Original Article

Journal of Occupational Health and Epidemiology
Journal Homepage: https://johe.rums.ac.ir/
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Burnout and Coping Mechanism during the National Covid-19 Recovery Plan Phase: Assessing the Impact on Malaysian OSH Competent Persons

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Citation: Pasi H, Zein RM, Shariff RM, Ibrahim MA, Mohd Ali FR, Yee JHC, Fahmi Salihen NA. Burnout and Coping Mechanism during the National Covid-19 Recovery Plan Phase: Assessing the Impact on Malaysian OSH Competent Persons. J Occup Health Epidemiol. 2024;13(3):190-8.

Article Info

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Article history
Received: Sep 2023
Accepted: Aug 2024

10. 61186/johe.13.3.190

Print ISSN: 2251-8096
Online ISSN: 2252-0902

Peer review under responsibility of Journal of Occupational Health and Epidemiology

Abstract

Background: The COVID-19 pandemic has affected millions of people and its impact continues to be felt during the post-pandemic phase. This study aimed to measure the occurrences of burnout and the coping mechanisms adopted by Malaysian OSH competent persons during the national post-pandemic recovery plan phase.

Materials and Methods: A cross-sectional study of 403 OSH-competent persons was conducted between February and June 2023 using an online form to measure burnout with the validated 19-item Copenhagen Burnout Inventory and coping mechanisms with the Brief COPE questionnaire. IBM SPSS (Version 26.0) was used to assess associations through linear regression analysis, with p-values <0.05 considered significant.

Results: All three domains of personal, work, and client-related burnout were within the low-burnout range with a score of 17.9 (±3.5), 18.4 (±3.1), and 26.8 (±5.8), respectively. The highest mean score of the coping strategy was emotion-focused at 26.8 (± 5.8). Personal-related burnout was significantly associated with avoidant ($\beta = 0.24$, $p<.001$), problem-focused ($\beta = 0.16$, $p=.014$), and emotion-focused coping ($\beta = 0.18$, $p=.005$), while client-related burnout was significantly linked with avoidant ($\beta = -0.28$, $p<.001$) and emotion-focused coping ($\beta = -0.13$, $p=.046$). No other significant associations were found between variables.

Conclusions: Burnout levels in personal, work, and client-related domains were low, with emotion-focused coping being the most common strategy among this population. Personal-related burnout was linked to all coping types, while client-related burnout correlated with avoidant and emotion-focused coping. Thus, comprehensive training on effective coping strategies is crucial to prevent future burnout in this population.

Keywords: Fatigue, Burnout, Coping, Occupational Safety, Health

Introduction

The COVID-19 pandemic has affected millions of people and left a significant impact throughout the world. Its enormity not only leaves its mark economically but has also physical and mental effects on those who were exposed to it. Because of this

massive magnitude, the impact can still be significant on people's physical and mental well-being, even during the post-pandemic phase, referred to as the National Recovery Plan in Malaysia. This plan aims to restore the economic, developmental, and public health status of the population to the pre-pandemic condition. However, the plan faces many challenges despite the ending of pandemic, particularly on mental health which include but not limited to the occurrence of burnout and how people cope with it. This warrants a closer examination of these impacts to better understand and expedite the nation's recovery [1,2].

Burnout is defined in the International Classifications of Disease version 11, ICD-11 as a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: feelings of energy depletion or exhaustion; increased mental distance from one's job, feelings of negativism or cynicism related to one's job; and reduced professional efficacy. Additionally, according to ICD-11, burnout should refer specifically to phenomena in the occupational context and should not be applied to describe experiences in other areas of life [3]. In the context of scientific and psychosocial research, the concept of burnout was introduced in the early 1970s by many renowned experts on the subject, and since then it flourished to become one of the important occupational-related determinants that affect all levels and categories of workers [4-6].

In terms of measurements, just as the initial concept, there are many widely used questionnaires for measuring burnout among workers. The first well-known questionnaire is the Maslach Burnout Inventory, MBI developed by Christine Maslach and Susan E. Jackson in 1981, which is considered the gold standard in the measurement of burnout [7, 8]. However, despite the multilingual translations of the tool, due to its commercially distributed status, the full version is not readily available in the scientific journal [9]. This has thus hindered its potential to be used among the non-profits gained researchers' community.

