Job insecurity and psychological wellbeing among junior doctors in Malaysia: A national cross-sectional study

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ABSTRACT

Introduction: In Malaysia, the rising number of medical graduates has led to a shift from permanent to contract employment in the healthcare system since 2016. This study investigates the impact of employment status on mental health outcomes, job satisfaction, and career perceptions among junior doctors in Malaysia.

Materials and Methods: This nationwide study compared 1,966 contract and 698 permanent junior doctors in Malaysia using validated instruments (Maslach Burnout Inventory, DASS-21, WHOQOL-BREF) and career perception measures.

Results: Contract doctors showed higher depression (adjusted mean 8.72 [95% CI: 8.18-9.26] vs 6.88 [95% CI: 6.25-7.51], p<0.001), anxiety (adjusted mean 6.41 [95% CI: 5.96-6.86] vs. 4.89 [95% CI: 4.36-5.41], p<0.001), stress (adjusted mean 8.74 [95% CI: 8.24-9.23] vs 7.86 [95% CI, 7.28-8.44], p<0.001), emotional exhaustion (adjusted mean 32.14 [95% CI: 30.86-33.42] vs 27.18 [95% CI: 25.68-28.68], p<0.001), and depersonalization (14.10 [95% CI: 13.41-14.80] vs 11.94 [95% CI: 11.13-12.76], p<0.001). Their quality of life was lower in physical (adjusted mean 10.48 [95% CI: 10.30-10.67] vs 11.09 [95% CI: 10.87-11.31], p<0.001), psychological (adjusted mean 11.50 [95% CI: 11.29-11.70] vs 11.86 [95% CI: 11.63-12.10], p<0.001), and environmental domains (adjusted mean 12.42 [95% CI: 12.18-12.65] vs 13.11 [95% CI 12.83-13.38], p<0.001). Contract doctors reported significantly lower satisfaction across multiple domains. Despite similar aspirations to succeed in medicine (OR 0.8 [95% CI: 0.6-1.1], p=0.117), contract doctors reported lower career security (OR 0.04 [95% CI: 0.03-0.05], p<0.001), reduced confidence in specialty training access (OR 0.3 [95% CI: 0.2-0.3], p<0.001), and higher intentions to change careers (OR 5.9 [95% CI: 4.7-7.5], p<0.001) or emigrate (OR 1.9 [95% CI: 1.5-2.3], p<0.001).

Conclusion: Contract employment is associated with poorer mental health, reduced job satisfaction, and diminished career confidence despite similar professional aspirations. These findings suggest current employment practices may threaten healthcare workforce sustainability and highlight the need for policy reforms.

KEYWORDS:
Employment insecurity; Physician burnout; Junior doctors; Psychological distress; Career Satisfaction; Healthcare workforce sustainability

INTRODUCTION

The healthcare profession has traditionally offered high job security, but economic pressures, system reforms, and the COVID-19 pandemic have accelerated a global shift toward contract-based employment.[1-3] This transition has generated considerable job insecurity-defined as the perceived powerlessness to maintain desired continuity in threatened employment circumstances[3]–with significant implications for healthcare delivery and worker wellbeing.[4,5]

Job insecurity affects individuals beyond mere career instability. Evidence suggests that anticipating potential job loss can be as psychologically damaging as actual unemployment, negatively impacting work performance, organizational commitment, and mental health.[6,7] In healthcare context, these effects are particularly concerning as they may directly compromise patient care quality and safety. Meta-analyses consistently demonstrate that job insecurity correlates strongly with poorer job attitudes, diminished satisfaction, and impaired psychological well-being.[4,5,7,8]

In Malaysia, job insecurity has emerged as a critical issue for junior doctors due to structural challenges within the medical workforce pipeline. Following graduation, doctors must complete a mandatory two-year housemanship in public hospitals, followed by service as medical officers before pursuing specialist training. However, a significant surge in medical graduates has overwhelmed the system's capacity to provide permanent positions and training opportunities. To address immediate employment needs, the Malaysian government introduced a contract system in 2016, creating additional challenges related to career progression and job stability.

Junior doctors are particularly vulnerable to these unstable career pathways since the contract system constrains their

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ability to pursue specialist training - a process requiring 8-10 years from graduation to certification. The misalignment between graduate numbers and available training infrastructure undermines both career development and psychological wellbeing. While global research has extensively documented burnout and stress among healthcare workers[9-11], limited attention has been given to how job insecurity specifically affects mental health and well-being among Malaysian junior doctors. This study aims to assess the association between employment status and key outcomes including burnout, emotional distress, and quality of life in this vulnerable professional cohort.

MATERIALS AND METHODS

Study Design and Population

We conducted an anonymous national cross-sectional online survey from July 9 to July 31, 2022. The study targeted junior doctors in Malaysian healthcare system, defined as qualified medical doctors with less than seven years of experience, ranging from housemanship to pre-completion of postgraduate training. Doctors with previously diagnosed psychiatric disorders were excluded from the analysis to focus on work-related factors rather than pre-existing conditions.

Based on Malaysian Medical Association (MMA) registry data, approximately 5,244 junior doctors were practicing in Malaysia during the study period. The study was disseminated via social media, email, and WhatsApp through collaborations with MMA SCHOMOS division and hospital stakeholders. Participants were recruited using convenience and snowball sampling through the Google Forms platform.

We received 2,705 initial responses. After excluding 41 participants with previously diagnosed psychiatric disorders, 2,664 complete responses were included in the final analysis, representing an approximate response rate of 51% from an estimated eligible population of 5,244 junior doctors. All questions in the survey were set as compulsory fields to ensure complete data collection, resulting in no missing data in the final dataset. A participant flow diagram is presented in Figure 1.

