



## The factors influencing stress among nursing home staff: A cross-sectional study to develop stress measurement scale

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### ABSTRACT

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#### Keywords

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This study aims to identify factors influencing job stress among nursing home staff in Malaysia. Understanding the job stress among nursing home staff is crucial to improving the quality of health care provided by staff in nursing homes. Despite studies of sources and levels of stress among nursing home professionals, effective ways to eliminate stressors among the nursing home staff in Malaysia are still under research. The role of social support as a mediator in the relationship between time pressure, role conflict, workload, job autonomy, and job stress in a nursing home was also examined to extend the underpinning theory. This study used a cross-sectional survey to collect data from the respondents to meet the research objective. The Smart Partial Least Squares (PLS) software tests the research model's hypotheses. The probability technique using cluster random sampling was employed to gather data for this study, which included 150 nursing home staff in Malaysia. The reliability and validity metrics were first assessed for the scale development process to guarantee internal consistency. The result revealed that the reliability and validity of each item used were established for the Nursing Home Staff Stress Measurement Scale. This study has indicated that time pressure and role conflict negatively influence social support. Job autonomy positively influenced job stress, while social support negatively influenced job stress.

**Contribution/Originality:** This study revealed the importance of social support as a mediating variable in the relationship between time pressure, job autonomy, and job stress. To reduce job stress, nursing homes must strengthen their working environment by enhancing social support and job autonomy and reducing time pressure.

### 1. INTRODUCTION

Nursing homes have been established to help the elderly or ageing with long-term care or provide daycare support services. According to the [Malaysia Private Healthcare Facilities and Services Act \(1998\)](#), private nursing homes refer to “any premises, other than a government nursing home, used or intended to be used for the reception of and the provision of nursing care for persons suffering or recovering from any sickness, injury, or infirmity.” A

nursing home offers 24-hour nursing care, assisting with everyday life and mobility tasks, psychosocial, personal care, and paramedical services (Ribbe et al., 1997). While a residential home for the elderly is an institution providing living conditions adjusted to the needs of residents, it usually includes no other nursing care. In other words, a nursing home offers services that can be defined as the 'primary quality of care' whereas residential homes provide lower levels of services.

Job stress among healthcare professionals is widely acknowledged as posing severe risks to patient safety and the standard of service (Dyrbye et al., 2017). The research that has been conducted on nursing home staff suggests that job stress may contribute to higher depressive symptoms (O'Donnell, Ertel, & Berkman, 2011), emotional exhaustion and burnout among staff (Yasin, Razak, Hasbollah, Rahim, & Zaib, 2020), sleeping problems (Wallin, Jakobsson, & Edberg, 2015), and an increasing turnover rate in a nursing home (Jamaludin et al., 2019). According to (White, Aiken, & McHugh, 2019), nursing home nurses have higher levels of stress and job dissatisfaction in comparison to the registered nurses working in other settings, such as hospitals. However, additional information is necessary regarding various categories of personnel working in nursing homes.

Therefore, understanding the job stress among nursing home staff is crucial to improving the quality of health care provided by staff in nursing homes. Despite studies of sources and levels of stress among nursing home professionals, little is known about effective ways to eliminate these stressors (Baker, Huxley, Dennis, Islam, & Russell, 2015). According to Liang, Hsieh, Lin, and Chen (2014), some evidence suggests that work-related support, mainly from supervisors, may be critical in decreasing stress among nursing home staff. This study explained the role of social support as a mediator in the relationship between time pressure, role conflict, workload, and job autonomy and job stress in a nursing home.

## 2. LITERATURE REVIEW

### 2.1. Nursing Homes in Malaysia

There are two types of long-term care facilities in Malaysia under private long-term care facilities: nursing homes and residential care. According to Ribbe et al. (1997), there are no widely accepted definitions for the various long-term facilities. The definitions are, however, based on the characteristics of care services. To better understand nursing homes in Malaysia, awareness of the various types of nursing homes is essential. A non-profit or profit-making nursing home directly influences the quality of care.

The two central institutions regulating private healthcare in Malaysia are the Ministry of Health (MOH) and the local authorities, the Women, Family, and Community Development Ministry, overseen by the Social Welfare Department of Malaysia. According to the Department of Social Welfare (2018), many nursing homes have established types of nursing homes. For instance, a non-profit nursing home refers to nursing homes organized by the Department of Social Welfare, Malaysia. On the other hand, profit-oriented nursing facilities pertain to those that are operated by private organizations. It is imperative that a prominently displayed copy of the license be exhibited within the confines of the private nursing homes. However, the Director-General may vary the approval to establish a license to run private facilities by endorsement, which means regulatory control through licensing.

The government in Malaysia fully funds ten nursing homes. Organizations that are private and non-governmental run the majority of these nursing homes. The total number of private nursing homes is 330, which is quite a large number compared to public nursing homes (Department of Social Welfare, 2018). According to Kandelman, Mazars, and Levy (2018), working in private nursing homes is often associated with job stress. Therefore, the factors that contribute to the experience of stress among private nursing home nurses should be studied.

The demand for nurses is expected to rise in nursing homes, given the growing elderly population globally (Prince, Prina, & Guerchet, 2013). According to the United Nations Department of Economic and Social Affairs, Population Division (UNDESA, 2019), the highest proportion (37.0%) of the world's elderly population in 2019 was

in Eastern and South-Eastern Asia, which was projected to remain so in 2050. In 2019, it was projected that the ageing population in Malaysia would increase to 10.0% in 2030 from the total population aged 65 or more, and Malaysia would soon become an ageing nation (UNDESA, 2019). Malaysia (6.9%) is among the highest ageing populations following Singapore (12.4%), Thailand (12.4%), and Vietnam (7.6%).

Unquestionably, working in a nursing home has been connected with job stress (Backman, Sjögren, Lövheim, Lindkvist, & Edvardsson, 2021; Kandelman et al., 2018). This is mainly due to the growing importance of nursing homes due to the population's shifting age distribution (UNDESA, 2019), an increase in early hospital discharge (De Vliegher et al., 2015), and an increase in dependence on care and medical complexity (Cooper et al., 2016). Therefore, with the increasing population of older adults, the demand for nursing home staff is expected to intensify, including those working in private nursing homes.

## 2.2. Job Demand-Control-Social Support Model

Almost all industrialized nations have recognized the connection between health and working circumstances. Beyond the unfavorable effects on well-being and health, it is also known that "unhealthy" work can result in significant financial losses for an organization (Cooper & Williams, 1994). Hence, enhancing working conditions to cultivate healthy work environments is advantageous for the individuals, the firm, and the community together.

