

EXPLORING CHALLENGES AND COPING MECHANISMS OF MENTAL HEALTH AMONG FIREFIGHTERS

NURAMALINA BINTI SAMAR

UNIVERSITI PENDIDIKAN SULTAN IDRIS

2023

EXPLORING CHALLENGES AND COPING MECHANISMS OF
MENTAL HEALTH AMONG FIREFIGHTERS

NURAMALINA BINTI SAMAR

DISSERTATION PRESENTED TO QUALIFY A MASTERS IN SCIENCE
(RESEARCH MODE)

FACULTY OF HUMAN DEVELOPMENT
UNIVERSITI PENDIDIKAN SULTAN IDRIS

2023



Please tick (✓)
Project Paper
Master by Research
Master by Mixed Mode
PhD

<input type="checkbox"/>
<input type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>

INSTITUTE OF GRADUATE STUDIES

DECLARATION OF ORIGINAL WORK

This declaration is made on the¹² day of⁹ 20.....²³

i. Student’s Declaration:

I, NURAMALINA BINTI SAMAR (M20201000824 / FACULTY OF HUMAN DEVELOPMENT, UPSI hereby declare that the work entitled EXPLORING CHALLENGES AND COPING MECHANISMS OF MENTAL HEALTH AMONG FIREFIGHTERS is my original work. I have not copied from any other students’ work or from any other sources except where due reference or acknowledgment is made explicitly in the text, nor has any part been written for me by another person.

Signature of the student

ii. Supervisor’s Declaration:

I, ASSOC. PROF. DR NURUL ‘AIN HIDAYAH BINTI ABAS hereby certifies that the work entitled EXPLORING CHALLENGES AND COPING MECHANISMS OF MENTAL HEALTH AMONG FIREFIGHTERS was prepared by the above named student, and was submitted to the Institute of Graduate Studies as a full fulfilment for the conferment of MASTER OF SCIENCE (PSYCHOLOGY), and the aforementioned work, to the best of my knowledge, is the said student’s work.

12/9/2023

Date

Signature of Supervisor



**INSTITUT PENGAJIAN SISWAZAH /
INSTITUTE OF GRADUATE STUDIES**

**BORANG PENGESAHAN PENYERAHAN TESIS/DISERTASI/LAPORAN KERTAS PROJEK
DECLARATION OF THESIS/DISSERTATION/PROJECT PAPER FORM**

Tajuk / Title: EXPLORING CHALLENGES AND COPING MECHANISMS OF
MENTAL HEALTH AMONG FIREFIGHTERS

No. Matrik / Matric's No.: M20201000824

Saya / I : NURAMALINA BINTI SAMAR

(Nama pelajar / Student's Name)

mengaku membenarkan Tesis/Disertasi/Laporan Kertas Projek (Kedoktoran/Sarjana)* ini disimpan di Universiti Pendidikan Sultan Idris (Perpustakaan Tuanku Bainun) dengan syarat-syarat kegunaan seperti berikut:-

acknowledged that Universiti Pendidikan Sultan Idris (Tuanku Bainun Library) reserves the right as follows:-

1. Tesis/Disertasi/Laporan Kertas Projek ini adalah hak milik UPSI.
The thesis is the property of Universiti Pendidikan Sultan Idris
2. Perpustakaan Tuanku Bainun dibenarkan membuat salinan untuk tujuan rujukan dan penyelidikan.
Tuanku Bainun Library has the right to make copies for the purpose of reference and research.
3. Perpustakaan dibenarkan membuat salinan Tesis/Disertasi ini sebagai bahan pertukaran antara Institusi Pengajian Tinggi.
The Library has the right to make copies of the thesis for academic exchange.
4. Sila tandakan (✓) bagi pilihan kategori di bawah / *Please tick (✓) for category below:-*

SULIT/CONFIDENTIAL

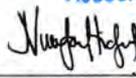
Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub dalam Akta Rahsia Rasmi 1972. / *Contains confidential information under the Official Secret Act 1972*

TERHAD/RESTRICTED

Mengandungi maklumat terhad yang telah ditentukan oleh organisasi/badan di mana penyelidikan ini dijalankan. / *Contains restricted information as specified by the organization where research was done.*

TIDAK TERHAD / OPEN ACCESS


(Tandatangan Pelajar/ Signature)


Assoc. Prof. Dr. Nurul Ain Hidayah binti Abas
Department of Psychology
Faculty of Human Development
Sultan Idris Education University
(Tandatangan Penyelia / Signature of Supervisor)
& (Nama & Cop Rasmi / Name & Official Stamp)

Tarikh: 12/9/2023

Catatan: Jika Tesis/Disertasi ini **SULIT @ TERHAD**, sila lampirkan surat daripada pihak berkuasa/organisasi berkenaan dengan menyatakan sekali sebab dan tempoh laporan ini perlu dikelaskan sebagai **SULIT** dan **TERHAD**.

Notes: If the thesis is CONFIDENTIAL or RESTRICTED, please attach with the letter from the organization with period and reasons for confidentiality or restriction.

TERMA RUJUKAN KOLABORASI PENYELIDIKAN BAHAGIAN PERANCANGAN DAN PENYELIDIKAN, JABATAN BOMBA DAN PENYELAMAT MALAYSIA

1. Tanggungjawab Penyelidik

Penyelidik hendaklah mematuhi terma dan syarat yang di tetapkan dibawah iaitu:-

- i. Surat menyurat hendaklah perlu melalui universiti atau di tandatangani bersama oleh Penyelia.
- ii. Mengemukakan dan membuat pembentangan kertas cadangan kajian kepada Bahagian Perancangan dan Penyelidikan, Jabatan Bomba dan penyelamat Malaysia (JBPM);
- iii. Mendaftarkan segala maklumat penyelidikan ke dalam sistem pangkalan data <https://researchpuspek.com>;
- iv. Mengemukakan hasil kajian rintis (pilot study) kepada Bahagian Perancangan dan Penyelidikan JBPM;
- v. Mengemukakan deraf borang soalselidik kepada Bahagian Perancangan dan Penyelidikan JBPM untuk semakan;
- vi. Mengemukakan borang soalselidik kepada Bahagian Perancangan dan Penyelidikan JBPM;
- vii. Mengemukakan pungutan data soalselidik kepada Bahagian Perancangan dan Penyelidikan JBPM (sekiranya mendapat kebenaran membuat *data collection* secara sendiri);
- viii. Mengemukakan analisa soalselidik kepada Bahagian Perancangan dan Penyelidikan JBPM;
- ix. Mengemukakan deraf artikel kepada Bahagian Perancangan dan Penyelidikan JBPM untuk semakan;
- x. Semua artikel tidak boleh mengandungi maklumat sulit JBPM kecuali mendapat kebenaran bertulis dari Bahagian Perancangan dan Penyelidikan JBPM;
- xi. Menerbitkan sekurang-kurangnya SATU (1) artikel jurnal berindeks dalam SCOPUS/WOS/ERA;

