is still not fulfilling."* (PA3)

### ***Research Question 2: How do the Challenges Impact the Malaysian Firefighters?***

The second research question explored how the challenges impact firefighters. The superordinate theme that emerged for this research question is the psychological impact. Under this superordinate theme, three themes were identified; 1) mental and physiological impacts, 2) emotional impacts, and 3) behavioural and psychosocial impacts.

Among the physiological impacts mentioned by the participants is headache; *"...because I am not only having palpitations. I went to a neuro because of a terrible headache. Every day I have a headache. I do not know. I stopped caffeine and drank caffeine again after that."* (PA1) and nausea; *"So that's where the mental state, saying like 'It must be dizzy'.... that means it is disturbed."* (PA17), heart palpitation due to phobia; *"...previously, we said, we have to attend operational duties involving a snake, especially when it involves pythons, which is common. However, when it involves this more poisonous snake, I can feel the heartbeat fast."* (PA2), and *"...I have also experienced trauma myself. Even now, I still have a phobia related to mirrors."* (PA11) and sleep deprivation and feeling lethargy; *"... it's like more than sleeping, isn't it...right after a break, we resume work, right? When we go out, even when we go out, it's like we are tired too."* (PA16).

PA22, a subordinate, mentioned that his emotions were affected when he witnessed his colleagues' death during operational duties; *"...I am more towards seeking God. Because for me, I saw the death of 6 of my six friends, because I should have been the 7th at that time. However, one thing that is hard to accept in front of our eyes because we are rescuers, we go saving others. Always save the other people."* Public pressure and interferences also become the source of stress that might interfere with emotion during the operational work, as shared by PA11, a supervisor; *"...right. It means that the public (civilians) is more advanced in teaching. That time, our emotions will be suddenly disturbed."* Despite this, PA11 did mention that he recognized the changes in the emotion of their subordinates and took intervention to resolve when needed; *"Sometimes each of these members they came to work, in the beginning, they don't show any signs but when we see them, we know that this person must have something, what is the sequence."*

## **4. DISCUSSION AND CONCLUSION**

### ***Research Question 1: What are the Challenges Faced by Malaysian Firefighters?***

Numerous studies have identified the challenges in the working environment of firefighters, especially the work of firefighters who are highly involved in high-risk and traumatic events. Unique to different countries, the challenges during the operational duties of firefighters differ in geographical location and climate. Despite the similar scope, the standard operating procedure might differ in adapting to the local context. Addressing the first research question, results from the qualitative analysis showed that the challenges of firefighters are highly contributed by two superordinate themes, which are (1) workplace challenges and (2) personal challenges.

In this study, the participants reported the workplace as the source of challenges. When considered in conjunction with the identified occupational-specific tasks, the severity of the operational task is unique to the location of the fire stations. These findings support the data from previous findings where firefighters face the physical challenges of the occupation-specific task and environmental conditions (Melton et al., 2019), exposures to diverse events, including sudden violent or accidental deaths, serious transportation accidents, and physical assaults (Carleton et al., 2019). The participants agreed that the challenges include the lack of

monetary resources and equipment. This is similar to the finding from Duran, Woodhams, et al. (2019), where the fire department receives austerity cuts and the employers are unable to fulfill the perceived obligation, such as providing good pension schemes, the firefighters will focus on short-term and monetary exchange (Lester et al., 2007). In line with Blau's (1964) Social Exchange Theory, employees try to balance the exchange between themselves and their employers, such as expecting appropriate recompense (current and future) for their demanding and dangerous job. When an imbalance appears unlikely to be corrected, negative consequences such as resignation can occur.