The Job Demand Control (JDC) model and its enlarged version, the Job Demand-Control-Support (JDCS) model, have been the principal models used over the past 20 years to examine the relationship between job circumstances, health, and well-being outcomes (Johnson, 1989). According to the JDC model, job demands and job control are two aspects of the work environment that determine how work affects an employee's health and well-being. The worst effects for the employee are anticipated under high-strain circumstances, i.e., when high expectations are mixed with little job control (Figure 1). The JDCS model states that social integration or support at work has a significant impact (Beehr & McGrath, 1992; Cohen & Wills, 1985; Taylor, Repetti, & Seeman, 1997). According to this concept, the iso-strain scenario is the worst possible work environment for an employee since it combines high expectations with little job management and social support.

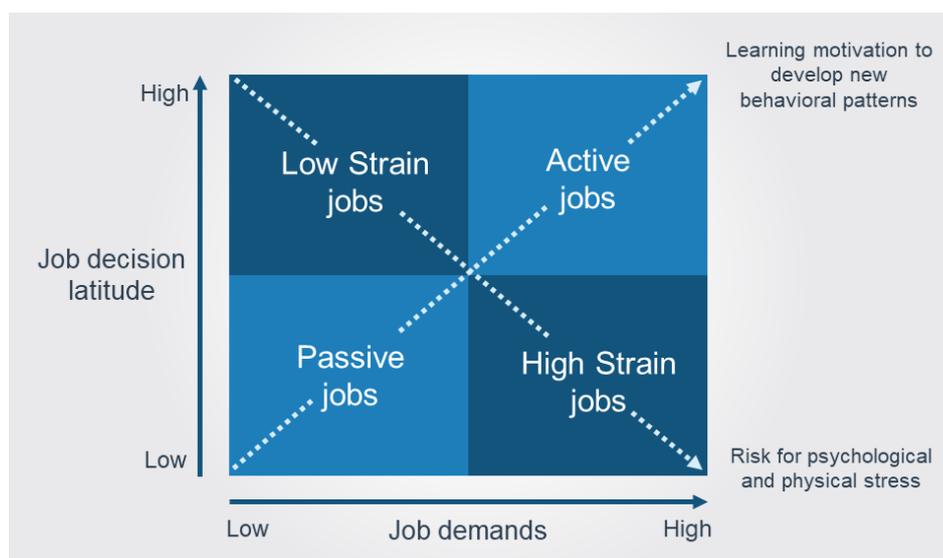


Figure 1. The job demand-control model.

Source: Karasek Jr (1979).

This JDSC model's notion of demands refers to the task requirements in the workplace (Theorell, Karasek, & Eneroth, 1990). Role conflict and time constraints are elements included in the definition of task requirements (or workload). "Control latitude" or "Decision latitude" combines two theoretically different but empirically linked concepts. Control comprises the employee's autonomy, decision-making power, and the range of abilities the

employee employs (skill discretion, skill variety, and skill requirements). According to Karasek and Theorell (1990), social support is the employee's deep personal relationships with co-workers and superiors.

The fast-paced way we live in the present era often allows familial, social, and work obligations to outweigh available time and resources. This could lead to significant physical and emotional stress, which is terrible for your health. The Job Demand-Control-Social Support (JDCS) model is one of the most studied models for assessing stressful situations. The "demand" variable in this model construct represents the psychological workload, and the "control" variable assesses the employee's ability to affect the nature and quantity of job assignments. These two factors are frequently dichotomized into high and low values and combined to create four distinct work environment categories: high strain (high demand-low control), active (high demand-high control), and passive (low demand-poor control), and low strain (low demand-high control).

Further, the combination of high strain and low social support at work has been called "iso-strain." Social support from work colleagues or managers is expected to be health-promoting, while a lack of social support has emerged as a risk. Furthermore, "iso-strain" has been used to describe the interaction between high stress levels and little social support at work. Social support from co-workers or bosses is believed to promote health, while a lack of social support has been identified as a risk factor for adverse health outcomes (Schmidt, Gummesson, Bäckhed, Bergström, & Söderberg, 2023).

### *2.3. The Relationship between Time Pressure and Social Support*

Time pressure is when someone feels they have too much work to do in the amount of time available, which causes them to feel rushed. This feeling can lead to negative health effects over time, such as fatigue and burnout, according to the Job Demands-Resources (JD-R) model. Studies have shown that employees who feel time pressure are particularly at risk of experiencing stress (Maas et al., 2021).

Social support refers to the quality of social interactions that can help improve coping with a problematic situation. There are two types of social support: perceived and received. Perceived social support refers to the subjective perception of the potential availability of assistance within an individual's social network, whereas received social support pertains to the tangible support received from specific persons within that network. Perceived social support is stable and not a good indicator for supportive interactions, while received social support is associated with mixed results, including negative effects on health and well-being. Receiving social support may also threaten one's sense of independence if it is unnecessary.

According to the JD-R model, social support is considered a job resource that can contribute to achieving work goals, reducing job demands, and stimulating personal growth. The buffering hypothesis suggests that social support is most beneficial for individuals experiencing high stress, and the JD-R model integrates this idea by stating that social support can weaken the stressful impact of job demands. Social support is associated with improved employee health and can buffer the effects of job demands. However, little is known about the influence of time pressure on social support.

Therefore, the following hypothesis is postulated:

*H: Time pressure has a negative effect on social support.*

### *2.4. Relationship between Role Conflict and Social Support*

It is interesting to note that studies have found social support to have different effects on men's and women's work and family role strain. Specifically, Elliott (2003) found that spousal supportiveness significantly reduced women's work and role strain more than it did for men. Additionally, Perrewé and Carlson (2002) found that women experienced a stronger decrease in work-family conflict when they received social support from their families compared to men. However, there were no gender differences found in the relationship between work-related support and work-family conflict. These findings suggest that social support is an important factor in

reducing work-family conflict and that the type of support and the gender of the recipient may impact the effectiveness of the support.

Considering this, the following hypothesis was constructed:

*H<sub>5</sub>: Role conflict has a negative effect on social support.*

### 2.5. Relationship between Workload and Social Support

Burnout among healthcare workers (HCWs) is a multifaceted issue that can be influenced by organizational factor such as occupation, low wages, heavy workloads, lack of support, and working hours. The COVID-19 pandemic has further exacerbated the situation by increasing HCWs' workload with inadequate resources. However, social support from colleagues and supervisors can act as a buffer against burnout, while psychological capital, which includes self-efficacy, optimism, hope, and resilience, can contribute to lower levels of burnout and better mental health outcomes. These findings suggest that interventions targeting social support and psychological capital could be effective in reducing burnout among HCWs (Bafei et al., 2023).