Other widely used questionnaires to measure burnout which is readily available without cost include the Oldenburg Burnout Inventory (OLBI), Bergen Burnout Inventory (BBI), and Copenhagen Burnout Inventory (CBI) [10-12]. Among all these questionnaires, the CBI is one of the best options for the measurement of burnout, thanks to its three sub-dimensions which are personal burnout, work-related burnout, and client-related burnout. The three sub-dimensions have helped ensure that the focus of the measurement is on the source of burnout, rather than on the symptoms, which is one of the highlighted weaknesses of some of the burnout inventories [13].

Moving on to the coping mechanism, it has been defined as an action, a series of actions, or a thought process used in meeting a stressful or unpleasant situation or in modifying one's reaction to such a situation. Further, it involves the use of behavioral and cognitive tactics to manage crises, conditions, and demands that are appraised as distressing [14, 15]. Just like burnout, previous literature has shown that humans use various mechanisms to overcome all their stressful situations [16-18]. With respect to measurement, there are many tools available to be used. One of them which will be used in this current study is the 28-item Brief Coping Orientation to Problem Experienced, COPE questionnaire, which is the shorter version of the original 60-items developed by Carver, Scheier, and Weintraub in 1989 [19]. The 28 items are further classified into 14 dimensions which include self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion and self-blame.

Zeroing on and acknowledging the issues of coping mechanisms as well as burnout occurrences as a direct and indirect effect of the COVID-19 pandemic among workers, many studies, both in and outside of Malaysia, have been conducted among the front liners and COVID-19 patients [1,2, 20,21]. However, it was noted that this topic has not been comprehensively studied among a specific group of highly trained workers in the area of safety and health hazard identification, namely the Occupational Safety and Health (OSH) competent person. A competent person in OSH is someone appointed by the employer and authority, possessing appropriate training, knowledge, experience, and skills to carry out specific tasks such as identifying workplace hazards, with the authority to prevent or correct them. Additionally, these individuals need to possess competencies recognized and registered by the Department of Occupational Safety and Health (DOSH) [22]. However, despite being exposed to occupational hazards on a regular basis due to the nature of their work, studies focusing on this particular group of population have been scarce. Thus, this study aims to measure the occurrences of burnout and the coping mechanism adopted by Malaysian OSH competent persons during the pandemic and national COVID-19 recovery plan phase in Malaysia.

Materials and Methods

The data were collected through an online cross-sectional study using a self-filled online questionnaire, among OSH-competent person in Malaysia between February and June 2023. Out of 68,501 OSH-competent persons registered with the Department of Occupational Safety and Health (DOSH), 403 participants were purposely selected and participated in the study, based on the inclusion and exclusion criteria set. Sample size calculation was calculated using Krejcie and Morgan

Sample Size calculation [23] with a 0.5 population proportion and 0.05 degree of accuracy.

As stated above, the inclusion criteria for this study were being an OSH-competent person registered with the DOSH Malaysia during the period of study. In contrast, there were several exclusion criteria set for this study. Respondents were excluded from the study if they were unemployed, residing outside Malaysia during the pandemic, or not adhering to the National Recovery Plan (NRP).

In addition, respondents with an existing history of being diagnosed with psychiatric illness or a history of seeking treatment at a psychiatric clinic were also excluded from the study.

The collected data were analyzed using the IBM SPSS Statistics for Windows, Version 26.0. All continuous variables were described using mean (SD) and/or median (IQR) whereas categorical data as frequency (%). Univariate and multiple linear regression was applied to assess the association between burnout and coping strategies adopted by the OSH-competent persons in this study. Results with a p-value of <0.05 were considered statistically significant, and all reported p-values were two-sided.

Sociodemographic and financial characteristics of the respondents: To provide a background information on the respondents, the sociodemographic data collected in the current study included age, gender, marital status changes, current status, children's details, ethnicity, education level, household composition, medical history, COVID-19 experience, and caregiving. Additionally, the financial details collected included household income, employment status, property ownership, vehicle ownership, monthly expenses, financial assistance received, and related details.

Copenhagen Burnout Inventory, CBI: The Copenhagen Burnout Inventory used in this study was an 18-item Malay version of the original questionnaire which was translated by Andrew Chin et al in 2017. There are three main burnout domains measured by this questionnaire, which are personal burnout, work-related burnout, and client-related burnout. In terms of scoring, it was rated by a five-point Likert scale, ranging from "0" to "4" with high scores indicating high levels of burnout. There were two sets of ratings used for this questionnaire. For items 1(a-f) under the personal burnout domain, items 2(d-f) under work-related burnout, and items 3(e-f) under client-related burnout, responses were measured on a scale from "always" to "never/almost never," scored from 0 to 4

On the other hands, the other set of rating used was "to a very high degree, to a high degree, somewhat, to a low degree and to a very low degree (score "0" to "4"). These were specifically for items under work-related, 2 (a-c), and client related, 3 (a-d) [10, 24].