- xii. Menyenaraikan Pusat Penyelidikan Kebomgaan / Fire Research Centre berserta nama pegawai yang terlibat dalam kajian ini ke dalam gabungan (affiliation) artikel;
- xiii. Mengemukakan salinan artikel yang telah berjaya diterbitkan kepada Bahagian Perancangan dan Penyelidikan JBPM;
- xiv. Mengemukakan status kemajuan penyelidikan pada setiap enam bulan atau bila-bila diarahkan berbuat demikian;
- xv. Menyampaikan kuliah kepada pegawai JBPM berkenaan project activities, *methodology* atau dan *tools* yang digunakan dalam kajian;
- xvi. Segala kos dan perbelanjaan berkaitan penyelidikan disepanjang tempoh kajian ditanggung oleh penyelidik;
- xvii. Membuat membentangkan akhir kajian kepada Pengurusan Tertinggi Jabatan di akhir pengajian /penyelidikan;
- xviii. Menyimpan dan memelihara maklumat dan data yang dikumpulkan dengan cara yang bertanggungjawab;
- xix. Mengemukakan perincian aktiviti penyelidikan kepada Bahagian Perancangan dan Penyelidikan JBPM;
- xx. Tidak memberikan data atau hasil kajian kepada pihak ketiga tanpa pemberitahuan dan kebenaran bertulis dari Bahagian Perancangan dan Penyelidikan JBPM dan;
- xxi. Mematuhi syarat-syarat semasa yang ditetapkan oleh Pihak Pengurusan Tertinggi JBPM.

2. Tanggungjawab Bahagian Perancangan & Penyelidikan JBPM-

Bahagian Perancangan dan Penyelidikan, Jabatan Bomba dan penyelamat Malaysia (JBPM) hendaklah membantu penyelidik seperti perkara dibawah:-

- i. Membantu penyelidik menyesuaikan objektif kajian selari dengan keperluan semasa Jabatan;
- ii. Membantu penyelidik dalam pemilihan populasi dan responden kajian;

- iii. Membuat semakan deraf borang kajian rintis (pilot study) dan deraf borang soalselidik sebenar;
- iv. Membantu penyelidik mengkordinasi sesi temu bual di lokasi dan responden yang terpilih atau;
- v. Mengedarkan dan memantau edaran borang soalselidik kepada responden JBPM yang terlibat melalui pautan yang dibangunkan oleh JBPM;
- vi. Mengembalikan borang soalselidik yang telah dijawab oleh responden JBPM kepada Penyelidik;
- vii. Membuat semakan dan menambahbaik ke atas deraf artikel yang ingin diterbitkan;
- viii. Menyemak deraf artikel untuk mengelakkan maklumat sulit atau kerahsiaan JBPM didedahkan;

ACKNOWLEDGEMENT

I want to extend my gratitude to those directly and indirectly involved in the thesis's development. It was a long journey for my career development and knowledge enhancement. First and foremost, thank you for the continuous support and guidance from my supervisor, Assoc. Prof. Dr. Nurul 'Ain Hidayah binti Abas and my co-supervisor, Assoc. Prof. Dr. Nurul Ain binti Mohd Daud has patiently guided me through the postgraduate journey. As this research has been carried out under Fundamental Research Grants Scheme FRGS-RACER (2019-0175-106-62) provided by the Ministry of Education of Malaysia, I would like to extend their gratitude to Universiti Pendidikan Sultan Idris (UPSI) that helped manage the grants. Besides that, the research team and lecturers gave me valuable experience and knowledge during my postgraduate journey. I would also like to extend my appreciation to the Jabatan Bomba dan Penyelamat Malaysia (JBPM), especially the Pusat Penyelidikan Kebombaan (PUSPEK), for their continuous support in ensuring the research is conducted smoothly. This appreciation is also specially made to the Malaysian firefighters who had contributed throughout the data collection process and who have always been Malaysians' heroes as the first responders during emergency cases. Last but not least, the gratitude is also dedicated to my parents, Samar bin Kijo and Jasmi binti Poniran, who has been very patient with me in my journey to achieving my dreams. This is just the continuation of the journey toward bigger steps in my career development. I hope that the knowledge is not only for me but also to be contributed to and benefit the communities.

ABSTRACT

This study aimed to explore the challenges of Malaysian firefighters, the impact of the challenges, and to understand the coping strategies. The study adopted a qualitative research method through semi-structured interviews with 23 firefighters in the central region of Malaysia, consisting of 8 supervisors and 15 subordinates. Findings suggest that two superordinate themes emerged relating to challenges, workplace challenges and personal challenges, which are aligned with the affective experience as explained through AET. The challenges impact the firefighters psychologically, which is aligned with the affective reaction as explained by the AET but further divided into mental and physiological, emotional as well as behavioural and psychosocial impacts. The findings also suggest the coping strategies were derived based on emotion-focused coping, problem-focused coping, and serving both emotion-focused and problem-focused, reflected through social support. By uncovering the theoretical implication, this research contributes to a deeper understanding of the AET, especially in the firefighting context and the category of the psychological impacts compared with the mental health continuum model and further relation to the category of coping mechanisms. The study also provides practical implications to the management in enhancing the administrative work procedure and staff welfare, scrutinising complaints and supporting the administrative workload. Identifying the impacts of challenges and coping mechanism enable practical implication for the management to provide better working environment to the firefighters and guidance to support their mental health upon experiencing challenging situations, especially during the firefighting career.