The demand-control model by Karasek and Theorell (1990) is a commonly used model to explore the psychosocial work environment in terms of job strain. This model proposes that staff health is threatened when there are high demands and low control and social support. Social support, which refers to supportive social interactions from colleagues and superiors, is an essential dimension in reducing the effect of job strain. There is a vast amount of evidence linking job strain to an increased risk of various health issues such as headaches, insomnia, poor concentration, irritability, and nervousness, as well as burnout. Higher levels of job strain have also been related to a lower degree of person-centered care. Leadership is also a significant factor in staff perceptions of the psychosocial work environment. Previous research has documented the importance of workload, shift work, work environment, professional conflicts, leadership styles, poor leadership, and poor management as aspects of work-related stress. The significance of leadership in reducing job strain and promoting staff well-being highlights the importance of effective leadership in healthcare organizations (Backman, Lindkvist, Lövheim, Sjögren, & Edvardsson, 2023; Sköldunger, Sandman, & Backman, 2020).

Additional research conducted by Taylor and Frechette (2022) highlights that the COVID-19 pandemic has undeniably exerted a substantial influence on the realm of higher education. Specifically, the transition to online learning has led to heightened workloads and increased demands on marketing professors. An empirical study was conducted to measure the perceived increases in workload among marketing faculty and the outcomes of that work, as well as levels of burnout. The study also proposed and tested a model of burnout antecedents. The results of the study suggest that, on average, marketing educators experienced moderate levels of burnout, which was exacerbated by work demands in research and teaching, as well as student interaction. However, research productivity had a protective effect against burnout, indicating that engaging in scholarly activities can be beneficial for mental health. Interestingly, the study found that burnout was not influenced by gender, rank, tenure status, or institution type. This suggests that burnout is a universal phenomenon that affects faculty across all demographic and institutional categories. Overall, the study highlights the importance of addressing the increased workload and demands placed on marketing educators during the pandemic. Strategies to promote research productivity and reduce the burden of teaching and student interaction may be effective in preventing burnout and promoting overall well-being among faculty.

Thus, the following hypothesis is proposed in this study:

*H<sub>6</sub>: Workload has a negative effect on social support.*

### 2.6. Relationship between Job Autonomy and Social Support

In general, the research suggested that both job autonomy and social support are important factors that contribute to employee well-being, job satisfaction, and job performance (Bjaalid, Olsen, Melberg, & Mikkelsen,

2020). High levels of job autonomy are typically associated with increased job satisfaction and better job performance, as employees have more control over their work and feel more engaged in their tasks. However, high autonomy can also lead to feelings of isolation and a lack of social support, as employees may have less interaction with colleagues and may not have a clear support system in place (Fiorilli et al., 2019).

On the other hand, social support is crucial in mitigating the negative effects of low autonomy, providing employees with a sense of connectedness and support even when they have limited control over their work. A supportive work environment has been shown to lead to increased job satisfaction and improved well-being, which can in turn lead to better job performance (Bjaalid et al., 2020). Several studies have also explored the interaction between job autonomy and social support, and have found that the combination of high autonomy and high social support is associated with the highest levels of job satisfaction and well-being (Fiorilli et al., 2019). Conversely, low levels of both autonomy and social support can lead to decreased job satisfaction and well-being.

Overall, the literature suggests that a balance between job autonomy and social support is important for employee engagement and job satisfaction. However, the relationship between these factors is complex and may vary depending on individual, situational, and cultural factors. Further research is needed to fully understand the relationship between job autonomy and social support and its implications for employee well-being and job performance.

Therefore, the current study proposes the following hypothesis:

*H<sub>1</sub>: Job autonomy has a positive effect on social support.*

### *2.7. Relationship between Social Support and Job Stress*

A literature review on the relationship between social support and job stress would examine the existing research on how social support can impact an individual's experience of job stress and its effects on their health and well-being (Wu et al., 2021). Numerous studies conducted in this field have repeatedly demonstrated that the provision of social support can effectively mitigate the experience of job-related stress. Social support has a crucial role in providing individuals with a sense of inclusion, emotional and informational provisions, and practical aid, so serving as a protective factor against the adverse impacts of stress. Additionally, social support can provide a sense of control and coping, helping individuals manage stress more effectively (Wu et al., 2021).

Studies have found that employees with high levels of social support from their co-workers or supervisors are less likely to experience job stress and burnout and are more likely to report better physical and mental health. Social support can also help mitigate job stress's impact on health outcomes, such as cardiovascular disease and depression. Wu et al. (2021) research has also explored the effects of different types of social support on job stress, such as emotional, informational, and tangible support. Results suggest that emotional support is particularly effective in reducing job stress, providing individuals with comfort, reassurance, and coping.

It is important to note that the relationship between social support and job stress is complex and may vary depending on individual, situational, and cultural factors. Furthermore, social support may not always be a protective factor, as it can sometimes lead to increased stress, particularly if the support is perceived as intrusive or lacking in quality.

In conclusion, the literature suggests that social support can significantly reduce job stress and its effects on health and well-being. Further research is needed to fully understand the relationship between social support and job stress and how it may vary depending on individual, situational, and cultural factors.

Therefore, the current study proposes the following hypothesis:

*H<sub>2</sub>: Social support has a negative effect on job stress.*

### 2.8. Mediating Relationships of Social Support

A literature review on the mediating relationships of social support would examine the existing research on how social support operates as a mediator or a mechanism through which it affects outcomes.

Research has shown that social support can act as a mediator in various relationships, including those between job stress and well-being, health behaviors and outcomes, and psychological distress and coping. Social support can serve as a mediator by providing individuals with the resources and coping strategies needed to manage stress, improve health behaviors, and reduce psychological distress (Wu et al., 2021).

For example, studies have found that social support can mediate the relationship between job stress and well-being by providing individuals with the emotional and informational support needed to manage stress, leading to improved well-being. Chen et al. (2020) similarly found that social support can mediate the relationship between health behaviors and outcomes, such as physical activity, by providing individuals with the motivation, information, and support needed to engage in healthy behaviors.

Additionally, research has explored the role of different types of social support, such as emotional, informational, and tangible support, in mediating relationships. Results suggest that different types of social support may have different effects, with emotional support often serving as the most effective mediator in reducing stress and promoting well-being (Chen et al., 2020).

It is important to note that the mediating effect of social support may vary depending on individual, situational, and cultural factors. Furthermore, the quality of social support can also mediate relationships, with high-quality support being more effective than low-quality support. In conclusion, existing data indicates that social support plays a significant role as a mediator in many linkages, encompassing the connections between job-related stress and overall well-being, health-related behaviors and outcomes, and psychological discomfort and copying mechanism. Further research is needed to fully understand the mediating effect of social support and how it may vary depending on individual, situational, and cultural factors.

