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Workload, Work-Life Balance and Job Satisfaction Among Medical Officers in Public Hospitals in The Klang Valley: A Proposed Conceptual Framework

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Abstract: Job satisfaction is a key factor in retaining the medical workforce, especially in public hospitals where medical officers often face demanding clinical duties and organizational pressures. This concept paper proposes a framework to examine the relationship between workload, work-life balance, and job satisfaction among medical officers in public hospitals in the Klang Valley, Malaysia. The framework is guided by the Job Demands–Resources theory. Workload is viewed as a job demand requiring constant physical and psychological effort, and work-life balance is the extent to which medical officers can manage work responsibilities alongside recovery and personal life. The proposed study will employ a quantitative cross-sectional correlational design. Proportionate stratified random sampling will be used to select the medical officers from the participating hospitals. Data on workload, work-life balance, and job satisfaction, together with relevant demographic and occupational information, will be collected using validated instruments. Descriptive statistics will be used to describe the respondents and study variables, and correlation and multiple linear regressions analysis will be used to examine the relationship among the variables. The proposed framework is expected to provide evidence that is more specific to the working conditions of medical officers in public hospitals in the Klang Valley. Future studies may also test the framework in other regions and hospital settings in Malaysia.

Keywords: *Job Satisfaction, Workload, Work-Life Balance, Medical Officers, Public Hospitals*

1. Introduction and Background

Job satisfaction is a central workforce outcome because it captures how employees evaluate their work and employment conditions rather than only whether they are psychologically exhausted. Contemporary research treats job satisfaction as an overall evaluative judgement with both cognitive and affective components (Williams et al., 2024). This distinction is important in medicine. Burnout concerns exhaustion and strain arising from prolonged occupational stress, whereas job satisfaction concerns whether the job, taken as a whole, is evaluated favorably. A medical officer may therefore report strain while remaining satisfied with important aspects of the job, or may report low satisfaction without meeting criteria for burnout. Conflating these constructs obscures the organizational conditions that shape whether doctors regard public-sector employment as sustainable.

Job satisfaction is also relevant because it is connected to workforce retention. A 2025 systematic review and meta-analysis covering 34 studies and 97,672 doctors estimated a pooled turnover-intention prevalence of 39% and identified lower job satisfaction as a significant factor associated with intention to leave (Wang et al., 2025). This global evidence does not establish the magnitude of the relationship in Malaysia, but it provides a strong reason to treat job satisfaction as more than a desirable employee attitude. In a health system that depends on retaining trained doctors, unfavorable evaluations of work can become an organizational risk when they contribute to withdrawal intentions and loss of experienced personnel.

Malaysian evidence points to similar pressures, although the available studies are fragmented across settings and outcomes. In a Malaysian study of primary care physicians, Ab Rahman et al. (2019) found that public-sector doctors reported lower overall job-satisfaction scores than private-sector doctors. Administrative overload was reported by 59.7% of public doctors compared with 36.0% of private doctors, while 62.9% of public doctors reported a good effort-reward balance compared with 85.8% in private practice. These findings demonstrate that organizational and work-related conditions are relevant to physician satisfaction in Malaysia. They do not, however, answer the present question because the participants were primary care physicians

rather than medical officers working in public hospitals.
The Klang Valley is an important setting in which to examine this question because public hospitals within the states and federal territories encompassing the region operate within a substantial volume of healthcare service activity. Ministry of Health Malaysia data for 2024 recorded 3,130,531 outpatient attendances at MOH hospitals in Selangor and 755,337 in W.P. Kuala Lumpur (Ministry of Health Malaysia, 2025). These figures represent state and federal-territory totals and should not be interpreted as direct measures of service volume within the study sample. However, they provide an overview of public hospital activity in the wider Klang Valley context.