To ensure its validity to be used for our research, a pilot study was conducted involving 40 respondents who fulfilled the criteria, but not part of the study population. Principal factor and reliability analysis of the data showed a good factor loading between 0.593 and 0.903, and good Cronbach alpha values of 0.919, 0.876, and 0.950 for each domain including personal, work-related, and client-related burnout respectively. The Cronbach alpha value for total items of the questionnaire was also very good with a value of 0.932. Additionally, the Kaiser–Meyer–Olkin (KMO) test for sampling adequacy value was 0.843, while the Bartlett's test of sphericity was <0.05. This, would, in turn, suggest that there is a substantial correlation in the data. Therefore, the questionnaire is valid and reliable to be used across our study population.

Brief Coping Orientation to Problems Experienced, COPE Questionnaire: The Brief-COPE was a 28-item self-report questionnaire and was rated by the four-point Likert scale, ranging from "I haven't been doing this at all" (score one) to "I have been doing this a lot" (score four). In total, 14 dimensions were covered by this scale. These were self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame. Every dimension has two items, thus bringing a total of 28 items altogether. Consecutively, the 14 domains were further categorized into three domains, namely avoidant coping, problem-focused coping, and emotion-focused coping. Interpretation-wise, a higher total score represents greater coping strategies used by the respondents. The questionnaire version used in this study is the locally validated Malay version with good validity and reliability [19, 25].

Just like the CBI questionnaire, a pilot study was conducted to ensure the validity and reliability of the COPE questionnaire to be used in the current study. Forty respondents with the same criteria but not part of the study population participated in the pilot study. Factor analysis of the data revealed that the factor loadings of all the items in the questionnaire were good with a range between 0.543 and 0.939. For reliability analysis, it was found that the Cronbach alpha values for items in the questionnaire ranged between 0.57 and 0.96, except for items number 15 and 16 under the dimension 'Venting'. Additionally, the KMO test for sampling adequacy value was 0.423; thus there may be issue with the strength of correlations between items in the questionnaire. Nevertheless, the Bartlett's test of sphericity value was <0.05, hence it still meets the assumption of equality of variances (i.e., homogeneous). Collectively, it can be concluded that this questionnaire is also valid and reliable to be used across the study population.

Results

Sociodemographic characteristics and financial background of the respondents: The study included 403 OSH competent persons, with mean age of 38.8 (±8.4) years old, and predominantly male. Malays made up over 60% of participants, with the remainder including Chinese, Indian, Sabahan, Sarawakian, and others. More than half had attained diplomas or degrees and were heads of households, with over two-thirds married for at least three years. Each household had a mean of four members (± 2, minimum one and maximum 12 number of members per household) and two children (± 2, minimum zero and maximum nine number of children), with few reporting medical illnesses and about half having had COVID-19 without hospitalization. Nearly half cared for family members with COVID-19. Financially, the median household income was RM 7000 with interquartile range of RM 5475 to RM 10000, and minimum income of RM 3000 plus maximum of RM 25000, with mean of two working members per household (± 1, minimum=1, maximum= 5) and 80% owning properties and vehicles under installment. Most exceeded their RM 6000 monthly budget, but nearly 80% saved RM 400 monthly, and few received financial assistance or had family members with special needs.

Burnout and Coping strategies adopted by OSH Competent Persons: Regarding the mean score of Copenhagen Burnout Inventory, CBI (Appendix 1) to measure the burnout status of the respondents, it was noted that the mean score for personal burnout domain was 40.5 (± 16.9) and work-related burnout was 33.5 (±17.6), while the client-related burnout domain score was 25.8 (±17.3). All three of these scores were found to be within the low-burnout range of < 50 scores.

Focusing on each domain, for personal burnout, it was noted that the item with the highest mean score was item number 1 which asked " How often do you feel tired?" with mean of 1.89 (±0.76), while item with the lowest score under this domain was item number 4 which asked "How often do you think: "I can't take it anymore"? with a mean score of 1.22 (±0.89).

Similarly, for work-related burnout, the item with the highest score was item number 4, "Do you feel worn out at the end of the working day?' with a mean score of 1.73 (±0.83). Meanwhile, the item with the lowest score under this domain was item number 3, "Does your work frustrate you?" with a core of 0.97 (±0.84).