The findings identified training as a source of challenges in firefighter duties. They must keep learning things like administrative work and adapting to new cases, such as those involving snakes. Numerous trainings have been organised by the fire department, which is essential for the firefighters' learning and growth. Despite seeing this as a challenge, the supervisor participant highlighted that the reasons for attending the training are justifiable to enhance their firefighting career. The physical training especially for operational duties such as the cardiovascular endurance test and agility test is important for physical performance as what have been reflected by experiment conducted by Kamarudin, Abd Karim and Azizuddin Khan (2022) where the intervention group reported significant increase of performance during the post-test compared to the control group. At the same time, Abelson (2019) also indicated that having a solid education and learning provides a sense of security in emergency care and caring for relatives.

Previous studies have explored workplace challenges that may emerge from a variety of sources, such as the pace of work, the nature and frequency of feedback with co-workers and management, and the degree of involvement an employee is allowed (Martin, 2005; Myers & Sadaghiani, 2010). Highlighting the importance of debriefing after an incident as part of staff welfare, previous studies reported that debriefing brings thoughts and feelings to the surface for processing and closure (Abelson, 2019), which is also supported by Miller et al. (2018) found out informal debriefing led to higher compassion satisfaction and lower burnout among the firefighters. Therefore, in addition to debriefing, the current study highlighted the importance of having a comforting statement from the management when such incidents become sensational nationwide.

Another issue on staff welfare was regarding denying compensation for accidents during work. Rejection of workers' compensation claims, experiencing occupational injuries (Kim et al., 2021), and Effort-Reward Imbalance (Zhang et al., 2021) have been shown to increase the risk of depressive symptoms among firefighters. It is conceivable that occupational injuries could lead to financial hardship from medical costs, which could be a stressor affecting depression symptoms (Chung & Cheng, 2017; Kim, 2013; Kim & Choi, 2016). Additionally, alterations in physical appearance, impairment of physical function, unfavourable evaluations of the safety atmosphere at work, and poor quality of life may operate as intermediary factors in the relationship between occupational injuries and mental health issues (Chin et al., 2017; Chung & Cheng, 2017; McCaughey et al., 2013).

Regarding the nature of work, firefighters attending emergency calls must abide by the strict standard operating procedure (SOP) and work shift. The participants highlighted that the SOP might be challenging but understood it was designed to prioritize the firefighter's safety. This finding is explained through research conducted by Smith (2018) and Smith (2020), whereby burnout has a negative influence on safety compliance behaviour, adherence to safe work practices, and safety reporting and communication, meaning that by putting safety at its highest priority, an individual may reduce the probability of experiencing burnout.

A notable finding in this study is over workload especially on the administrative and clerical works, echoed with the finding from Samsudin et al. (2021), which identified that Malaysian firefighters obtained the average mid-to-high range of workload score and deemed



performance and effort demand a significant workload demand comparing to others. A plausible explanation for this is that the over workload is contributed by the lack of human resources and staffing of firefighters (Samsudin et al., 2021) and the failure of the work shift system and decreased staffing (Egdell et al., 2021). This is also highlighted by Ricciardelli et al. (2020), where Canadian firefighters reported substantial difficulties with organisational (interpersonal work relationship dynamics; workload distribution, resources, and administrative obligations) and operational (vigilance, work location, interacting with the public) as part of the stressors.

As the occupation of firefighters is unique as it requires them to work in shifts, most participants in the current study continue to highlight how unusual pattern of sleep affect their health in the long term. Previous studies have also mainly explored how the lack of sleep may affect the physical and mental health of firefighters. This finding aligns with the study conducted by Angehrn (2020), where the positive screening of mental disorders among firefighters was identified for those having positively screened for insomnia. In contrast with the finding by Choi (2020), low sleep health and sleep behaviour is the outcome of mental health disorder such as post-traumatic stress disorder and burnout. On the other hand, Carleton et al. (2020) found that sleep is one of the modifiable variables that appear significantly related to mental health. Similarly, despite the work shift, Wolkow et al. (2019) suggested that sleep during overnight work mediated the impact of experiencing sleep disorders and mental health conditions for those having high burnout. Regardless, these two findings differ in how the variables were measured to associate with one another, especially to link the relationship between sleep and mental health.