More direct evidence of workforce instability has emerged in the same geographical setting. Mohamad et al. (2025) surveyed 380 permanently employed doctors across ten public hospitals in the Klang Valley and found that 58.16% of them met the study's threshold for intention to leave public service. Distributive justice and temporal justice were both negatively related to turnover intention. This study did not test for job satisfaction and included doctors rather than isolating medical officers as a single occupational group. Thus, its relevance is contextual rather than evident for the proposed relationships. However, it shows that retention issues are of concern to public hospitals in Klang Valley and that management of time and work demands is related to doctors' employment intentions.

Other Malaysian studies have confirmed the need to differentiate occupational strain from job satisfaction. In a study of doctors from seven tertiary public hospitals in Malaysia, Mohd Fauzi et al. (2020) found high mean scores for acute and chronic fatigue, but relatively lower intershift recovery scores. Work-related rumination during non-work time was commonly reported and significantly associated with several fatigue and recovery outcomes. Although job satisfaction was not examined directly in this study, the findings suggest that occupational demands may carry over and interfere with recovery among doctors working in Malaysian public hospitals. Later, Roslan et al. (2021) reported high levels of personal and work-related burnout among a heterogeneous sample of Malaysian healthcare workers in the COVID-19 period, with workload and work-family difficulties appearing in participants' accounts of strain. These studies show that demands and recovery are locally relevant, but neither directly establishes how medical officers evaluate their jobs.

Recent medical-officer evidence makes the remaining gap more visible. Muhammad et al. (2025) interviewed 18 medical officers in a Malaysian university hospital and identified satisfaction and dissatisfaction around patient care, family time, educational responsibilities, teamwork, hospital systems, salary, and career advancement. The study is valuable because it focuses specifically on medical officers. However, its qualitative design and university-hospital setting do not determine whether workload and work-life balance are independently associated with job satisfaction among medical officers in the Ministry of Health or other public hospitals in the Klang Valley. The evidence base therefore contains relevant pieces, but not a direct test of the proposed explanatory structure.

Problem Statement

The core problem is not simply that medical work is demanding. High clinical demand is inherent in hospital practice and may coexist with professional meaning. The unresolved issue is whether medical officers' job demands are experienced at a level that weakens their evaluation of public-hospital employment, and whether the compatibility of work with recovery and non-work responsibilities helps explain that evaluation. This distinction makes job satisfaction an appropriate outcome because it captures the medical officer's judgement of the employment relationship rather than using burnout, fatigue, or turnover intention as substitutes.

The workforce problem is particularly consequential in Klang Valley public hospitals. First, official service statistics indicate a high-volume public-hospital environment in Selangor and Kuala Lumpur (Ministry of Health Malaysia, 2025). Second, recent evidence from ten public hospitals in the Klang Valley indicates that more than half of the surveyed doctors met the threshold for intention to leave the public service, with temporal justice significantly associated with turnover intention (Mohamad et al., 2025). Malaysian studies involving physicians and other healthcare workers also identify administrative overload, inadequate recovery, burnout, and work-family strain as important occupational concerns. Ab Rahman et al. (2019) documented administrative overload among public-sector primary care doctors, while Mohd Fauzi et al. (2020) reported comparatively lower intershift recovery among doctors working in tertiary public hospitals. Roslan et al.

(2021) further identified workload and challenges in maintaining work-family balance as reported sources of burnout among Malaysian healthcare workers during the COVID-19 pandemic. Taken together, these findings establish an urgent workforce-management problem, but they do not show whether medical officers who experience heavier workload and poorer work-life balance are also less satisfied with their jobs.

The current literature is limited in four specific ways. Much of the Malaysian evidence measures burnout, fatigue, stress, or turnover intention rather than job satisfaction. Studies that do assess job satisfaction often focus on primary care doctors or university-hospital medical officers rather than medical officers in public hospitals. Klang Valley evidence on doctor retention does not isolate job satisfaction as the focal outcome. Furthermore, workload and work–life balance are often discussed as related pressures, but they are not conceptually identical and have rarely been examined together as distinct predictors of medical officers' job satisfaction in this setting. A clear and context-specific explanation remains limited in the literature identified for this review.