MENEROKA CABARAN DAN MEKANISME DAYA TINDAK TERHADAP KESIHATAN MENTAL DALAM KALANGAN ANGGOTA BOMBA

ABSTRAK

Kajian ini bertujuan untuk meneroka cabaran anggota bomba Malaysia, kesan cabaran, dan memahami strategi daya tindak. Kajian ini menggunakan kaedah kajian kualitatif melalui temu bual separa berstruktur dengan 23 anggota bomba di wilayah tengah Malaysia yang terdiri daripada 8 penyelia dan 15 kakitangan bawahan. Protokol temu bual dibangunkan berdasarkan teori Teori Peristiwa Afektif (AET), Model Dual Continuum Kesihatan Mental, dan Model Transaksional Stres dan Daya Tindak. Dapatan menunjukkan bahawa dua tema superordinat muncul berkaitan dengan cabaran, cabaran tempat kerja dan cabaran peribadi, yang sejajar dengan pengalaman afektif seperti yang dijelaskan melalui AET. Cabaran itu memberi kesan kepada anggota bomba secara psikologi, sejajar dengan reaksi afektif seperti yang dijelaskan oleh AET tetapi dibahagikan kepada kesan mental dan fisiologi, emosi, serta tingkah laku dan psikososial. Penemuan juga mencadangkan strategi daya tindak diperolehi berdasarkan daya tindak berfokus emosi, daya tindak berfokus masalah, dan kedua-dua fokus emosi dan fokus masalah, yang diterjemahkan melalui sokongan sosial sekali gus menyumbang kepada implikasi teori daya tindak. Dengan mendedahkan implikasi teori, penyelidikan ini menyumbang kepada pemahaman yang lebih mendalam tentang AET, terutamanya dalam konteks kebombaan dan kategori kesan psikologi berbanding dengan model kontinum kesihatan mental dan seterusnya perkaitan dengan kategori mekanisme daya tindak. Kajian ini juga memberi implikasi praktikal kepada pihak pengurusan dalam mempertingkatkan prosedur kerja pentadbiran dan kebajikan kakitangan, meneliti aduan dan menyokong beban kerja pentadbiran. Mengenalpasti kesan cabaran dan mekanisme daya tindak menyumbang kepada implikasi praktikal kepada pihak pengurusan untuk menyediakan persekitaran kerja yang lebih baik kepada anggota bomba dan bimbingan untuk menyokong kesihatan mental mereka apabila mengalami situasi yang mencabar, terutamanya semasa dalam perkhidmatan bomba.

TABLE OF CONTENTS

	Page
DECLARATION OF ORIGINAL WORK	ii
DECLARATION OF DISSERTATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
ABSTRAK	vi
TABLE OF CONTENT	vii
LIST OF TABLES	xiii
LIST OF FIGURES	xiv
LIST OF ABBREVIATIONS	xv
LIST OF SYMBOLS	xvii
CHAPTER 1 INTRODUCTION	
1.1 Introduction	1
1.2 Background of Study	2
1.2.1 Malaysia Firefighters and the Job Description	2
1.2.2 Malaysian Firefighters' Special Force and Emergency Cases	3
1.2.3 Firefighters and Mental Health Concern	6
1.3 Problem Statements	8
1.4 Research Objectives	11
1.5 Research Questions	11

1.6	Definition of Key Terms	12
1.6.1	Conceptual Definition of Challenges	12
1.6.2	Operational Definition of Challenges	13
1.6.3	Conceptual Definition of Mental Health	14
1.6.4	Operational Definition of Mental Health	15
1.6.5	Conceptual Definition of Coping Mechanisms	17
1.6.6	Operational Definition of Coping Mechanism	18
1.7	Conceptual Framework of Study	19
1.8	Limitation of Study	20
1.9	Significance of Study	21
1.9.1	Firefighters	21
1.9.2	Department of Malaysian Firefighters and Rescue Forces (Jabatan Bomba dan Penyelamat Malaysia)	22
1.9.3	Ministry of Housing and Local Government	22
1.9.4	Theoretical Significance	23
1.10	Conclusion	23

CHAPTER 2 LITERATURE REVIEW

2.1	Introduction	25
2.2	Theories Related to Challenges, Mental Health and Coping Mechanisms	26

2.2.1	Affective Event Theory (1996)	26
2.2.2	Mental Health Dual Continuum Model (2002)	28
2.2.3	Transactional Model of Stress and Coping (1984)	30
2.3	Prevalence of Mental Health among Firefighters	32
2.4	General Mental Health of Firefighters	36
2.5	Challenges and Issues among Firefighters	41
2.6	Impact of Challenges on Mental Health	43
2.7	Coping Mechanism among Firefighters	47
2.8	Conclusion	50

CHAPTER 3 METHODOLOGY

3.1	Introduction	52
3.2	Philosophical Paradigm of the Study	53
3.2.1	Social Constructivism	53
3.3	Methodology	54
3.3.1	Qualitative Approach	54
3.4	Research Design	57
3.4.1	Case Study	57
3.5	Population and Sample	58

3.6	Instruments	62
3.6.1	Researcher	62
3.6.2	Interview Protocol	63
3.7	Trustworthiness and Strategies for Trustworthiness	65
3.7.1	Credibility and Strategies of Credibility	65
3.7.2	Confirmability and Strategies for Confirmability	66
3.7.3	Transferability and Strategies for Transferability	68
3.8	Data Analysis	68
3.9	Document Analysis	72
3.10	Triangulation Process	73
3.11	Ethical Consideration	73
3.12	Conclusion	74
CHAPTER 4 FINDINGS		
4.1	Introduction	75
4.2	Demographic Information	76
4.3	Data Finding	78
4.4	Research Question 1: What are the Challenges Faced by Malaysian Firefighters?	83
4.4.1.	Superordinate Theme 1: Workplace Challenges	83

4.4.2. Superordinate Theme 2: Personal Challenges	116
4.5 Research Question 2: How do the Challenges Impact the Malaysian Firefighters?	125
4.5.1. Superordinate Theme 3: Psychological Impacts	125
4.6 Research Question 3: How Malaysian Firefighters Cope with Challenges that Impact their Health?	135
4.6.1. Superordinate Theme 4: Emotion-focused Coping	135
4.6.2. Superordinate Theme 5: Problem-focused Coping	145
4.6.3. Superordinate Theme 6: Emotion-focused and Problem-focused Coping	150
4.7 Conclusion	160

CHAPTER 5 DISCUSSION

5.1 Introduction	161
5.2 Overview of the Finding	162
5.3 Research Question 1: What are the Challenges Faced by Malaysian Firefighters?	165
5.4 Research Question 2: How do the Challenges Impact the Malaysian Firefighters?	181
5.5 Research Question 3: How Malaysian Firefighters Cope with Challenges that Impact their Health?	186
5.6 Implications	197
5.6.1 Practical Implications	197

5.6.2	Theoretical Implications	201
5.6.3	Methodological Implications	204
5.7	Limitation	206
5.8	Suggestion for Future Research and Recommendation	207
5.9	Conclusion	209
	REFERENCES	213
	APPENDIX A	Informed Consent Form
	APPENDIX B	Interview Protocol

LIST OF TABLES

Table No		Page
1.1	Interview Questions for First Research Question	14
1.2	Interview Questions for Second Research Question	16
1.3	Interview Questions for Third Research Question	18
4.1	Superordinate Themes, Themes and Subthemes by Research Questions	80