The participants highlighted the challenges of the working environment and mainly mentioned the conflict in the relationship involving the line of communication, method of communication, and unclear instruction. More significant relationship conflict has strongly predicted work-related anxiety and depression in United Kingdom firefighters (Payne & Kinman, 2019). Numerous past studies have been conducted in viewing the association between social support and the relationship between the supervisor and supervisee (Loy et al., 2023) where Pasca & Wagner (2022) highlighted the positive working environment has a significant impact on firefighter life and contributing to the overall firefighters' well-being. However, the challenges due to working environment were only minimally addressed by the participants, indicated that they received favourable support from their supervisors, management and colleagues.

The personal challenges were connected to two themes: (1) personal and family challenges and (2) professionalism challenges. Personal challenges revolved around themselves, families, economy, and finances, while professional challenges revolved around social characteristics and values or work ethics (Hosshan, 2022). Having experience with fatal incidents involving co-workers, the finding found that the firefighters were increasingly concerned about their safety and their colleagues. Smith et al. (2020) support personal safety, where safety compliance behaviour, personal protective equipment behaviour, safe work practice, and safety citizenship behaviour predict less burnout among the firefighter's population. In terms of family, the challenges revolved the on the inability to fulfil family needs, misunderstanding of the work scope, and unsettled family issues that contribute to work-life imbalance and, if not managed properly, will affect the job performance or vice versa. The findings were consistent with Smith et al. (2016), which identified that higher partner stress was associated with loneliness and decreased positive emotion. Similar to Smith et al. (2018), work-family conflict predicts burnout among firefighters in addition to work stress. The study also highlighted that misunderstanding might occur, especially at the beginning of the marriage or work scope changes due to promotion or transition of task.

In this current study, the only behaviour addressed is quarrels with each other, which is similar to the finding from Pasca & Wagner (2021) that firefighters expressed their dissatisfaction through a physical or indirect expression of aggression. Regardless, no other behaviour towards the spouses has been mentioned in the current study by the firefighters. Concerning family or spouse conflict, Nilamsari et al. (2019) argued that there is no correlation between marital status and age with workers' stress. On the other hand, Majani et al. (2022) identified PTSD and depressive symptoms among Malaysian firefighters are predicted by problem-solving communication and distress that occurred in marital conflicts. A plausible concern in family conflicts is the lack of complete openness, reduced financial stability, risk of divorce, and interpersonal conflicts (Macdermid et al., 2021).

From the findings, the professional challenges are highlighted either through social characteristics and values or work ethics. Previous study broadly investigated mental strength through the concept of resilience. In line with the current finding, mental strength is challenging for firefighters. Schäfer et al. (2020) agreed that having trait resilience lower the risk of having psychopathological symptoms, post-traumatic stress, and burnout symptoms, supported by Miller et al. (2018), which highlighted that psychological resilience is positively related to higher levels of compassion satisfaction and lower burnout. The plausible explanation of resiliency among firefighters is associated with stress coping and subjective health status (Lee et al., 2019), which is also supported by Solehah Mardhiyah Misnan and Abd Rahim Mohd Shariff (2022) where resilience and coping strategies yielded high mean value especially when encountering new norms which is essential in the process of adjustment and adaptation.

***Research Question 2: How do the Challenges Impact the Malaysian Firefighters?***

This research question has been broadly researched from previous studies. Most of the studies are interested in finding out the challenges and the factors associated with the firefighters' physical or mental health. This current study is seeking exploration of how the challenges impact firefighters. In this current study, the research question emerged with one superordinate theme, which is a psychological impact, where it is further expanded to three themes which are (1) mental and physiological impact, (2) emotional impact, and (3) behavioral and psychosocial impact.

The physiological impacts are described as headache and nausea, heart palpitation due to phobia, sleep deprivation, and lethargy which is in line with Smith et al. (2019), identified that PTSD is among the most frequent mental health problem occurred among firefighters. Findings by another researcher highlight that the outcome of psychosocial factors among firefighters is non-depressive mental health (Igboanugo et al., 2021) and other mental health problems such as PTSD, major depression (MD) and generalised anxiety disorder (Kshtriya et al., 2020).