Accordingly, this article proposes a framework that evaluates workload and work-life balance as separate correlates of job satisfaction among medical officers working in public hospitals in the Klang Valley. The framework relates to the question posed by the evidence: when public-hospital work is demanding, is dissatisfaction more closely related to the intensity and accumulation of job demands, the extent to which work disrupts recovery and non-work life, or both? Answering this question can provide a more precise basis for subsequent empirical testing and for distinguishing between interventions aimed at the amount and organization of work and interventions aimed at recovery and work–life compatibility.

2. Literature Review

Theoretical Background: Job Demands-Resources Theory

The framework is primarily based on the theory of Job Demands-Resources (JD-R). The original model differentiates between job demands, which require sustained physical or psychological effort and may therefore lead to costs when the demands are high, and job resources, which support the achievement of goals, reduce the costs of demands, or stimulate growth (Demerouti et al., 2001). Subsequent formulations outline two general procedures. The health impairment process involves continual demands that drain energy and heighten strain, while the motivational process involves the use of resources to promote work engagement and positive work outcomes (Bakker & Demerouti, 2017). The theory is deliberately flexible because the demands and resources that matter vary by occupation and organizational context.

Recent developments in JD-R theory make this contextual flexibility more explicit and recognize that work processes interact with experiences outside work (Bakker et al., 2023). That development is relevant to medical officers, but it creates a conceptual problem that this framework must resolve. Work-life balance is sometimes treated loosely as if it were a conventional job resource. Doing so risks mixing an organizational condition with an employee's appraisal of whether work remains compatible with recovery and non-work roles. The present framework therefore does not classify work-life balance as a job resource in the original JD-R sense. It treats workload as a job demand and work-life balance as a cross-domain recovery-compatibility appraisal that reflects the practical consequences of work demands for life outside work.

Job satisfaction is positioned as an attitudinal outcome. JD-R theory was initially developed around burnout, but later theory and evidence do not require the health-impairment process to terminate only in exhaustion. Bakker and Demerouti (2017) established this broader theoretical scope, which Bakker et al. (2023) subsequently developed further. Persistent demands can also shape employees' evaluations of their work. This distinction matters because dissatisfaction is not simply a milder form of burnout. It is a judgement about the job and its conditions. The proposed model therefore uses JD-R reasoning to explain why excessive demand and insufficient recovery compatibility may be associated with less favorable job evaluations, while retaining job satisfaction as conceptually distinct from strain.

The framework is intentionally bounded. It does not measure the full set of possible job resources such as supervisory support, autonomy, recognition, or career development. It also does not test all JD-R mechanisms. Its purpose is narrower: to use the demand and recovery logic of JD-R to separate two theoretically related but

non-equivalent conditions, workload and work-life balance, and to examine their association with medical officers' job satisfaction. This scope prevents the article from claiming a full test of JD-R theory and makes the proposed theoretical contribution more defensible.

Job Satisfaction among Medical Officers

Job satisfaction refers to an overall evaluative judgment about one's job, informed by both beliefs about work conditions and affective responses to work experiences (Williams et al., 2024). In healthcare, this evaluation can involve several domains. A factor-analytic study by Karaferis et al. (2022) demonstrated that healthcare job satisfaction is multidimensional rather than reducible to a single working condition. For medical officers, relevant domains can include the content of clinical work, organizational systems, remuneration, professional development, collegial relationships, and the capacity to sustain responsibilities outside work. The qualitative findings of Muhammad et al. (2025) illustrate this multidimensionality in a Malaysian medical-officer sample.

Evidence from physician studies also indicates that job satisfaction is associated with multiple work-related factors and should not be interpreted solely in relation to working hours. Voltmer et al. (2024) found that effort and reward were significantly associated with job satisfaction among physicians in Germany and Norway. In Malaysia, Ab Rahman et al. (2019) similarly reported differences in job satisfaction between public and private sector primary care doctors, alongside differences in administrative overload and perceived effort-reward balance. These studies support the proposition that doctors evaluate both what work requires and what the work arrangement provides. However, the international findings are not directly transferable to Malaysian public hospitals, while the Malaysian primary-care study does not represent medical officers in hospital-based services.