Thus, the following hypotheses were constructed:

A literature review on the mediating role of social support in the relationship between time pressure and job stress would examine the existing research on how social support operates as a mechanism to reduce the negative effects of time pressure on job stress.

Time pressure, or the perceived lack of time to complete tasks, is a common source of stress in the workplace. Research has shown that high levels of time pressure can lead to increased job stress, decreased well-being, and poor health outcomes. However, research has also found that social support can play a mediating role in the relationship between time pressure and job stress. Social support can provide individuals with the emotional and informational resources needed to manage stress and cope with time pressure, leading to improved well-being and reduced job stress.

Studies have found that employees with high levels of social support from co-workers and/or supervisors are less likely to experience job stress in response to time pressure and are more likely to report better physical and mental health. Furthermore, research has shown that emotional support, in particular it will be effective in reducing job stress associated with time pressure by providing individuals with a sense of comfort and reassurance.

It is important to note that the mediating effect of social support may vary depending on individual, situational, and cultural factors. Furthermore, the quality of social support can also play a role in mediating relationships, with high-quality support being more effective than low-quality support (Wu et al., 2021). In conclusion, the literature suggests that social support can mediate the relationship between time pressure and job stress, providing individuals with the resources to manage stress and cope with time pressure. Further research is needed to fully understand the mediating effect of social support and how it may vary depending on individual, situational, and cultural factors.

*H<sub>0</sub>: Social support mediates the relationship between time pressure and job stress.*

A literature review on the mediating role of social support in the relationship between role conflict and job stress would examine the existing research on how social support operates to reduce the negative effects of role conflict on job stress. Ersoy, Mahmood, Sharif, Ersoy, and Ehtiyar (2023) argue that role conflict, or the conflicting demands and expectations associated with different roles, is a common source of stress in the workplace. Research has shown that high levels of role conflict can lead to increased job stress, decreased well-being, and poor health outcomes.

However, research has also found that social support can mediate the relationship between role conflict and job stress. Social support can provide individuals with the emotional and informational resources needed to manage stress and cope with role conflict, improving well-being and reducing job stress. Studies have found that employees with high levels of social support from co-workers and/or supervisors are less likely to experience job stress in response to role conflict and are more likely to report better physical and mental health (Yousaf, Rasheed, Hameed, & Luqman, 2020).

Furthermore, research has shown that emotional support can be effective in reducing job stress associated with role conflict by providing individuals with a sense of comfort and reassurance. It is important to note that the mediating effect of social support may vary depending on individual, situational, and cultural factors. Furthermore, the quality of social support can also mediate relationships, with high-quality support being more effective than low-quality support.

In conclusion, the literature suggests that social support can mediate the relationship between role conflict and job stress, providing individuals with the resources to manage stress and cope with role conflict. Further research is needed to fully understand the mediating effect of social support and how it may vary depending on individual, situational, and cultural factors.

*H<sub>1</sub>: Social support mediates the relationship between role conflict and job stress.*

A literature review on the mediating role of social support in the relationship between workload and job stress would examine the existing research on how social support operates to reduce the adverse effects of a high workload on job stress. Workload, or the amount of work an individual is required to complete, is a common source of stress in the workplace. Research has shown that high workload levels can lead to increased job stress, decreased well-being, and poor health outcomes. Social support can provide individuals with the emotional and informational resources needed to manage stress and cope with high workloads, improving well-being and reducing job stress.

Studies have found that employees with high levels of social support from co-workers and/or supervisors are less likely to experience job stress in response to high workloads and are more likely to report better physical and mental health. Furthermore, research has shown that emotional support can effectively reduce job stress associated with a high workload by providing individuals with comfort and reassurance (Yousaf et al., 2020).

It is imperative to acknowledge that the influence of social support as a mediator might differ based on individual, environmental, and cultural variables. Moreover, it is worth noting that the presence of social support can serve as a mediator in interpersonal connections, wherein the effectiveness of such connections is contingent upon the quality of support provided. In this regard, it is seen that high-quality support tends to yield more favorable outcomes compared to the low-quality support.

In conclusion, the literature suggests that social support can mediate the relationship between workload and job stress, providing individuals with the resources to manage stress and cope with high workloads. Further research is needed to fully understand the mediating effect of social support and how it may vary depending on individual, situational, and cultural factors.

*H<sub>2</sub>: Social support mediates the relationship between workload and job stress.*

A literature review on the mediating role of social support in the relationship between job autonomy and job stress would examine the existing research on how social support operates to reduce the adverse effects of low job autonomy on job stress.

Job autonomy, or the degree to which an individual controls the tasks and decisions associated with their job, is a crucial aspect of job design. Research has shown that low levels of job autonomy can lead to increased job stress, decreased well-being, and poor health outcomes. However, research has also found that social support can mediate the relationship between job autonomy and job stress (Wu et al., 2021). Social support can provide individuals with the emotional and informational resources needed to manage stress and cope with low job autonomy, improving well-being and reducing job stress.

Studies have found that employees with high levels of social support from co-workers and/or supervisors are less likely to experience job stress in response to low job autonomy and are more likely to report better physical and mental health. Furthermore, research has shown that emotional support can be effective in reducing job stress associated with low job autonomy by providing individuals with a sense of comfort and reassurance (Ersoy et al., 2023).

It is important to note that the mediating effect of social support may vary depending on individual, situational, and cultural factors. Furthermore, the quality of social support can also mediate relationships, with high-quality support being more effective than low-quality support. In conclusion, the literature suggests that social support can mediate the relationship between job autonomy and job stress, providing individuals with the resources needed to manage stress and cope with low job autonomy. Further research is needed to fully understand the mediating effect of social support and how it may vary depending on individual, situational, and cultural factors.

*H<sub>3</sub>: Social support mediates the relationship between job autonomy and job stress.*

### 2.9. Conceptual Framework

Figure 1 presents the proposed relationships among the variables by adopting the Job Demand-Control-Social Support Model. The independent variables (time pressure, role conflict, workload, and job autonomy) have been identified as the antecedents of social support towards job stress. Consequently, the study also measured the mediating effect of social support in the relationship between the independent and dependent variables.

## 3. METHODOLOGY

### 3.1. Research Instrument

The present study used a quantitative method for data collection purposes. The research instrument consisted of three parts. The first part of the questionnaire requested the respondents' personal information. The second part involved the factors that influence job stress, and the third part presented the case scenario and the related questions on job stress. All the items were adopted from successful previous studies and adapted to suit the context of the present study. Pre-testing was conducted to assess the content validity of the questionnaire before the actual data were collected for this study. To ensure that the questionnaire is not biased and can be understood by the respondents, three expert panels were chosen for pre-testing. The panels consisted of one expert from the nursing home industry and two senior lecturers from local universities with experience in nursing homes. The instrument was refined based on the comments received during the pre-testing process. Next, 50 questionnaires were also used to test the questionnaire. Modifications were implemented to the sequence of inquiries and the vocabulary employed, taking into account the feedback obtained from the 50 responses received. When the instrument was assessed for reliability, Cronbach's alpha was determined to be satisfactory (better than 0.70 for all constructs included in this study).