Lastly, for domain client-related burnout, item number 5, "Are you tired of working with clients?" was the item with the highest mean with score of 1.25 (±0.81), while item number 1, "Do you find it hard to work with clients?" was the lowest with 0.86 (±0.72) mean score.

Moving to the mean score of the brief Coping Orientation to Problems Experienced Inventory, Brief-COPE (Appendix 2) to identify the most adopted coping strategies by the respondents, it was noted that the coping strategy with the highest mean score was the emotion-focused coping at 26.8 (± 5.8), followed by problem-focused coping at 18.4 (3.1), while the least adopted coping strategy was avoidant-coping at 17.9 (±3.5).

Among coping activities under emotion-focused coping domain were venting, use of emotional support, humor, acceptance, self-blame, and religion. Out of these, acceptance was the coping strategy with the highest mean score at 5.92 (±1.42), while item religion was the least adopted coping with mean score of 3.67 (±1.54).

Conversely, the least adopted coping strategies under the domain of avoidant-coping were self-distraction, denial, substance use, and behavioral disengagement. Similarly, out of these, self-distraction was the item with the highest mean score at 5.36 (±1.13), while item behavioral disengagement with mean score of 3.78 (±1.14) had the lowest mean score.

On a same note, activities under the domain of problem-focused domain included active coping, use of informational support, planning, and positive reframing. Out of these, positive reframing was the item with the highest score with 5.28 (±1.23), while active coping has the lowest score at 1.27 (±0.54).

Association between burnouts and coping strategies adopted by OSH competent persons: Regarding distribution of coping strategies based on the burnout severity categories of the respondents (Table 1), The results showed that respondents across all levels of burnout severity (low to severe) predominantly preferred emotion-focused coping over other coping strategies, with scores ranging from 18.2 to 27.4.

Additionally, all severity categories for work-related and client related burnout preferred to use problem-focused coping second (13.3 to 18.8). However, for personal-related burnout, only the low and moderate group preferred the problem focused coping (18.0 to 19.0), while the high burnout group preferred the avoidant coping as their second coping strategies (scores of 18.5 to 22.8 versus 17.1 to 18.3).

To measure the association between burnout and coping type among respondents, a multiple regression analysis was used to test if the burnout scores significantly associated with each coping type. For avoidant coping (Table 2), it was found that personal-related burnout was significantly associated with avoidant coping, whereby with every one score increase in personal-related burnout, the avoidant coping score rose by 0.24 (β = .24, $p<.001$). In contrast, with every one score increase in client-related burnout, the avoidant coping score dropped by 0.28 (β = -.28, $p<.001$).

Table 1. The descriptive distribution of M-CBI severity categories by COPE mean score among respondents (N=403)

CBI scores (severity categories)		Frequency n	Coping type mean score (SD)		
			Avoidant coping	Problem-focused coping	Emotion-focused coping
Personal-related burnout	Low	259	17.7 (2.9)	18.0 (2.5)	26.4 (5.2)
	Moderate	138	18.3 (4.4)	19.0 (4.0)	27.4 (6.8)
	High	6	21.0 (3.1)	17.7 (0.5)	27.3 (0.5)
	Severe	0	0	0	0
Work-related burnout	Low	331	18.2 (3.6)	18.5 (3.2)	26.8 (5.8)
	Moderate	57	16.8 (2.5)	17.8 (2.6)	26.9 (6.4)
	High	15	17.5 (4.1)	17.6 (2.3)	26.4 (3.8)
	Severe	0	0	0	0
Client-related burnout	Low	345	18.1 (3.4)	18.4 (3.0)	27.0 (5.7)
	Moderate	47	18.8 (3.6)	18.8 (3.1)	27.0 (5.7)
	High	11	11.6 (0.7)	13.3 (1.5)	18.2 (3.9)
	Severe	0	0	0	0

Table 2. Regression analysis for the association between burnout scores and avoidant coping (n=403)

Variables	B	95% Confidence Interval	β	t	p
Personal-related burnout scores	0.05	[0.02, 0.08]	0.24	3.74	<0.001[a]
Work-related burnout scores	-0.01	[-0.04, 0.02]	-0.05	-0.65	0.517
Client-related burnout scores	-0.06	[-0.08, -0.03]	-0.28	-4.21	<0.001[a]

Moving on to the problem-focused coping (Table 3), the results indicated that only personal-related burnout was significantly associated with this type of coping, in which with every one score increase in personal-related burnout, the problem-focused coping score rose by 0.16 ($\beta = 0.16$, $p=0.014$). Other types of burnout were not significantly associated with problem-focused coping.