The strongest recent local reason to study job satisfaction is its potential connection to retention. The global meta-analysis by Wang et al. (2025) identified lower job satisfaction as a significant risk factor for turnover intention among doctors. In the Klang Valley, Mohamad et al. (2025) reported turnover intention among doctors working in public hospitals, but did not examine whether job satisfaction was associated with this pattern. This evidence is relevant because it highlights concerns about doctors' continued employment in the public sector, while leaving the role of job satisfaction unresolved. The same relationships therefore cannot be assumed among medical officers working in public hospitals in the Klang Valley. A context-specific study is needed rather than relying on inference from related occupational outcomes.

Workload

Within the proposed framework, workload is the cumulative intensity of clinical, administrative, cognitive, temporal, and coordination demands placed on a medical officer during work. The construct is broader than scheduled hours. Two doctors can work similar hours but face different patient complexity, interruption frequency, documentation burden, on-call intensity, or decision pressure. Demerouti et al. (2001) define such features as job demands when they require sustained effort and consume physical or psychological resources. Bakker and Demerouti (2017) maintain this theoretical logic in the later formulation of JD-R theory. The framework therefore focuses on perceived overall demand rather than treating hours alone as a sufficient representation of workload.

Evidence in healthcare shows that perceived overload has consequences even when job satisfaction is not measured directly. Rotenstein et al. (2023), using a large healthcare-workforce sample, reported that 37.1% of physicians experienced work overload. Among physicians, overload was associated with an adjusted risk of burnout 2.42 times that of physicians without reported overload. Overload was also associated with intention to leave across healthcare occupational groups. Because job satisfaction was not the primary outcome, these results should not be presented as direct evidence for the present hypothesis. They instead show that overload can have consequential attitudinal and health-related correlates.

Malaysian findings make the workload issue locally plausible but still incomplete. Public primary care doctors reported substantial administrative overload in Ab Rahman et al. (2019), while doctors working in tertiary public hospitals in Mohd Fauzi et al. (2020) reported high fatigue and comparatively lower intershift recovery, with work-related rumination during non-work time associated with poorer fatigue and recovery outcomes. Roslan et al. (2021) also identified workload as one of the reported sources of burnout among Malaysian

healthcare workers during the COVID-19 pandemic. The consistency of these findings supports workload as a relevant demand. Yet the studies vary in occupational group, care setting, period, and outcome, and none establishes the independent association between multidimensional workload and job satisfaction among Klang Valley public-hospital medical officers.

Workload and Job Satisfaction

The proposed negative relationship follows from theory rather than from a simple accumulation of empirical correlations. In JD-R terms, workload becomes problematic when the sustained effort required to meet clinical and organizational demands repeatedly consumes more capacity than can be restored. Over time, an employee may evaluate the job less favorably because the work arrangement is experienced as difficult to sustain. This pathway does not imply that demanding clinical work is inherently dissatisfying. Challenge, professional responsibility, and complex work can remain meaningful. The critical condition is whether the overall demand remains manageable relative to available time, energy, and organizational support.

This interpretation also reconciles apparently mixed evidence. International physician studies link effort-related conditions with lower satisfaction (Voltmer et al., 2024), while overload studies more often report burnout and withdrawal outcomes rather than job satisfaction (Rotenstein et al., 2023). Malaysian studies identify the same broad problem from different settings. Ab Rahman et al. (2019) report administrative burden in primary care, while Mohd Fauzi et al. (2020) demonstrate fatigue and recovery difficulties among public-hospital doctors. The evidence therefore supports a plausible demand-attitude relationship, but its magnitude and relevance for medical officers in Klang Valley public hospitals remain empirical questions. The framework proposes the following directional hypothesis:

H1: There is a significant relationship between workload and job satisfaction among medical officers in public hospitals in the Klang Valley

Work-Life Balance

Work-life balance is conceptualized as an individual's appraisal of the degree of compatibility between work and non-work roles, in terms of the ability to combine these roles in accordance with personal priorities, recovery and effective functioning. Contemporary work-nonwork research acknowledges that non-work life encompasses more than just family obligations; it also includes recuperation and other important roles. Kerksieck et al. (2024) emphasize active balancing across life domains, while Casper et al. (2025) review the organizational conditions shaping work-life balance. Thus, for medical officers, the construct therefore concerns the sustainability of the work arrangement across domains rather than the absence of professional commitment.