LIST OF FIGURES

No. Figure		Page
1.1	Comparison of the total emergency calls in Malaysia from 2014 to 2018	5
1.2	Mental health dual continua model. Adapted from Keyes (2002)	15
1.3	Conceptual framework of study	19
2.1	Affective Events Theory (AET). Adapted from Weiss and Cropanzano (1996)	27
2.2	Coping process. Adapted from Cohen and Lazarus (1979), Hamburg and Adams (1967) and Lazarus and Folkman (1983)	31
3.1	Flow chart on process of participant recruitment	60
3.2	Lichtman's model of The Three Cs of Data Analysis: Codes, Categories, Concept	69
5.1	Overview of the finding	162

LIST OF ABBREVIATIONS

ABMS	Anti Bribery Management System
AET	Affective Event Theory
AKRAB	Rakan Pembimbing Perkhidmatan Awam
COPE	Problem Oriented Coping Experienced
CRRWI	Coping Response of Rescue Workers Inventory
DASS	Depression, Anxiety and Stress Scale
DSM 5	Diagnostic and Statistical Manual of Mental Disorder, 5 th Edition
EMRS	Emergency Medical And Rescue Services
FGD	Focus group discussion
GHQ	General Health Questionnaires
HAZMAT	Hazardous Material
JBPM	Jabatan Bomba dan Penyelamat Malaysia
MD	Major depression
MDD	Major Depressive Disorder
MS ISO	Management System International Organisation Standardisation
MUST	Multi-Skill Team
OC	Operation Chief
PASKUB	Firefighter Air Special Forces
PERMA	Positive emotion, engagement, relationship, meaning, and achievement
PPDA	Water Rescue Forces



PTSD	Post-traumatic Stress Disorder
PTSS	Post-traumatic stress syndrome
PUSPEK	Department of Planning and Research, Malaysia Fire and Rescue Forces
RIM	Rapid Intervention Motorcycle
SOP	Standard Operating Procedure
SPSS	Statistical Pack for Social Science
STORM	Special Technical Operation and Rescue Team of Malaysia
UPSI	Universiti Pendidikan Sultan Idris
WHO	World Health Organization
WHOQOL	World Health Organisation Quality of Life scale



LIST OF SYMBOLS

$\%$	Percentage
n	Number of samples
N	Total number of samples
M	Mean
SD	Standard deviation



CHAPTER 1

INTRODUCTION



1.1 Introduction

The purpose of this chapter is to provide an overview of the background of the study related to the challenges experienced by firefighters and the impact on their mental health. This chapter also includes the problem statements to address the need to conduct the study, followed by research questions and objectives of the study. The following part of the subchapter will include the theory that will be used in this study, followed by definitions, which are defined operationally and conceptually. The limitations and significance of the study will also be discussed in this chapter.



1.2 Background of Study

The background considers the description of the Malaysia firefighters and the job description, Malaysia Firefighters Special Force and emergency cases, as well as the mental health concern, which provide the study's contextual rationale.

1.2.1 Malaysia Firefighters and the Job Description

Firefighter in Malaysia was established in 1883 and is locally known as Bomba (Badan Organisasi Mencegah Bencana Alam) dan Penyelamat. The organisation is placed under the Ministry of Housing and Local Government (Kementerian Perumahan dan Kerajaan Tempatan). To date, there are 281 fire stations throughout Malaysia and the location of the fire varies either in rural areas, semi-urban or metropolitan cities. The function of Malaysian firefighters is in accordance with the Firefighter Service Act 1988 (Act 341), which states the function as (1) to put off, oppose, prevent and control fire, (2) to protect lives and properties in the case of fire, (3) to determine the availability of fire exits, proper maintenance and regulation, (4) to conduct an investigation into the cause, the sources and circumstances of the fire incident and (5) to perform humanitarian services including protection of life and property in the event of any disaster. The job description of firefighters is further classified into four categories which are (1) operational aspect, (2) enforcement aspect, (3) fire prevention and safety aspect and (4) training aspect.

Regarding operational duties, the firefighters are responsible for performing fire extinguishing and rescue operations, daily maintenance and driving of fire truck machinery, and performing the surveillance and inspection of premises. Apart from that, the firefighters oversee the affairs of special duties services according to the Firefighter Service Act 1988. For the enforcement aspect, the firefighters are responsible for regulating and making inspections to eliminate fire hazards on the premises. For fire prevention and safety, the job description of firefighters is to process new building documents submitted to the department based on the Uniform Building By-Laws 1984 (Undang-undang Kecil Bangunan Seragam 1984). The last job description in terms of training is that the firefighters are responsible for attending training and services programmes organized by the Jabatan Bomba dan Penyelamat Malaysia (JBPM) Training Department.

1.2.2 Malaysian Firefighters' Special Force and Emergency Cases

The emergency cases vary from one another and therefore, there is a need to establish different units designed specially to attend specific cases. Therefore, Malaysia firefighter has developed special force team for a specific task related to the operation work which are (1) Multi-Skill Team (MUST) – team or crew that provide direct rescue and emergency management to the victims regardless in any situation in air, land and water, (2) Water Rescue Forces (PPDA) – provide rescue services especially related to water, (3) Emergency Medical And Rescue Services (EMRS) - responsible for the emergency treatment of the injured team members and victims during the operation who require immediate treatment., (4) Special Technical Operation and Rescue Team

of Malaysia (STORM) - to conduct operational rescue in cities, landslide, high building, save and rescue in large area, forest fires, flood and overcome huge casualties., (5) K9 Unit - to carry out the search and rescuing survivors in structure collapse or landslide, finding dead victims in the water or the land, rescuing lost people in the jungle, cave or highland and assist the investigation team to investigate the causes of fire due to treason or hardly identified., (6) Hazardous Material (HAZMAT) - responsibility to handle the accident and cases related to hazardous chemical substances and the accident control rules, (7) Rapid Intervention Motorcycle (RIM) - This unit is operated in a team of motorcycles with complete equipment for put off the fire and rescuing to overcome the emergency incidents in the location with heavy traffic and narrow pathway especially in cities and (8) Firefighter Air Special Forces (PASKUB) - main responsibility of this team is for the purpose of emergency surveillance, rescue and treatment which involve the disaster that require immediate action of rescue personnel and paramedics through the air. Each special force has its own functional and job description with designed training specific to the nature of the rescue operation.