### 3.2. Research Design

This study used a survey to collect data from the respondents to meet the research objectives. Through a survey, substantial data can be collected quickly, and the survey also helps decrease errors during the process (Hair, Thomas, Hult, Ringle, & Sarstedt, 2017).

### 3.3. Sample and Procedures

Owing to the sampling frame's unavailability, the probability technique using cluster random sampling was employed to gather data for this study. Since the study uses Smart Partial Least Squares (Ringle, Wende, & Becker, 2015) as a tool for data analysis, according to Hair et al. (2017), the sample size should be determined by the power of analysis, with the minimal number of samples determined by the model's complexity. Based on the Green (1991) table, this study required a minimum sample size of 85 for the four predictors, with a medium effect size of 0.15 at a 0.05 confidence level. Thus, the sample size of 150 is considered appropriate for this study because it far exceeds the minimum sample size requirement.

### 3.4. Data Analysis

The Smart Partial Least Squares (PLS) software is recommended for testing the research model's hypotheses (Hair, Risher, Sarstedt, & Ringle, 2019). Smart PLS is variance-based structural equation modeling (SEM) software that takes a two-step approach to data analysis. The initial step is the measuring model, which includes convergent and discriminant validity. The structural model is the next step involved in the data analysis part.

Before progressing to the analysis in Smart PLS, Hair et al. (2017) strongly recommend conducting a normality test to ensure the data is not normally distributed. Multivariate skewness and kurtosis were assessed in this study as per Hair et al. (2017) and Cain, Zhang, and Yuan (2017) recommendations. Based on the results, the data had no multivariate normal distribution with Mardia's multivariate skewness ( $\beta = 18.775$ ,  $p < 0.01$ ) and kurtosis ( $\beta = 54.443$ ,  $p < 0.01$ ). Thus, it fits Smart PLS requirements as a non-parametric tool for data analysis.

Because this study used a single source for data collection, the dependent and independent variables were gathered from the same individual simultaneously, and the issue of standard method variance (SMV) may arise (Mackenzie, Podsakoff, & Podsakoff, 2011). To solve this issue, Podsakoff, MacKenzie, Lee, and Podsakoff (2003) developed procedural and statistical strategies to overcome this issue. The following procedural remedies were used in this study: First, the instructions to the respondents were carefully stated on the questionnaire's cover page, along with assurances that their personal information and responses would be kept confidential and anonymous. The cover page further states that answering the questionnaire is entirely voluntary and that there are no correct or incorrect responses. Second, as Mackenzie et al. (2011) recommend, distinct scale endpoints were employed for predictor and criterion measurements. Therefore, all independent variables were measured on a five-point Likert scale, while dependent variable variables were measured on a seven-point Likert scale for this study.

The Harman single-factor test was used to examine the amount of bias in the statistical procedure. Because a single latent component bears most of the explained variation, Fuller, Simmering, Atinc, Atinc, and Babin (2016) claimed that SMV is problematic if the first factor findings explain more than 50% of the overall variance (Podsakoff et al., 2003). The unrotated factor analysis for the first factor of this study accounted for 25.57 percent. Hence, SMV was not an issue for this study.

## 4. FINDINGS AND ANALYSIS

### 4.1. Respondent's Profile

The respondents' demographic background, comprising 150 nursing home staff in Malaysia, is shown in Table 1. The majority of the respondents are female (64.8%), single (85.3%), Malay (96.7%), working less than 3 years at nursing homes (70.6%), having a monthly salary of MYR1001-MYR2000 (93.3%), being SPM holders (35.3%), and working in medical attendance (58%).

### 4.2. Measurement Model Analysis

Anderson and Gerbing (1988) suggestion of a 2-step approach was employed to test the research model, as illustrated in Figure 2. The measurement model was first tested in terms of the reliability and validity of the

instruments based on the rule of thumb outlined by Hair et al. (2019) and Ramayah, Cheah, Chuah, Ting, and Memon (2018). Next, a structural model was developed to test the hypotheses.

The measurement model checks the loadings, which should have values of at least 0.5, the average variance extracted (AVE), which should also have values of at least 0.5, and finally the composite reliability (CR), which should have values at least 0.7, which should be  $\geq 0.5$ , and composite reliability (CR), which should be  $\geq 0.7$ . Based on Table 2, the AVE and CR values were more significant than 0.5 and 0.7, respectively. Subsequently, discriminant validity was assessed based on the Heterotrait-Monotrait (HTMT) criterion proposed and updated by Henseler, Ringle, and Sarstedt (2015) and Franke and Sarstedt (2019). An HTMT value of  $\leq 0.85$  denotes a stricter criterion, whereas a lenient criterion is denoted by  $\leq 0.90$ . Table 3 shows that all of the HTMT values were lower than  $\leq 0.85$ ; hence, it can be deduced that the respondents' five constructs are easy to understand, and the measurement items are valid and reliable.

Table 1. Demographic profile.

Characteristics	Frequency	(%)
Gender		
Male	59	35.2
Female	91	64.8
Marital status		
Single	128	85.3
Married	22	14.7
Race		
Malay	145	96.7
Chinese	0	0
Indian	5	3.3
Others	0	0
Working duration		
Less than 3 years	106	70.6
3-6 years	43	28.7
7-9 years	1	0.7
More than 9 years	0	0
Monthly salary		
Less than MYR1000	9	6
MYR1001-MYR2000	140	93.3
MYR2001-MYR3000	0	0
MYR3001-MYR4000	1	0.7
MYR4001-MYR5000	0	0
MYR5001 above	0	0
Educational level		
PMR	3	2
SPM	53	35.3
Diploma	52	34.7
Degree	42	28
Master/PhD	0	0
Job position		
Nurse	4	2.7
Medical attendance	87	58
Others	59	39.3
Total	150	100

Note: Malaysian Ringgit (MYR); The *Sijil Pelajaran Malaysia* (SPM), or the Malaysian Certificate of Education, is a national examination sat for by all fifth-form secondary school students in Malaysia; *Penilaian Menengah Rendah* (PMR) is an examination designed to measure students' academic achievement at lower secondary school level.

Table 2. Convergent and discriminant validity for stress measurement scale.