Table 3. Regression analysis for the association between burnout scores and problem-focused coping (n=403)

Variables	B	95% Confidence Interval	β	t	p
Personal-related burnout scores	0.03	[0.01, 0.05]	0.16	2.46	0.014[a]
Work-related burnout scores	-0.02	[-0.05, 0.00]	-0.13	-1.79	0.074
Client-related burnout scores	-0.02	[-0.04, 0.00]	-0.11	-1.61	0.109

Meanwhile, for emotion-focused coping (Table 4), both personal and client-related burnout were found to be significantly associated with the type of coping, through which with every one score increase in personal and client-related burnout, the emotion-focused coping scores grew by 0.18 and fell by 0.13 respectively ($\beta = 0.18$, $p=0.005$ and $\beta = -0.13$, $p=0.046$). Nevertheless, no significant association was found between work-related burnout and this type of coping.

Table 4. Regression analysis for the association between burnout scores and emotion-focused coping (n=403)

Variables	B	95% Confidence Interval	β	t	p
Personal-related burnout scores	0.06	[0.02, 0.11]	0.18	2.85	0.005[a]
Work-related burnout scores	-0.01	[-0.06, 0.04]	-0.03	-0.45	0.651
Client-related burnout scores	-0.05	[-0.09, -0.00]	-0.13	-2.0	0.046[a]

Discussion

This study was conducted to measure the burnout as well as the coping strategies adopted by Malaysian OSH competent persons during the pandemic and national COVID-19 recovery plan phase. Additionally, this study intended to ascertain any significant association between the type of burnout and the coping strategies adopted.

On sociodemographic and financial factors, most respondents in this study were male in their late 30s, concordant with other studies wherein many OSH workers were middle-aged males [26] and more Malays compared to other ethnic, since applications and recruitment in the public sector are predominantly composed of Malay individuals.

[27]. On the same note, more than half achieved tertiary education and held the position of head of household. As most were predominantly male workers, this explains the status of being the head of the family. Additionally, most were married and in stable relationships without any recent change in their marital status. Across a number of studies, married individuals report lesser impact of COVID-19, less unhealthy lifestyle, and less loneliness during the pandemic period as compared to the no-spouse respondents [28 – 30].

Moving on to the burnout measured among this population, the study revealed that all three domains of burnout; personal, work and client-related burnout, were within the low-burnout range of < 50 scores. Specifically, the personal-related burnout had a score of 17.9 (3.5) while work-related was 18.4 (±3.1), and client-related burnout had a score of 26.8 (5.8). These findings concur with research conducted among other group of workers during pandemic COVID-19 in India and Thailand, whereby analyses indicated that the mean scores of CBI conducted among these population were less than 50, though the study by Khasne et al had a slightly over 50 mean scores for its client-related burnout scores [31, 32].

However, contrary to the current study, a study in Arab Saudi conducted among healthcare workers, one of the most affected groups of workers due to the nature of their work that deal directly with the COVID-19 patients, showed a burnout score of respectively 67.23, 61.38, and 54.55 for personal, work, and client (patient)-related burnout being far higher compared to the current study, and falling under the moderate severity categories [33]. Due to the same reason, a locally conducted study in Sabah, east Malaysia among healthcare workers using CBI to measure the burnout prevalence during COVID19 showed a slightly different trend since they reported their findings in a proportion rate. In the study, the highest prevalence of burnout was reported to be the personal- related burnout at 61.2%, followed by the work-related burnout at 48.8%, and lastly the client-related burnout at 39.8% [34].

Concerning coping strategy, the current study found that the most adopted coping strategy was emotion-focused coping at 26.8 (± 5.8). This highest coping strategy score was followed by problem-focused coping at 18.4 (3.1), and the least adopted coping strategy was avoidant coping at 17.9 (±3.5). This study is in line with a study conducted among nurses as the frontliners during the COVID-19 pandemic in Pahang Malaysia [20], whereby the result showed that acceptance under the domain of emotion-focused coping was the most adopted coping strategy among this population. This highest emotion-focused coping score also reveaed that when facing a difficult situation or stressful condition, respondents preferred to regulate their emotions associated with the situation [34] rather than on the problem or to avoid the situation.

On the contrary, the current study contradicts findings from a study conducted in Northern Ireland which showed behavioral disengagement under the domain of avoidant coping was the most adopted coping mechanism with a score of 7.16 (±1.08). Unlike the mentioned study, the population in the current study cannot afford to adopt a distancing behavior as a form of avoiding the problem as the nature of their work required them to deal with the hazards at workplace [36].