Based on the statistics from Malaysia Fire Department, as shown in Figure 1.1 (Bomba Report, 2018), the overall number of emergency calls in 2014 (198,656 emergencies) showed a decline to 110,150 emergency calls in 2018 (a decrease of 44.55%). The emergency calls are classified as either (1) fire cases, (2) rescue operations, (3) special tasks or (4) fake calls. Fire cases declined from 2014 to 2017, from 99,830 cases to 29,356 (a decrease of 70.59%). However, there was an increase of 25.21% from 2017 (29,396 cases) to 2018 (36,758). For rescue operations, there was a low decrease in 2014 (54,540 cases) to 40,402 cases in 2016 (decrease of 25.92%)

while a steady increase of 46.42% from 2016 (40,402 cases) to 2018 (59,155 cases). The special task, which is outside the scope of fire cases and rescue operations as stated in section 50 of the Firefighter Act 1988, showed a significant decrease from 42,712 cases in 2014 and 13,874 cases in 2018 (a decrease of 67.52%). The special task refers to any task assigned by the authorised officer deemed fit and necessary. Fake calls denoted a low percentage throughout the year from 2014 to 2018. From this statistic, despite the decrease in fire cases, the rescue operation steadily increased from 2014 to 2018. These numbers also remained high, with thousands of cases each year showing that firefighters must be ready physically and mentally to attend the emergency calls.

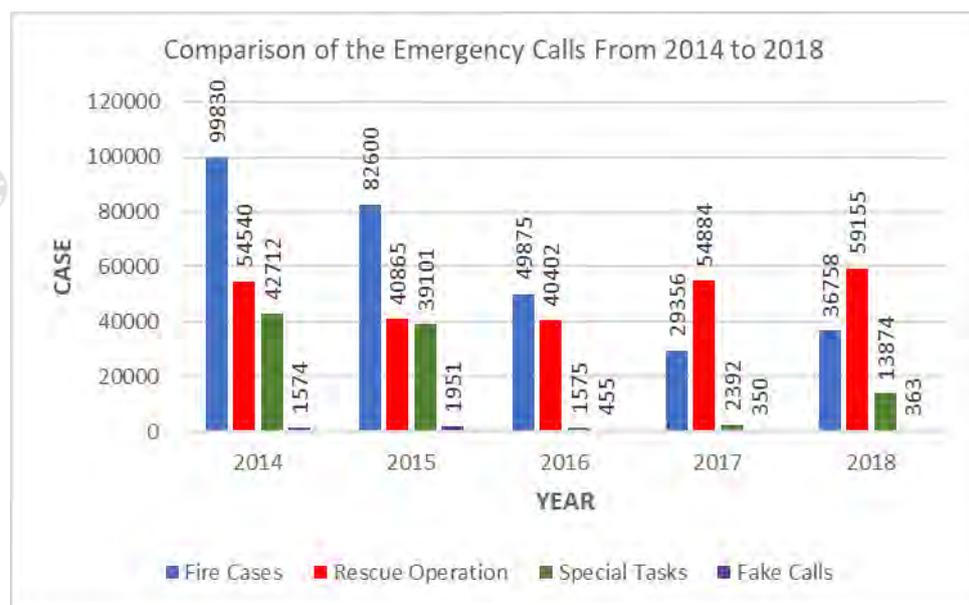


Figure 1.1. Comparison of the total emergency calls in Malaysia from 2014 to 2018. Adapted from Bomba Report, 2018

By referring to the statistics and the job description of a firefighter, it is reflected that firefighters experienced more work-related stressors as the working environment exposed them to emergency and traumatized situations. Despite being ready for physical fitness, the aspect of psychological well-being also needs to be considered

among the firefighters, such as occupational stress relating to their operational work or other career issues. In the long term, if this matter is not addressed early, it may impact their job performance and work attitudes.

1.2.3 Firefighters and Mental Health Concern

The firefighter is regarded as one of the most stressful jobs which are exposed to emergency cases and can affect either physically or mentally of the firefighters. Present-day firefighters are responsible for multiple scopes of jobs such as rescue operations, hazardous material management, responding to natural disasters and domestic attacks and providing emergency medical services, providing different experiences towards each firefighter. The nature of the job of the firefighters is very significant, which revolves around saving the lives of human beings from accidents, emergency cases and involvement in special tasks. Firefighters are the emergency responders repeatedly exposed to traumatic events; hence it is not surprising that mental health among firefighters has been the focus of previous studies.

One study conducted by Saroja, Kasmini and Muhamad et al. (1995) to examine the relationship between the stress of firefighters during the Highland Tower condominium collapse rescue in 1995 showed a significant number of participants with high impact life events, obtained high General Health Questionnaires (GHQ) scores as compared to participants with low impact life events. This study is included in the research as it is among the earliest study conducted in Malaysia involving firefighters

as the participant sample. In this study, the participants with high-impact life events refer to the firefighters involved in the incidents. Therefore, there is a possibility that the involved firefighters have psychiatric morbidity in the aftermath of the incident. Despite no injury or death of a loved one during the incident, the study reported the aftermath of the rescue workers that felt guilty for not being able to save the victims earlier, and the community blamed the rescue workers. This condition, however, is not being explored further by the researcher in the current research, and the recommendation is to examine further the rescue workers potentially developing delayed post-traumatic stress disorder. The study mentioned above is among the early studies that measure the impact of emergency incidents on the psychological well-being of firefighters and indicates the importance of understanding the psychological well-being of firefighters after an incident during operational duties. It is a growing concern about the mental health of firefighters, especially when they return from duty due to emergency calls.

In 2018, the nation was surprised by an incident during the operational duties causing the death of the late Muhammad Adib Mohd Kassim from the Emergency Medical Rescue Services (EMRS) Balai Bomba dan Penyelamat Subang Jaya at the Seafeld Sri Maha Mariamman Temple (Berita Harian, December 18, 2018). In the same year, six firemen from the Water Rescue Unit (PPDA) Balai Bomba dan Penyelamat Pelabuhan Klang and Balai Bomba dan Penyelamat Shah Alam were drowned during the rescue mission in a mining pool (Berita Harian, October 4, 2018). The incidents have become an eye opener to the nation that firefighters' job is beyond helping people, but also sacrificing their own life. The incident of the late Muhammad

Adib Mohd Kassim, who was found dead during an operation still undergoing investigation, and no conviction has been made. Meanwhile, the incident of six firefighters during the rescue operation of a drowning victim in a mining pool left a considerable impact on the nations as viewing the responsibility of firefighters is beyond rescuing victims but having to sacrifice their own lives during their operational duties. Despite abiding by the strict standard operating procedure (SOP) highest priority on safety, the probability and risk of injury and death during operation duties cannot be eliminated. When these tragedies occur, the colleagues and the families behind are the most impacted by the incidents.