Current findings did not highlight much of the apparent health outcome of a firefighter career, compared to previous findings, which found that respiratory issues are among the most frequently reported physical health issues among firefighters (Smith et al., 2019). The direct impacts of the challenges are reported in the current study regarding the lack of sleep and feeling of lethargy. This is supported by Igboanugo et al. (2021), which stated that sleep quality is the health-related outcome of psychosocial stressors, while argued the other way round by Choi (2021), where the mental health outcome and burnout are the predictors of sleep quality and behaviour. The argument of the findings describes the extent to which mental health outcomes are regarded as the predictor or outcomes depending on the direction of the research. The lack of sleep and feeling of lethargy may further affect cognitive functioning and increase the likelihood of poor work performance or injuries (Stout et al., 2020 & Yung et al., 2021).

Vincent et al. (2018) also agreed that sleep disruption impairs cognitive ability but argued that there is no impairment of physical performance.

The current finding reported that although participants mentioned that they have a phobia of blood and snake, they were still able to manage the situation during the operational duties yet showed some physiological reactions such as sweating and palpitation. Although previous studies highlighted the association between potentially traumatic events and mental health disorders (Carleton et al., 2020) and the prevalence of firefighters remembering traumatic events is 70% towards fatalities and injuries (Kim et al., 2019), the participant addressed that they did not develop any phobia or traumatic experience despite experiencing the traumatic experience during operational duties. A plausible explanation for this situation is explained by Jahnke et al. (2016), where repeated exposure psychological tolls include desensitisation which may be experienced by the participant showing non-disturbance of the traumatic event, flashbacks and irritability. Mental health problems are not reported mainly among the participants in the current study. However, Samsudin et al. (2021) have reported that Malaysian firefighters have higher anxiety issues than depression and stress.

Participants highlighted the emotional impact in terms of the feeling of unease when the tasks that were supposed to be completed at the office were brought home. This is supported by the research conducted by Abellson (2019), where the feeling of sadness lingers for the people who cannot be saved, either the ones that have been dead upon arrival or the ones forgotten. The feeling of burnout and thinking of resignation due to work stress is also one of the significant findings in this study. These results are similar to those reported by Smith (2018) and Igboanugo et al. (2021), whereby both work stress and work-family conflict predicted burnout, while Yung (2021) further reported burnout was associated with adverse health and performance outcomes. Similar to Sun (2016) and Macdermid et al. (2021), job burnout was further associated with the compassion fatigue of firefighters, and severe traumatic experiences led to more significant work-related stress (Kim et al., 2019) and mental and physical health injuries.

Public pressure and interferences also become the source of stress that might interfere the emotion during operational work. Despite this, the supervisor played an essential role in recognising the changes in their subordinates' emotions and resolved them immediately. This is supported by Milligan-Saville et al. (2018), where being insulted by other people contributes to mental disorders. The finding also highlighted that fatalities among co-workers impacted them emotionally and required some time to accept the situation. Being hyper-focused on what they should do would lead to mental and physical health problems (Tanaka et al., 2019). Sleep deprivation, especially insomnia, is further promoted to the increased risk of emotional exhaustion (Wolkow et al., 2019). Participants addressed behavioural and psychosocial symptoms as coming late to work, self-isolation, and uninvolved. Despite the impacts of challenges explored in this current study, Igboanugo et al. (2021), however, highlight the psychosocial stressors, including interpersonal conflict and concern over organisational fairness, associated with several health outcomes.