Focusing on the association between burnout and coping strategies among our respondents, it was noted that most respondents experienced low burnout. Additionally, our findings revealed that workers with personal burnout engaged in all types of coping measured in this study which were emotion-focus, problem focus and avoidant coping, same as other studies conducted in Saudi Arabia, Client-related burnout was associated with lower use of emotion-focused and avoidant coping strategies

[37]. On a same note, previous studies also showed workers who use emotion-focused and problem-focused coping were less likely to experience burnout while those engaged in avoidant coping were more likely to suffer from burnout [38]. Interestingly, another more recent study in Malaysia found that workers prefer to adopt problem-focused coping and emotion-focused coping when dealing with burnout. On the contrary, only problem-focused coping had a significant negative correlation with burnout, while other sub-scales such as emotion- focused coping and avoidant coping showed no significant correlation with burnout and proved to be the most important predictor of burnout reduction [39].

It is notable to mention a few of the limitations encountered by this current study. Firstly, as some of the competent persons hold more than one competency certificate, there is a possibility that the information provided may be a combination of all experiences across the mentioned competencies. Secondly, the questions required respondents to recall their experience

during the pandemic which started about three years ago until the current recovery plan. These will raise the possibility of recall bias on the information provided. Thirdly, since the tools for data collection are self-filled online questionnaires, information bias would be an issue that warrants a cautious interpretation of the results. Further, specific ethnic group is not a criterion to be selected as the study population. However, as mentioned in the Results section, Malay ethnicity hold the majority of ethnic distributions in Malaysia, as compared to other two next main ethic group namely Chinese and Indian. Thus, this may give the impression that this is a specific ethnic group study. Lastly, since the sample population only focused on the selected OSH competent person, therefore the current research can only be generalized to these specific workers, and not to the entire Malaysian population. Hence, future studies should take into consideration all of the limitations listed.

Conclusion

All three domains of personal, work, and client-related burnout among Malaysian OSH competent persons during the pandemic and national COVID-19 recovery plan phase were found to be within the low-burnout range, while the main adopted coping strategy was emotion-focused coping, followed by problem-focused coping and avoidant coping. Further, all categories of burnout severity (low to severe) preferred to adopt the emotion-focused coping as compared to other types of coping. Therefore, it is crucial to provide a comprehensive and targeted training for this population on the most effective coping strategies, as a fundamental component of proactive prevention measures aimed at mitigating the current and future incidence of burnout.

Acknowledgement

Our special appreciation to the National Institute of Safety and Health, Malaysia (NIOSH) for awarding the grant to finance the conduct of this study. The team thanked all the Malaysian OSH competent persons participated in this research.

Conflict of interest

None declared.

Funding

Our special appreciation to the National Institute of Safety and Health, Malaysia (NIOSH) for awarding the grant to finance the conduct of this study under the NIOSH Malaysia Research Grant 2022 which was approved in April 2022.

Ethical Considerations

The study was approved by the National Institute of Safety and Health (NIOSH), Malaysia ethical and research committee. Additionally, a general description, including an informed consent form was included in the first part of the questionnaire. Respondents had been assured that all the information would be kept confidential. All respondents digitally signed the informed consent form themselves before embarking in the study. Additionally, a brief description about the study and why they are chosen to be one of the respondents were provided to the respondents. They were also informed of their rights to withdraw at any time and how the information they give will be used. As for the researcher, we adhered to the principle of the Declaration of Helsinki and the Malaysian Good Clinical Practice Guidelines throughout the research.

Code of Ethics

The study was approved by the National Institute of Safety and Health (NIOSH), Malaysia Ethics and Research Committee (NIOSH/03/SURAT/2022/(138).

Authors' Contributions

Hafizah Pasi: Involved in instrument development, contributed to data analysis, and drafted the manuscript. Raemy Md. Zein: Involved in instrument development, helped in the data collection, drafted the manuscript, reviewed and edited the manuscript. Ruzita Mohd Shariff: Involved in instrument development. Muhamad Ariff Ibrahim: Involved in instrument development, contributed to data analysis, reviewed and edited the manuscript. Fauzah Rahimah Mohd Ali: Involved in instrument development, drafted the manuscript. Joy Khong Chooi Yee: Involved in instrument development, reviewed and edited the manuscript. Nur Alyani Fahmi Salihen: Involved in instrument development, helped in the data collection. All authors read and approved the final manuscript.

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