1.3 Problem Statements

The review and discussion in the earlier section form the backdrop of the concluding statements of the problem in the present study. Jobs related to emergency incidents required firefighters to be readily prepared to respond to emergency calls. The incidents can be highly stressful, intense, and traumatic and require high physical involvement. The situation may generally vary from a medical emergency, vehicle crash, fire, chemical explosion or utility emergency. Although the firefighters have been trained during their recruitment or throughout their services to handle such cases and develop resiliency, previous researches suggest that prolonged, repeated exposure may cause negative psychological consequences from their experiences (Jahnke, Poston and Haddock et al., 2016).

In addition to the traumatic stressors, firefighters are also susceptible to other stressors, such as occupational stressors such as exposure to hazardous material, fears of injury to self and co-workers and emotionally charged situations (Katsavouni, Bebetos & Malliou et al., 2016). These occupational stressors may be considered the organisational factors that contribute to stress impacting the firefighters' mental health (Sawhney et al., 2018). Previous studies are limited to foreign countries where the cultural context differs from the local studies, especially in Malaysia. The consideration of cultural context provides the gap in the studies among the Malaysian firefighter population. It is worth investigating to identify the type of organisational stressors or challenges that may contribute to firefighters' mental health. Despite the expected challenges reflected in the job description for firefighters as specified in the Firefighters Service Act 1988, exploring the challenges may identify to what extent other factors contribute to the mental health of firefighters.

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 Malek et al. (2009) on the source of stress and level of mental health among Malaysian firefighters and work stress among firefighters by Noraini and Noorasmah, (2019). The focus of research among Malaysian firefighters is also highlighted on the physical aspect, such as the research on physical fitness by Atikah et al. (2015) and body weight related to nutrition intake as conducted by Rahimi et al. (2017). Previous studies, especially among the Malaysian firefighter population, have yet to treat the aspect of challenges among the firefighters and how they contribute to their mental health 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 et al., 2021).

To cope with the challenges or stressors contributing to mental health, firefighters may use coping mechanisms or strategies during their services. However, previous studies found that the type of coping mechanism used by firefighters yielded mixed results from problem-based, emotion-based, or proactive coping. Other maladaptive coping strategies are also identified in the firefighters population, which predicts PTSD prevalence among firefighters (Skeffington, Du & Gruber, 2017). Since firefighters encounter unique stressors such as the 24-shift or high-stress occupation, they may require different opportunities as their ways for coping compared to individuals with commonplace work schedules (Sawhney et al., 2018). Hence, the generalisability of much-published research on the commonly used coping mechanism among firefighters is problematic. Besides that, due to the typical 24-hour working shift of firefighters, they may need different coping mechanisms that are helpful for them either at work or home and how this coping mechanism can further promote their mental health.

Past studies among Malaysian firefighters focused on the factors of stress and level of mental health through a quantitative approach and descriptive. Less-known research has delved into exploring the challenges of Malaysian firefighters precisely and how they impact their mental health relevant to the Malaysian context and local

circumstances. Based on the concerns stated in the previous paragraph, the experience of the firefighters is worth investigating with the aim that the finding will contribute to the body of knowledge on identifying the challenges in firefighting services, how it impacts the firefighters' mental health and how the Malaysian firefighters cope with the challenging situation. This information could create more opportunities for the management to provide psychological support to the firefighters, especially those facing or experiencing repeated exposure to traumatic events during their services.

1.4 Research Objectives

The aim of the study is as follows:

1. To explore the challenges of Malaysian firefighters;
2. To explore the impact of challenges to Malaysian firefighters; and
3. To understand the coping strategies of Malaysian firefighters when facing challenges that impact them.

1.5 Research Questions

1. What are the challenges faced by Malaysian firefighters?
2. How does the challenges impact the Malaysian firefighters?
3. How Malaysian firefighters cope with challenges that impact their health?



1.6 Definition of Key Terms

For this study, the following terms were defined to clarify the understanding of the topic of the study. The definition is expressed through the conceptual definition and the operational definition. The conceptual definition means that the explanation of specific terminologies is used to give the concept's meaning, which involves understanding the importance before it is used or applied. Meanwhile, the operational definition described how variables were measured (Gravetter & Wallnau, 2013). In this study, there are three key terms which are (1) challenge, (2) mental health and (3) coping mechanism. Each of the terminologies is defined operationally and conceptually in the following sections.



1.6.1 Conceptual Definition of Challenges

According to Ryff, Singer and Seltzer (2002), challenges can be viewed as normative life events, depending on the particular culture, such as career, marriage, becoming a parent or retirement. These normative life events occur within an individual as part of the growth and life journey. Meanwhile, unexpected life challenges are known as non-normative life events, such as unanticipated illness and financial crises. Notwithstanding their outdated nature, reference these sources is cited in recognising their enduring significance in the popular definition. The challenge is also viewed in workplace settings where McQuerry et al. (2019) classified workplace challenges into two aspects; psychological and physical. Challenge is also defined using the popular biopsychosocial model by Blascovich and Tomaka (1996), where the challenge is a motivational orientation involving the interaction of affective and cognitive processes



that result from a comparison of situational and task demands to one's available resources to deal with them. Resource components include skills, knowledge, abilities; certain dispositions; and external support. Demand components refer to the danger, uncertainty, and required effort. According to this theory, the challenge occurs when evaluated resources meet or exceed assessed demands. This theory did not refer to only "challenge" but also "threat" as the component of motivational orientation. This theory extended the measurement of "challenge" by including physiological assessment and self-report measures. Although these sources may be outdated, it is included in citations as they remain influential within the prevailing scholarly framework. From this conceptual definition, the term "challenge" is generally understood to mean a situation that occurs throughout life either as normative life events when the resources meet or unexpectedly occurring throughout life when it exceeds the demands.

1.6.2 Operational Definition of Challenges

This study explores challenges using the interview protocol developed to address the questions. In this study, the affective events theory (Weiss & Cropanzano, 1996) is used as a guideline to develop the research questions based on the dimension of challenges. In defining the operational definition, an interview protocol is developed based on the theory to govern the scope of questions based on the research objectives. The part of the theory used to create the research question is "Work Environment Features" and "Work Events". Challenges are, therefore, operationally defined by the participants' responses in answering the question, as in Table 1.1.

Table 1.1

Interview Questions for First Research Question

Research Question	Dimension	Questions
What are the challenges faced by Malaysian firefighters?	Work environment features	How would you describe your work situation at the moment? Why do you feel that way? How are the procedures that you have to undergo in order to complete your task? How do you feel about the procedures?
	Work events	What are the issues and challenges faced by firefighters in carrying out their responsibilities? What is the factor that contributes to those issues / challenges?