Constructs	Items	Loadings	AVE	CR	
Job stress	JS1	I have conflicts with residents or family because of the rules in the nursing home.	0.873	0.624	0.918
	JS2	An unfair evaluation of job performance makes me uncomfortable.	0.733		
	JS4	Strict requirements of the nursing home make me feel nervous.	0.841		
	JS5	An insufficient workforce in nursing homes makes me feel exhausted.	0.564		
	JS6	There is always too much work, and it never finishes.	0.598		
	JS8	I have trouble dealing with the resident's bad temper.	0.940		
	JS9	I am nervous when taking care of a severely ill resident.	0.896		
Time pressure	TP1	I feel uncomfortable with an unreasonable schedule.	0.783	0.566	0.866
	TP2	The division of work is not clear, which makes me feel uneasy.	0.780		
	TP3	I have trouble with time arrangements with family.	0.657		
	TP4	I usually need to work overtime.	0.715		
	TP5	I feel bored with repetitive tasks.	0.816		
Role conflict	RC1	I have to do things differently.	0.897	0.690	0.816
	RC2	I receive conflicting order from a few people.	0.759		
Workload	W2	Due to the high volume of work, I have to neglect some of the task.	0.818	0.789	0.918
	W3	I do not have enough time to rest.	0.905		
	W4	I receive an assignment without the manpower to complete it.	0.937		
Job autonomy	JA1	This job allows me to make my own decisions about how to schedule my work.	0.859	0.635	0.895
	JA2	The job allows me to plan my work.	0.847		
	JA3	This job gives me a chance to use my personal initiative in carrying out the duty.	0.726		
	JA4	This job allows me to make a lot of decisions on my own.	0.607		
	JA5	This job provides me with significant autonomy in making decisions.	0.908		
Social support	SS1	I feel that my supervisor gives me adequate support.	0.739	0.516	0.893
	SS2	I feel that my supervisor treats me fairly.	0.799		
	SS3	My supervisor tells me when my work needs to be improved.	0.801		
	SS4	My supervisor informs me whether he or she is satisfied with my work.	0.605		
	SS5	My supervisor asks me for opinion to help make decisions.	0.587		
	SS6	If difficulties arise, I can count on my colleagues to support me.	0.745		
	SS7	If necessary, I ask my colleagues for help.	0.831		
	SS8	I feel important to my colleagues.	0.587		

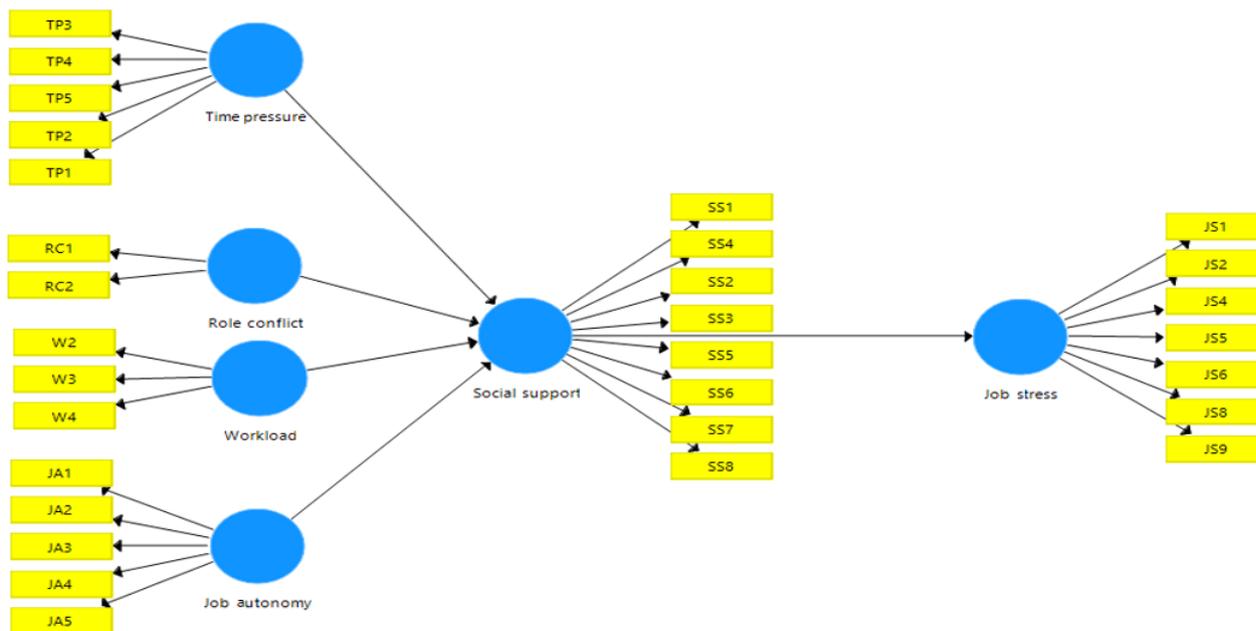


Figure 2. Research model.

Table 3. Discriminant validity (HTMT).

Constructs	1	2	3	4	5	6
Job autonomy	-					
Job stress	0.291	-				
Role conflict	0.162	0.684	-			
Social support	0.681	0.533	0.302	-		
Time pressure	0.351	0.611	0.739	0.460	-	
Workload	0.234	0.585	0.742	0.361	0.798	-

4.3. Structural Model Analysis

Before conducting the structural model, the authors must ensure that collinearity is not a problem. As demonstrated in Table 4, the Variance Inflated Factor (VIF) for each study construct is less than 3.3, as Diamantopoulos and Siguaw (2006) recommended. This demonstrates that collinearity was not a significant concern in this study. As a result, the study moves on to hypothesis testing, also known as path coefficient analysis.

The structural model was then evaluated to determine the accuracy of the research model's estimations and the significance of the hypothesized variables' relationships. According to Hair et al. (2019) suggestion, the path coefficients, standard errors, t-values, and p-values of the structural model were tested through a bootstrapping procedure with 5,000 samples (Mansor, Ariff, Hashim, & Ngah, 2021). However, Hahn and Ang (2017) argued that p-values alone are insufficient for hypothesis testing; thus, a combination of criteria such as p-values with confidence intervals and effect sizes was suggested. Table 4 summarises the criteria used to test the developed research hypotheses.