This definition is theoretically distinct from workload. Workload refers to the amount of work that has to be done. Work-life balance is about whether those demands are still compatible with adequate recovery and participation in non-work life. A medical officer may report high workload but acceptable work-life balance if schedules, autonomy, recovery opportunities, or personal circumstances make the arrangements workable. By contrast, even a moderate workload is sufficient to cause poor balance when demands are unpredictable or constantly encroach on recovery time. Treating the two variables as interchangeable would therefore conceal potentially different organizational mechanisms.

The recovery dimension has support in both Malaysian and international physician research. Mohd Fauzi et al. (2020) found that work-related activities and rumination during non-work time were associated with worse fatigue and recovery among Malaysian doctors. Shanafelt et al. (2022) reported a marked decline in satisfaction with work-life integration among United States physicians during the first two years of the COVID-19 pandemic, alongside higher burnout. The latter study is pandemic-specific and was conducted outside Malaysia, so it cannot establish the present relationship. It nevertheless illustrates why intrusion of work into non-work recovery is occupationally meaningful for physicians.

Work-Life Balance and Job Satisfaction

A positive relationship between work-life balance and job satisfaction is expected because employees evaluate a job partly through the consequences of that job for life outside work. Clinical work can be meaningful while the employment arrangement is judged unfavorably if schedules repeatedly disrupt sleep, family

responsibilities, recovery, or other valued activities. Within the bounded JD-R interpretation used here, work-life balance signals whether exposure to job demands remains compatible with replenishment of resources across domains. Better compatibility should therefore be associated with a more favorable overall job evaluation.

Local evidence supports the relevance of this mechanism without fully resolving it. Mohamad et al. (2025), in a study of doctors working in public hospitals in the Klang Valley, found that temporal justice was inversely associated with turnover intention, suggesting that perceived fairness in the allocation of work and personal time is relevant to doctors' intention to remain in public service. Muhammad et al. (2025) also identified family time as part of the personal fulfilment experiences associated with job satisfaction among medical officers in a Malaysian university hospital. Neither study tests work-life balance as a quantitative predictor of job satisfaction in public-hospital medical officers. The proposed relationship is therefore theoretically defensible, locally relevant, and still empirically open.

H2: There is a significant relationship between work-life balance and job satisfaction among medical officers in public hospitals in the Klang Valley.

Critical Synthesis and Research Gap

The literature converges on one broad point: the organization of doctors' work matters. It does not converge on a single outcome or a single mechanism. Some Malaysian studies measure job satisfaction, others measure burnout, fatigue, recovery, or turnover intention. Some examine primary care physicians, some heterogeneous healthcare workers, and some broader groups of doctors. The resulting evidence cannot be combined as if these constructs and populations were interchangeable. Table 1 summarizes the evidence most directly relevant to the proposed framework and the limitation each study leaves unresolved.

Table 1: Critical Synthesis of Empirical Evidence Relevant to the Proposed Framework

Study and context	Primary focus	Relevant evidence	Limitation for the present framework
Ab Rahman et al. (2019), Malaysia, public and private primary care	Job satisfaction	Public-sector doctors reported greater administrative overload and lower overall job-satisfaction scores than private-sector doctors.	Primary care setting. Does not isolate public-hospital medical officers or directly examine work-life balance.
Mohd Fauzi et al. (2020), seven tertiary public hospitals in Selangor, Malaysia	Fatigue and recovery	Doctors reported high acute and chronic fatigue scores alongside comparatively lower inter-shift recovery. Work-related rumination during non-work time was associated with poorer fatigue and recovery outcomes.	Does not measure job satisfaction or test workload and work-life balance together.
Roslan et al. (2021), Malaysian healthcare workers	Burnout	High levels of personal and work-related burnout were reported. Workload and challenges in maintaining work-family balance emerged as reported sources of burnout in the qualitative findings.	Mixed healthcare occupations, COVID-19 pandemic context, and burnout rather than job satisfaction.
Mohamad et al. (2025), ten public hospitals in the Klang Valley	Turnover intention and organizational justice	More than half of the surveyed doctors met the study threshold for intention to leave the public	Directly relevant setting, but the sample was not restricted specifically to medical officers and job