1.6.3 Conceptual Definition of Mental Health

According to World Health Organization (WHO, 2013), mental health is a state of well-being in which an individual recognizes their potential, can cope with everyday pressures, can function productively and fruitfully, and can contribute to society. From the definition of WHO, mental health is the state of well-being, and it is not binary – either we are mentally healthy or mentally ill. Keyes (2002) introduced a mental health continuum model, as shown in Figure 1.2, which conceptualizes mental health as a balance between positive and negative emotions and functioning with consideration that these aspects can manifest symptoms of mental illness or mental disorders. Keyes and Lopez (2002) proposed the state of mental health can be classified in a continuum model known as (1) struggling, (2) flourishing, (3) floundering or (4) languishing. According to this model, an individual can fall into the quadrant of flourishing

(complete mental health) when they have an optimal and no mental illness. On the other hand, a person that has optimal mental health but has mental illness falls under the struggling quadrant (incomplete mental illness). A person may have poor mental health but not suffer from mental illness and falls under the languishing quadrant (incomplete mental health). When an individual has poor mental health and suffers from mental illness, they fall under the floundering quadrant.

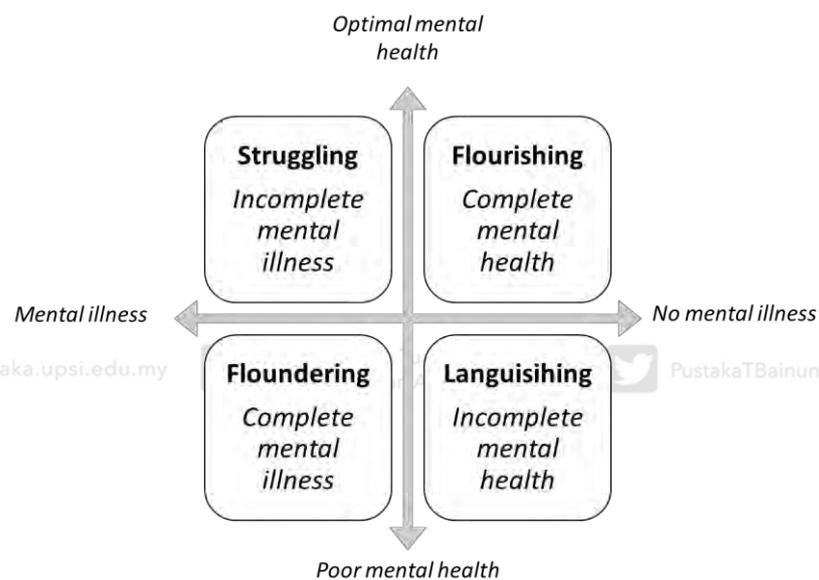


Figure 1.2. Mental health dual continua model. Adapted from Keyes (2002)

1.6.4 Operational Definition of Mental Health

Mental health is operationally defined in this study by asking participants questions about their perception and understanding of the meaning of mental health, which is guided by the interview protocol. The questions related to the impact of mental health are developed using the Affective Event Theory (Weiss & Cropanzano, 1996) on the

part of “Disposition” and “Affective Reactions”. Mental health is operationally defined by the responses and themes generated after data analysis for the following interview questions in Table 1.2.

Table 1.2

Interview Questions for Second Research Question

Research question	Dimension	Questions
How the challenges impact the mental health of Malaysian firefighters?	Affective reactions	What are the effects that the firefighters had experienced because of the situation? How would you describe your mental health status currently?
	Disposition	What are your strengths in completing the task? What are your weaknesses in completing the task? What motivates you to go through this job? What does being a firefighter mean to you? What causes you to stay as a firefighter?

The responses can be from their own opinion, experience or anything related to their surroundings. The participants are free to express their opinion on the meaning of mental health and how they would describe their current mental health. After exploring the challenges and issues in their firefighting duties, further questions will be asked to explore the impact of the challenges on their emotions, behaviour or cognition concerning their mental health. This expression of their state of being is not limited to any encountered incidents during their services. However, it is also relevant to any current mental health state during the interview. The state of mental health of the

supervisors will be explored together with their perception of their subordinates' mental health.

1.6.5 Conceptual Definition of Coping Mechanisms

Lazarus and Folkman (1987) explained coping through a transactional model as a phenomenon involving cognitive and behavioural responses that an individual uses to handle internal or external stressors that exceed their resources. Coping is described as a phenomenon involving cognitive and behavioural responses performed by individuals to manage internal and external stressors perceived as exceeding their resources. In the transactional model, coping is viewed as a dynamic process, a series of transactions of individuals with resources, values and commitments and a particular environment with its resources, demands, and constraints (Folkman & Maskovitz, 2004). To that, coping is not a one-time strategy by an individual but rather a set of responses occurring over time where the environment and the person influence each other. According to the prominent Lazarus and Folkman (1983), coping mechanisms are classified into two types which are (1) problem-focused coping and (2) emotion-focused coping. Problem-focused coping is eliminating stressors or doing something to control the situation. In this type of coping, the source of stress is identified, and the individual will overcome the problem to prevent the situation from worsening or impacting the well-being. Emotion-focused coping is a strategy that involves changing how the person feels or emotionally reacts to the stressors so that the person can deal with the problem more effectively. This coping also works for uncontrollable stressors or when problem-focused coping is impossible.

1.6.6 Operational Definition of Coping Mechanism

The operational definition of coping mechanism in this study is obtained from the answer given by the respondents during the interview session, which is governed by questions developed using the Coping Process (Cohen & Lazarus, 1979; Hamburg & Adams, 1967; Lazarus & Folkman, 1984). Table 1.3 shows the dimension of the interview questions guided by the Coping Process.

Table 1.3

Interview Question for Third Research Question

Research Question	Dimensions	Questions
How Malaysian firefighters cope with challenges that impact their mental health?	Appraisal and interpretation	Throughout your career, what kind of trauma have you or your subordinates experienced that had a negative impact on your mental health?
	Coping responses and coping task	If there is any, how do you deal with the issue or situation? What are the strategies taken by the organization to deal with the issues? Have you ever undergone a mental health screening? Have you ever seen a psychologist, psychiatrist or counsellor to seek help or treatment?
	Coping outcome	What is your opinion regarding the strategies you stated above? How do you think the strategies help you to cope with the challenges? Which strategies do you think not help you in coping the challenges?