The R<sup>2</sup> value for testing the effects of the four predictors on social support was 0.614, and as a result, all of the predictors account for 61.4% of the variance in social support. Time pressure ( $\beta = -0.528, p < 0.001$ ) and role conflict ( $\beta = -0.017, p < 0.05$ ) also have a negative relationship with social support, thus supporting H1 and H2. In contrast, job autonomy ( $\beta = 0.641, p < 0.001$ ) has a positive relationship with social support, thus supporting H4. However, the relationship between workload ( $\beta = -0.006, p = 0.466$ ) was not supported. Thus, H3 was rejected. Next, the effect of social support ( $\beta = -0.531, p < 0.001$ ) on job stress resulted in an R<sup>2</sup> of 0.091 ( $Q^2 = 0.282$ ); thus, 28.2% of the variance in social support is explained by job stress, and H5 was supported.

Table 4. Hypothesis testing direct effects.

Hypothesis	Relationship	Std beta	Std error	T-values	P-values	Biased corrected interval lower limit (BCI LL)	Biased corrected interval upper limit (BCI UL)	f <sup>2</sup>	VIF	Decision
H1	Time pressure → Social support	-0.528	0.085	6.193	0.000	-0.623	-0.344	0.370	1.947	Supported
H2	Role conflict → Social support	-0.170	0.090	1.894	0.029	-0.232	-0.054	0.052	1.437	Supported
H3	Workload → Social support	-0.006	0.071	0.087	0.466	-0.117	0.129	0.000	2.057	Not supported
H4	Job autonomy → Social support	0.641	0.033	19.215	0.000	0.582	0.688	1.062	1.001	Supported
H5	Social support → Job stress	-0.531	0.061	8.749	0.000	-0.620	-0.425	0.393	1.000	Supported

Note: We use 95% confidence interval with a bootstrapping of 5,000.

Table 5. Hypothesis testing indirect effects.

Hypothesis	Relationship	Std beta	Std error	T-values	P-values	Biased corrected interval lower limit (BCI LL)	Biased corrected interval upper limit (BCI UL)	Decision
H6	Time pressure → Social support → Job stress	-0.518	0.081	5.121	0.000	-0.621	-0.310	Supported
H7	Role conflict → Social support → Job stress	-0.090	0.048	1.868	0.062	-0.144	0.045	Not supported
H8	Workload → Social support → Job stress	-0.003	0.036	0.092	0.927	-0.071	0.071	Not supported
H9	Job autonomy → Social support → Job stress	0.641	0.033	19.215	0.000	0.582	0.688	Supported

Note: We use 95% confidence interval with a bootstrapping of 5,000.

Preacher and Hayes (2008) recommendation of bootstrapping the indirect effect was used in this study to test the mediation hypotheses, where a significant mediation is concluded if the confidence interval does not cross zero. As shown in Table 5, the indirect hypothesis of time pressure → social support → job stress ( $\beta = -0.518, p < 0.001$ ) and Job autonomy → social support → job stress ( $\beta = 0.641, p < 0.05$ ) both are supported thus, H6 and H9 were accepted. In contrast, role conflict → social support → job stress ( $\beta = -0.090$ ) and workload → social support → job stress ( $\beta = -0.003$ ) were not supported. In addition, the 95% confidence intervals bias-corrected show intervals extending over 0 confirmed our results, and, thus, H7 and H8 were rejected.

Further, as suggested by Shmueli et al. (2019) proposed PLS-predict, a holdout sample-based procedure was conducted that produces case-level predictions on an item or a construct via PLS-Predict with a tenfold process that assesses predictive relevance. Lower item differences (PLS-LM) indicate a strong predictive power, while predictive relevance is not confirmed if the differences are higher. However, there is moderate predictive power with a lower majority but low predictive power with the minority (Ngah et al., 2021; Shmueli et al., 2019). Table 6 shows lower errors in the PLS model than the LM model; thus, the study concludes a strong predictive power of the research model.

Table 6. PLS-predict.

Item	PLS RMSE	LM Root mean squared error (RMSE)	PLS-LM	Q <sup>2</sup> _predict
JS2	1.043	1.268	-0.225	0.114
JS4	1.062	1.434	-0.372	0.192
JS5	1.071	1.386	-0.316	0.032
JS6	0.961	1.294	-0.333	0.054
JS8	1.039	1.229	-0.190	0.212
JS9	1.294	1.555	-0.261	0.179
JS1	1.164	1.452	-0.288	0.140
SS1	0.659	0.749	-0.090	0.259
SS2	0.488	0.607	-0.119	0.296
SS3	0.477	0.593	-0.116	0.274
SS5	0.498	0.748	-0.251	0.130
SS6	0.420	0.505	-0.085	0.288
SS7	0.381	0.434	-0.053	0.422
SS8	0.460	0.539	-0.080	0.140
SS4	0.395	0.559	-0.164	0.410

## 5. DISCUSSIONS

### 5.1. Relationship between Time Pressure, Role Conflict, Workload, Job Autonomy and Social Support

Time pressure had a negative relationship with social support (H1). The results are in line with the research by Maas et al. (2021). It also investigated whether social support from the school principal mitigates this relationship. It has been found that time pressure will have a negative effect on social support. Employees who experience time pressure will reduce social support because they need more time to get social support from supervisors or co-workers.

Role conflict had a negative relationship with social support (H2). This finding is consistent with Kossek, Pichler, Bodner, and Hammer (2011). The study found that informal social support, such as emotional and instrumental support from family members or co-workers can help reduce work-family conflict for business professionals. The authors argue that this support can act as a buffer against the negative effects of work-family conflict and can help individuals better manage the demands of their work and personal lives. Overall, this research suggests that having a supportive social network both at home and at work can help reduce work-family conflict and improve the overall well-being of employees.

Hosseini, Yarelahi, Rahimi, and Salmani (2023) discuss the significance of support from a spouse in preventing work-life conflicts for women. This support can be in the form of emotional or instrumental assistance, such as showing concern and attentiveness towards the spouse's problems or helping with daily family tasks. Research studies have indicated that women who have a positive marital relationship with their husbands and receive support from them experience fewer work-life conflicts.

Previous study suggests that studying a particular day or event can aid in better recollection and differentiation of the types of support used to alleviate work-family conflict. This approach can also allow for the investigation of whether the effectiveness of support varies based on the type of conflict experienced. Emotional support may reduce strain-based conflict, while instrumental support may reduce time-based conflict. However, due to a lack of studies, the author encourages future research to include different types of conflict and employ experience sampling to understand how emotional and instrumental support can mitigate work-family conflict (French, Dumani, Allen, & Shockley, 2018).

The workload had a negative and significant relationship with social support (H3). This finding is in line with studies by Luchman and González-Morales (2013) and Viswesvaran, Sanchez, and Fisher (1999), which found that a supportive work environment should give employees emotional and practical resources to help them handle a heavy workload. Bowling, Alarcon, Bragg, and Hartman (2015) meta-analysis of 336 independent samples found that coworker support was negatively and significantly related to workload. This is because support can help foster positive feelings among colleagues by reminding them that they are not alone in facing job demands and providing an outlet for expressing their emotions. Such support can be an adaptive emotion regulation strategy, allowing recipients to reframe adverse events, receive encouragement, and focus on positive emotions. Additionally, the workers who feel their coworker's support can use their resources when needed, particularly in high-demand circumstances.