		sector. Distributive and temporal justice were significantly associated with turnover intention.	satisfaction was not examined as an outcome.
Muhammad et al. (2025), Malaysian university hospital	Medical-officer job satisfaction	Patient care, family time and educational responsibilities, teamwork and hospital facilities, and concerns related to hospital systems, salary, and career advancement emerged as themes related to job satisfaction and dissatisfaction.	Medical officer-specific but qualitative and conducted in a university-hospital setting rather than among Medical officers working in MOH public hospitals in the Klang Valley.
Rotenstein et al. (2023), US healthcare-workforce sample across 206 organizations	Work overload, burnout, and intention to leave	Work overload was significantly associated with burnout and intention to leave across healthcare occupational groups, including physicians.	US context, mixed healthcare occupations, and job satisfaction was not directly measured.
Voltmer et al. (2024), Germany and Norway	Physician job satisfaction and work stress	Effort and reward were significantly related to physician job satisfaction.	Cross-sectional evidence from Germany and Norway, where healthcare-system and employment conditions differ from Malaysia.

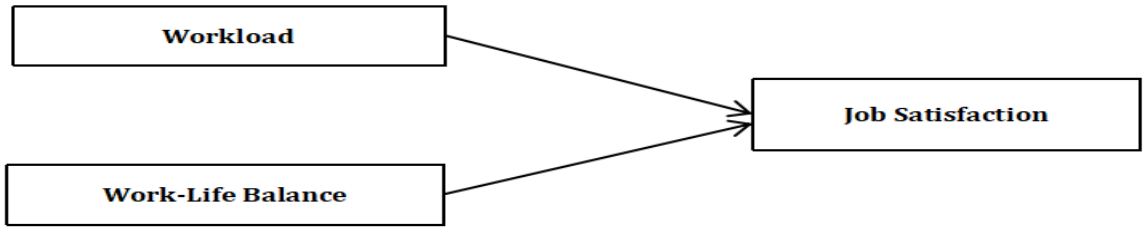
The synthesis exposes several unresolved limitations. Outcome substitution is common. Burnout, fatigue, and turnover intention are consequential, but none is equivalent to job satisfaction. Occupational aggregation also limits inference because findings from healthcare workers or doctors generally do not necessarily describe medical officers, whose career stage and hospital responsibilities may differ from other groups. Contextual transfer remains uncertain as well. Evidence from primary care, university hospitals, or foreign health systems can establish plausibility but cannot determine the pattern within Klang Valley public hospitals.

The research gap is therefore narrower and more defensible than the claim that job satisfaction has never been studied in Malaysia. Relevant Malaysian studies do exist. What remains insufficiently explained is the joint and distinct relationship of workload and work-life balance with job satisfaction among medical officers in Klang Valley public hospitals. This is the gap the proposed framework addresses. It retains relevant prior evidence but does not treat indirect outcomes as proof of the hypothesized relationships.

3. Proposed Conceptual Framework and Theoretical Contribution

The framework is derived in four steps. First, JD-R theory identifies workload as a job demand that can consume energy when exposure is sustained. This principle originates in Demerouti et al. (2001) and remains central in Bakker and Demerouti (2017). Second, recent JD-R developments recognize the importance of work–home processes and therefore support the consideration of recovery beyond the formal work environment (Bakker et al., 2023). Third, work-life balance is a conceptually distinct construct from workload and formal job resources. It is treated as an appraisal of whether occupational demands remain compatible with recovery and non-work responsibilities. Fourth, job satisfaction is conceptualized as an attitudinal evaluation instead of a proxy for burnout or turnover intention. The two direct relationships in Figure 1 follow from this sequence rather than from combining variables solely because prior studies found statistical associations.