To conclude, following qualitative analysis of the interviews conducted in this study on firefighters located in the urban and central regions of Malaysia, several themes emerged within this population concerning the challenges and the impact of those challenges on firefighters. When determining the construction of an excellent firefighter workplace health and wellness program, it is essential for professionals working with this population to consider the challenges and how those challenges affect the firefighters. The findings also demonstrate the continued need to expand research within the firefighters' population, both qualitative and quantitative, especially in Malaysia, to fully understand the psychological well-being of firefighters and adequately develop inclusive tools, treatments, and training to support their well-being. The results of this study and its implication for future research serve as a platform

for the following stages of scholarship toward adequate and quality responses of firefighters towards mental health issues.

## 5. PRACTICAL APPLICATION

The research finding is beneficial for Malaysian firefighters to understand the common challenges firefighters face. Some of the themes and sub-themes identified in the current study are unique and specifically reflect the challenges of firefighters in the local context. The common identifying challenges in the current study included inefficient management and operational system, issues with staff welfare, and clerical tasks. By identifying the challenges, the management may find solutions to provide a better working environment to the firefighters, such as providing clearer work processes and procedures, especially administrative matters. Furthermore, as the firefighters highlighted the issues on staff welfare, the management may consider scrutinising any complaints raised by the firefighters and resolve them effectively to provide a convenient working environment and eventually enhance their work performance.

One interesting finding of the challenges is over workload, especially administrative and clerical work. It is undeniable that being knowledgeable in multiple skills gives added value to individuals, in addition to supporting their career development. However, the continuous workload may divert their focus from the core responsibilities and the operational tasks, eventually affecting their performance. Therefore, the management may consider hiring dedicated staff for clerical and administrative tasks or minimising such tasks. Decreasing the workload related to the administrative task will also indirectly improve the sleep quality of the firefighters as they will focus mainly on the operational duties and have enough rest during the rest time. Training for administrative work may also be considered. However, looking at the nature of the works of firefighters which the training is highly focused on the operational duties, the administrative works may look supplementary or be attended by the higher management and be cascaded down to the subordinates. In terms of work-life balance, organising events or programs with the involvement of the family members provides more understanding of the nature of the work of the firefighters, giving a sense of appreciation and inculcating a support system within the family of the firefighters.

In addressing the psychological impacts, professional help should be easily available to firefighters, especially after experiencing traumatic events. It has been aware that the fire departments have their counselling unit. However, the allocation of the counsellors or psychologists could be much better. Not all fire stations have dedicated counsellors or psychologists to provide firefighters with mental health support or intervention. Therefore, awareness programs shall be organized to advocate for the well-being and mental health issues, and firefighters are to be provided with easy access to professional help. The programs can jointly collaborate with the higher institution or the medical centre. More counsellors or psychologists can be hired in-house to address firefighters' well-being. However, if such hiring is not possible, the management may opt for outsourcing the services when needed to prevent prolonged cases which could harm the well-being in the long term.

In addition, the knowledge is still general, and only those who have experienced or encountered such situations are fully aware. Therefore, firefighters need to equip themselves with mental health knowledge and skills in responding to mental health situations, whether for themselves or the people around them. The work of the firefighters in rescuing people also requires them to deal with difficult situations, such as a suicidal attempt, which is usually related to mental health. Thus, such training will equip them to gain more knowledge and skills in providing mental health first aid to the victim and saving the victim's life. Apart from that, the current finding managed to identify new challenges relevant to the current era: how public

opinion and social media pressure impacted the firefighters. Therefore, this input shall be considered to design such training to manage expectations and deal with the matters professionally.

In addition, identifying the impact of the challenges on the firefighters enables the decision maker to design a mental health policy specifically for firefighters to incorporate both mental and physical health for better performance. The subordinates and supervisor shall be aware and familiar with the procedures to provide mental health support to the firefighters. The Malaysia government has established a support system for its staff, namely Rakan Pembimbing Perkhidmatan Awam (AKRAB), and the JBPM AKRAB was established in November 2009 (Buletin AKRAB Edisi 1, 2013). The establishment of AKRAB embraced the concept of social support within the co-workers to empower each other's potential and simultaneously strengthen teamwork and interrelation. The main objective of AKRAB is to organise the guidance service among co-workers that encounter work or personal problems.

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