Other research reported moderate-to-high levels of perceived social support across all dimensions (family, friends, and others) among healthcare workers in Jordan during the COVID-19 pandemic. The findings also indicate that healthcare workers gain social support while providing patient care (Alnazly, Khraisat, Al-Bashaireh, & Bryant, 2021). Then, Ebrahimi, Jafarjalal, Lotfolahzadeh, and Kharghani Moghadam (2021) found a high level of perceived social support among medical staff during the COVID-19 pandemic (long working hours). Nurses working in COVID-19 patient-related wards during the pandemic had to stay away from their families and friends for extended periods and be in quarantine to prevent the spread of the disease. Despite this, most nurses reported that their families understood their situation and encouraged them to continue their work, maintaining communication through virtual means to provide inspiration and support. As a result, the family dimension score was higher than the other dimensions.

Another study highlighted that support from family members and friends, aside from a spouse, demonstrates their dedication to aiding one another by assisting with household tasks, caring for dependents, and completing other duties. When family members assist working women in fulfilling their domestic and childcare responsibilities, it can reduce the burden on the working mother, thus decreasing the workload pressure (Hosseini et al., 2023).

The effects of job autonomy and social support on nurses' insights into job stress in health care organizations and the mediated roles of social support from colleagues and superiors are the focus of this study, which is pertinent to the Malaysian context. The findings support some of the hypotheses that were put forth in this study regarding the outcomes and effects of mediating roles.

Regarding the direct effects of job autonomy and social support on perceived health organization (H4), it has been demonstrated that job autonomy is the factor that best explains the decline in nurse health. This is consistent with previous research that has confirmed this relationship with other indicators of health loss, such as burnout. Social support reduced the negative effects of job stress in individuals with high levels of job autonomy, as the research also found that colleagues and managers moderated the relationship between job autonomy and stress.

Bjaalid et al. (2020) research examined the link between job autonomy and social support among employees in a Norwegian public sector organization. The study discovered that job autonomy was favorably related to psychological well-being and that this relationship was mediated in part by work drive and job happiness. The research also found that social support from colleagues and managers moderates the connection between job autonomy and work motivation.

This means that social support boosted the beneficial impacts of job autonomy on work motivation. Fiorilli et al. (2019) examined the connection between employment autonomy, social support, and work-family conflict among US workers. The research discovered that job autonomy and supervisory social support were adversely linked with work-family conflict and that social support partially mediated the connection between job autonomy and work-family conflict.

Overall, research suggests that job autonomy and social support are important factors for promoting well-being in the workplace. Social support can mediate the relationship between job autonomy and other outcomes such as job stress, work motivation, and work-family conflict. Either separate sources of social support have yet to be examined in the same study as job resources or supervisory support has been the sole focus (McGilton, Hall, Wodchis, & Petroz, 2007; McGilton et al., 2003; Schaufeli & Buunk, 2003). The present study looked at four different kinds of social support.

Based on previous studies on job satisfaction (such as McGilton et al. (2007)), all four sources evaluated in the study, a supervisor, a coworker, a spouse or significant other, and a friend or family member, provided equal support to participants. Emotional exhaustion was predicted to be lower if supervisors, friends, or family members provided more support. 2002, by Eisenberger, Stinglhamber, Vandenberghe, Sucharski, and Rhoades (2002) and van Dierendonck, Schaufeli, and Buunk (1998). Again, the need to look beyond the walls of the long-term care facility for contributions to stress, burnout, and their reduction or prevention is emphasized by the unique finding regarding the significance of support from friends and family members in the literature on burnout among long-term care nursing staff.

### *5.2. Relationship between Social Support and Job Stress*

According to Wu et al. (2021), who investigated the connection between social support and job stress among healthcare workers during the COVID-19 pandemic, there is a significant relationship between social support and job stress (H5). Workplace burnout and stress were negatively associated with social support from superiors and co-workers. Moreover, the investigation discovered that social help played an intervening role in the connection between business-related stressors (such as responsibility and time tension) and occupation stress. The impact of social support on the relationship between job demands and burnout among Dutch employees was the subject of another 2020 study.

Burnout was negatively correlated with social support from supervisors and co-workers. According to the study, this correlation was strongest among people with high job demands. During the COVID-19 pandemic, the relationship between social support and job stress among Chinese employees. Social support from co-workers and supervisors was found to have a negative effect on job stress and burnout. This effect was more substantial for people who perceived more job insecurity. In general, late exploration proposes that social help is significant for moderating the adverse consequences of occupation stress, especially during elevated pressures like the corona virus pandemic. Social support can take many forms, including emotional support, instrumental support, and informational support, and it can come from co-workers, supervisors, or other sources.

### *5.3. Mediating Relationship of Social Support*

The result for (H6) demonstrates that the role of social support as a mediator between various job-related factors and employee well-being is significant. The relationship between job insecurity and psychological distress

among employees in Australia during the COVID-19 pandemic was investigated by Chen et al. (2020). Social support buffered the negative effects of job insecurity on well-being, as the study found that social support from co-workers and supervisors partially mediated the relationship between psychological distress and job insecurity H6. Social support mediates the Dutch workforce's relationship between job demands and burnout. Chen et al. (2020) investigated the mediating role of social support in the relationship between job autonomy and job stress among employees in the United States. They found that social support from co-workers and supervisors partially mediated the relationship between job demands and burnout, indicating that social support helped to mitigate the adverse effects of high job demands on well-being.

The study found that supervisors' social support partially mediated job autonomy and workplace stress. This suggests that people with much autonomy experienced less stress at work because of social support. Social support can act as a mediator between employee well-being and a variety of job-related factors. Employee well-being and the adverse effects of job stress, demands, and job insecurity can be mitigated with the help of social support. Social support can come from co-workers, supervisors, or other sources, including emotional, instrumental, and informational support.

## 6. CONCLUSION

In summary, this study indicated that job demands and resources are related to job stress. The framework consists of job demands: time pressure, role conflict, and workload, and job resources consist of social support and job autonomy. These findings provide some direction for developing effective and targeted strategies to reduce stress in nursing home staff members in order to enhance the standard of care they deliver.

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**Institutional Review Board Statement:** The Ethical Committee of the Universiti Malaysia Kelantan, Malaysia has granted approval for this study.

**Transparency:** The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

**Competing Interests:** The authors declare that they have no competing interests.

**Authors' Contributions:** All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

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