1.7 Conceptual Framework of Study

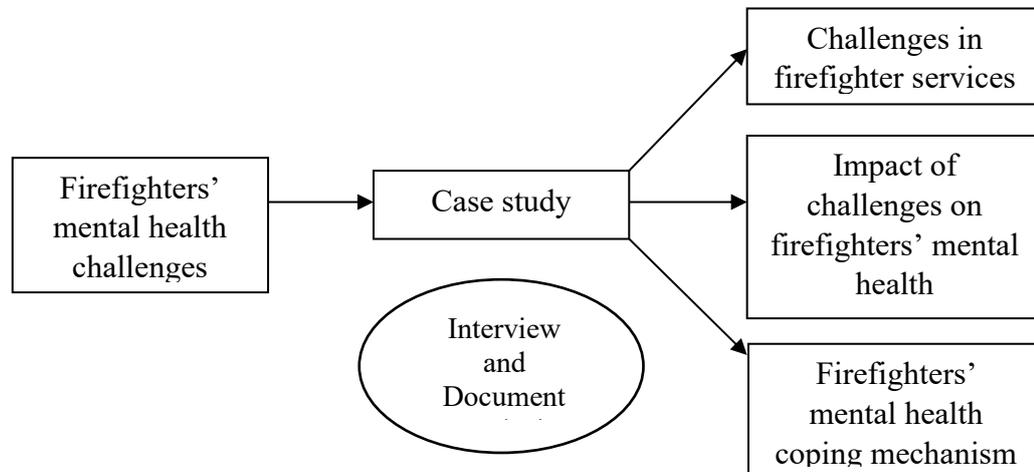


Figure 1.3. Conceptual framework of study

Figure 1.3 shows the conceptual framework of this research. Firefighting services are the main aspects explored in this study through a qualitative method using the case study approach. The data were collected through personal interviews with the supervisors and focus group discussions with the subordinates. Document analysis will also be used as part of this qualitative study involving public documents, such as documents related to JBPM assessed via the JBPM website and other articles related to firefighters from reliable internet resources. Private documents unavailable online such as confidential documents are requested directly from the JBPM. From the interview and document analysis, the information on the challenge in firefighting services, the impact of firefighters' mental health and the coping mechanism used by firefighters are identified as the research outcome.



1.8 Limitation of Study

There are several limitations to this study. The participants were recruited through a purposive sampling technique. This study only involved the firefighters from the urban area in Kuala Lumpur and Selangor area and did not involve firefighters from the rural area. The selection of participants from the urban city in this study was proposed and asked for approval from the Department of Planning and Research, Malaysia Fire and Rescue Forces (PUSPEK). The participants' criteria were clearly stated to the PUSPEK officers in assisting the selection of participants in this study. The selection condition is that at least one firefighter team supervisor was selected in each fire station, with a maximum of three supervisors. Next, one subordinate focus group consisted of around 4 to 5 firefighters. However, the officer decides which firefighters will be involved in this study. The careful selection of participants was conducted to abide by the rules and regulations arranged by PUSPEK in conducting research among the firefighters. Thus, the limited number of participants recruited through this purposive sampling technique cannot be generalised to the diverse population of firefighters. However, the findings are transferable in understanding firefighters' challenges and struggles in a similar locality.

Besides that, the limitation of the study may come from participant bias. The study will use a qualitative approach using personal interviews with the supervisors or focus group discussions with the subordinates. As data is collected through interview questions, the social desirability factors may affect the participants' responses towards the interview questions. To prevent such an occurrence, the researcher needs to build



rapport with the participants and create a comfortable environment at the beginning of the interview so that the participants can voice their opinions more freely.

1.9 Significance of Study

This section discussed the significance of the study to the firefighters, Department of Malaysia Fire and Rescue Forces, Ministry of Housing and Local Government and the theoretical significance.

1.9.1 Firefighters

This study allows the understanding of the challenges of firefighters in their duties which can contribute to their mental health. At the same time, the type of coping strategies explored will give more understanding of the coping mechanism that may contribute to better mental health. Understanding the challenges in firefighting services make them aware of their mental health capacity, and preventive measures can be taken before leading to a severe mental health problem such as chronic depression or post-traumatic stress disorder (PTSD). Besides that, the nature of firefighters is different as it involves work shifts and exposure to traumatic events. Therefore, the challenges they face are different compared to conventional office-hour jobs. Hence the firefighters may become more aware of dealing with such uncertainties during the firefighting services.

1.9.2 Department of Malaysian Firefighters and Rescue Forcers (Jabatan Bomba dan Penyelamat Malaysia)

In line with the Eleventh Malaysia Plan in promoting wellness among the society (worker, family and community) for a balanced development with economic growth, the finding is valuable for the management and the headquarters of the Department of Malaysian Firefighters to provide preventive measures to support firefighters with mental health issues. The finding can also help enforce the mental health support already or not yet provided by the management. At the same time, understanding the challenges of firefighters enable the management team to scrutinise the input from the firefighters to manage their working environment better. The study's findings will also be valuable to understand what initiatives of the organisation are helpful to the firefighters and how to maintain or enhance such initiatives to ensure the work-life balance of firefighters. Since the study will include both the supervisors and subordinates, the finding will provide a significant contribution for the management team to understand the team members better and identify the gaps that can further enhance the work performance of the firefighters.

1.9.3 Ministry of Housing and Local Government

The study provides valuable information about the factors contributing to Malaysian firefighters' psychological well-being. The nature of the qualitative study provides rich information in which the questions asked are open-ended and allow the participants to share as much information related to the research questions. This study will also allow more input by incorporating local and cultural perspectives since most of the research

on firefighters' mental health was conducted in foreign countries and may not be suitable for implementation in the local country. The effort will help the higher authorities or the stakeholder to understand and be aware of the importance of mental health and well-being among their employees.

1.9.4 Theoretical Significance

The present study's findings are expected to contribute to some extent to the factors that contribute to the mental health outcome of firefighters. In other words, the finding of the present study is expected to add and complement the previous studies related to Affective Event Theory on “work environment features” and “work events” during firefighter services and how those factors impact mental health and cause “affective reaction” of firefighters. The theory related to mental health is discussed in detail in Chapter 2, which act as the study's backbone in deriving the interview protocol questions. The integration of theory will also add to the literature to what extent the model can be used to explain the findings or yield new findings. The findings are further expected to contribute to the new understanding of the type of coping mechanism used by emergency personnel such as firefighters, how it differs from the other types of occupation and integrates with the relevant cultural context.

1.10 Conclusion

This chapter provides an overview of the overall idea of the research. The background of the study, problem statements, research objectives and questions were discussed in



this chapter. The theoretical framework and definition of variables were discussed as the foundation of the research topic. Lastly, the limitation and significance of the study's relevance to the research study are explained.