Figure 1: Proposed conceptual framework



The primary theoretical contribution of the framework is the clarification of its construct. Workload and work-life balance are often discussed together, but they refer to different questions. Workload asks how hard the job is. Work-life balance considers whether the resultant work arrangement is compatible with recovery and valued non-work roles. The framework, when separated, can distinguish dissatisfaction due to too much occupational demand from dissatisfaction due to interference from other domains. This distinction provides a more informative overview than a single undifferentiated construct of work pressure.

The framework also extends the outcome focus of the local literature without claiming a new universal theory. Malaysian healthcare research has produced important evidence on burnout, fatigue, stress, and turnover intention. The proposed framework shifts the focal outcome to job satisfaction and explicitly protects the boundary between these constructs. This matters theoretically because an attitudinal evaluation of the job can be influenced by demand and recovery conditions even when burnout is absent, and because retention problems cannot be assumed to operate only through exhaustion.

A further contribution is context specification. JD-R theory argues that relevant demands and resources depend on occupational context. The framework therefore applies a general theoretical logic to a defined workforce and setting: medical officers in public hospitals in the Klang Valley. The contribution lies in testing whether a demand-recovery-attitude explanation holds in this context, not in claiming that Klang Valley medical officers are governed by a unique psychological process. This bounded claim is stronger than presenting the framework as universally novel because it is falsifiable and proportionate to the variables included.

The model deliberately avoids adding unsupported pathways. Workload may affect work-life balance, and organizational resources may moderate the effects of demands, but the present framework does not specify mediation or moderation because those mechanisms are not part of the stated research objectives. Future studies can extend the model if theory and measurement justify those pathways. The immediate test is whether workload and work-life balance show distinct associations with job satisfaction when examined within the same medical-officer population.

4. Research Methodology

Research Design

This study will employ a quantitative approach using a cross-sectional correlational survey design. This design is suitable for examining the relationships between workload, work-life balance, and job satisfaction among medical officers working in public hospitals in the Klang Valley.

Data will be collected at one point in time. Therefore, the study will provide information on the relationships among the variables during the period of data collection rather than changes over time. As the variables will be measured concurrently, the findings will be interpreted as statistical associations rather than causal relationships (Wang & Cheng, 2020).

Population and Sample Size

The target population will consist of medical officers working in public hospitals in the Klang Valley. The minimum sample size will be determined using G*Power 3.1 through an a priori power analysis for multiple linear regression, based on a medium effect size ($f^2 = 0.15$), a significance level of .05, statistical power of .80, and the predictors included in the final regression model (Faul et al., 2009). To support representation across

participating hospitals and medical officer grades, while allowing for possible non-response and incomplete questionnaires, the study will target 150 medical officers.

Sampling Method

Respondents will be selected using proportionate stratified random sampling. Medical officers will be segregated first by the hospitals they are participating in. Consideration will also be given to medical officer grade to ensure appropriate representation of different professional levels, subject to availability of an appropriate sampling frame.

The number of medical officers selected from each stratum would be proportional to the number of eligible medical officers in that stratum. Participants who qualify will then be randomly selected by a computer-generated random process. This approach is more suitable than applying simple random sampling to the entire population because medical officers are distributed across different hospitals and professional grades. Job tenure will be collected as an occupational characteristic and considered in the statistical analysis where theoretically relevant.

Research Instrument

Data will be collected using a structured questionnaire. The questionnaire will consist of demographic and occupational information together with validated scales measuring workload, work-life balance, and job satisfaction. Demographic and occupational information will include relevant characteristics such as age, gender, hospital, department, medical officer grade, employment status, and job tenure.

The methodology will identify the source of each measurement scale, number of items, response format, scoring procedure, and available evidence of reliability and validity. Any modification of existing items will be limited to changes necessary for the Malaysian public-hospital context while maintaining the original meaning of the items.

Pilot Study

A pilot study involving approximately 30 medical officers with characteristics similar to the target population will be conducted before the main data collection. Participants involved in the pilot study will not be included in the final study.

The pilot study will assess questionnaire clarity, completion time, response options, and the overall administration process. It will also help identify unclear or inappropriate items before the questionnaire is administered to the main sample.

Validity of the Instrument

Content validity will be assessed by experts with relevant knowledge of healthcare management, organizational behavior, research methodology, and the working conditions of medical officers. The experts will evaluate the relevance, clarity, and suitability of the questionnaire items. Face validity will also be assessed through feedback from medical officers during questionnaire pretesting and the pilot study.

Reliability of the Instrument

The reliability of the workload, work-life balance, and job-satisfaction scales will be assessed by using Cronbach's alpha. The reliability of each scale will be checked separately before the main statistical analyses.

Data Collection Procedure

Following ethical and institutional approval, selected medical officers will be invited to participate in the study. Participation will be voluntary, and informed consent will be obtained before questionnaire completion. The number of medical officers invited, responses received, incomplete questionnaires, exclusions, and questionnaires included in the final analysis will be recorded.

Data Analysis

Descriptive statistics will be used to summarize participant characteristics and the levels of workload, work-life balance, and job satisfaction. Correlation analysis will be used to examine the relationship between

workload and job satisfaction and the relationship between work-life balance and job satisfaction. Multiple linear regression will then be used to examine the contribution of workload and work-life balance to job satisfaction. Relevant characteristics such as medical officer grade and job tenure may also be included in the analysis where theoretically justified. The assumptions required for the statistical analyses will be examined before interpreting the results. Because the study uses a cross-sectional design, the findings will be interpreted as statistical relationships rather than causal effects.

Ethical Considerations

Ethical approval will be obtained from the relevant authorities before data collection. Participants will be informed of the purpose of the study, voluntary participation, confidentiality, and their right to withdraw. No personally identifiable information will be reported, and all research data will be stored securely.

5. Recommendations and Conclusion

Recommendations

Public hospitals should consider conducting periodic assessments of workload, work-life balance, and job satisfaction among medical officers using validated instruments. Where excessive workload is identified, hospital management could review staffing arrangements, the distribution of clinical workload, on-call schedules, documentation requirements, and administrative responsibilities. Work schedules should also provide adequate opportunities for recovery and minimize unnecessary interference with medical officers' personal responsibilities.

Organizational interventions should focus on working conditions rather than placing the main responsibility for managing occupational strain on individual medical officers. Individual wellbeing initiatives may provide additional support, but this should be alongside wider organizational measures such as workforce planning, improvement of work processes, reduction of unnecessary administrative burden and provision of adequate recovery opportunities.

Future research should empirically test the proposed framework among medical officers working in public hospitals in the Klang Valley. Future studies could extend the framework to the public hospitals in other parts of Malaysia to see if similar relationships are observed in different healthcare settings. Longitudinal studies may also be helpful to examine whether changes in workload and work-life balance precede changes in job satisfaction.

Future studies may also consider other organizational variables that may be related to job satisfaction, such as adequacy of staffing, professional autonomy, organizational support, job security and opportunities for career development. Examining these factors can lead to a better understanding of the factors relating to job satisfaction among medical officers in Malaysian public hospitals.

Conclusion

Job satisfaction among medical officers in public hospitals in the Klang Valley needs to be explored as it is associated with sustainability of the workforce, occupational demands and sustainability of continued employment in the public health care sector. Recent evidence from Malaysia suggests significant service activity, occupational stress, and workforce retention concerns, but existing studies on job satisfaction among medical officers in this particular setting have not provided a direct explanation for this. The proposed framework addresses this gap by distinguishing workload as a job demand from work-life balance as an appraisal of the compatibility between work demands, recovery, and personal responsibilities, while treating job satisfaction as a distinct attitudinal outcome. Therefore, the framework is used as a theoretical basis to examine the association of workload and work-life balance with job satisfaction amongst the medical officers in the public hospitals of Klang Valley.

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