Measures

The survey incorporated a validated self-administered tools and custom-designed questions to evaluate physical and mental well-being across employment status categories. The following standardized instruments were employed:

1. **Depression, Anxiety, and Stress Scales 21 (DASS-21):** This instrument assesses psychological distress across three domains using a 4-point Likert scale from "never" (0) to "almost always" (3) and demonstrates robust psychometric properties.[12-14]
2. **Maslach Burnout Inventory (MBI):** This validated measure evaluates burnout across three dimensions: emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items). Items are rated on a 7-point Likert scale from "never" (0) to "daily" (6).[15-18]
3. **World Health Organization Quality of Life (WHOQOL-BREF):** This instrument assesses quality of life across four domains: physical health, psychological health, social relationships, and environment.[19,20]

The survey also included demographic questions (gender, age, ethnicity, employment grade, marital status, years of service, and service scheme) and custom items exploring satisfaction, perceptions of organizational efforts, sense of belonging, and responses to employment circumstances.

Statistical Analysis

Data analysis was performed using IBM SPSS Statistics for Windows, Version 26.0 (Armonk, NY: IBM Corp). Descriptive statistics characterized the sample and summarized survey responses. Between-group comparisons (contract versus permanent doctors) employed Chi-square tests for categorical variables and independent samples t-test or Mann-Whitney U tests for continuous variables, as appropriate.

Multiple regression models assessed associations between employment status and outcome measures while adjusting for relevant demographic factors (gender, marital status, and ethnicity). Age, years of service, and job grade were not included as independent covariates due to perfect multicollinearity with employment status- all permanent staff are older medical officers with longer service, while contract staff are predominantly younger house officers/ early-career medical officers.

To address multiple testing across DASS-21, MBI, and WHOQOL-BREF subscales, Bonferroni correction was applied. For perception domains (Table III and IV), multivariable regression analyses were performed with adjustment for gender, marital status, and ethnicity. Effect sizes were calculated using partial eta squared (η^2p) for continuous outcomes and odds ratios for categorical outcomes. Statistical significance was set at $p<0.05$. All results are presented as adjusted means or odd ratios with 95% confidence intervals.

Ethical Consideration

The study adhered to the Declaration of Helsinki principles. Ethical approval was obtained from the Medical Research and Ethics Committee (MREC) of the Ministry of Health Malaysia (NMRR ID-21-1616-60899). All participants provided informed consent prior to survey completion.

RESULTS

Demographic characteristics

Among 2,664 respondents, 1,966 (73.8%) held contract positions and 698 (26.2%) held permanent positions. As shown in Table I, contract doctors were significantly younger (mean age 28.14 vs 31.97 years, $p<0.001$) and more frequently female (62.2% vs 56.3%, $p=0.007$). The ethnic distribution included Malay (42.5%), Chinese (32.3%), and Indian (19.9%) participants, with no significant differences by employment status ($p=0.252$).

Professional status and experience

As detailed in Table I, permanent doctors were exclusively medical officers, while contract doctors included both house officers (43.0%) and medical officers (57.0%). Years of service differed significantly between groups ($p<0.001$), with 15.9%

Table I: Demographic Characteristics of Study Respondents

Variables	Total N= 2664 (%)	Contract n=1966 (%)	Permanent n=698 (%)	p-value*
Gender				
Male	1049 (39.4)	744 (37.8)	305 (43.7)	0.007
Female	1615 (60.6)	1222 (62.2)	393 (56.3)	
Age in years				
mean (SD)	29.14 (2.53)	28.14 (1.71)	31.97 (2.29)	<0.001‡
Ethnicity				
Malay	1133 (42.5)	846 (43.0)	287 (41.1)	
Chinese	861 (32.3)	530 (19.9)	620 (31.5)	
Indian	389 (19.8)	241 (34.5)	141 (20.2)	0.252
Others[a]	140 (5.3)	111 (5.6)	29 (4.2)	
Marital status				
Single	1713 (64.3)	1396 (71.0)	317 (45.4)	
Married	883 (33.1)	524 (26.7)	359 (51.4)	<0.001
Others[b]	68 (2.6)	46 (2.3)	22 (3.2)	
Position				
House officer	846 (31.8)	846 (43.0)	0	
Medical officer	1818 (68.2)	1120 (57.0)	698 (100.0)	<0.001
Year(s) of service				
≤2	1028 (38.6)	1021 (15.9)	7 (1.0)	
3-4	994 (37.3)	642 (24.2)	884 (45.0)	
5-6	61 (3.1)	110 (15.8)	581 (83.2)	<0.001

SD, Standard Deviation
a Other races not specified
b Other marital statuses
* Significant p value are bolded, derived from Pearson Chi-Square unless specified otherwise
‡ Independent t-test

Table II: Depression Anxiety Stress Scales (DASS), Maslach Burnout Inventory (MBI), and World Health Organization Quality of Life (WHOQOL-BREF)

Variables	Total Mean Score (SD)	Contract Mean Score (SD) Adjusted mean (95% CI)	Permanent Mean Score (SD) Adjusted mean (95% CI)	Efect size	p-value*
Depression Anxiety Stress Scales (DASS)					
Anxiety	6.08 (4.82)	6.52 (4.93) 6.41 (5.96, 6.86)[a]	4.84 (4.28) 4.89 (4.36, 5.41)[a]	0.018	<0.001
Depression	8.32 (5.80)	8.85 (5.87) 8.72 (8.18, 9.26)[a]	6.82 (5.36) 6.88 (6.25, 7.51)[a]	0.018	<0.001
Stress	8.51 (5.30)	8.78 (5.36) 8.74 (8.24, 9.23)[a]	7.75 (5.05) 7.86 (7.28, 8.44)[a]	0.005	<0.001
Maslach Burnout Inventory (MBI)					
Emotional exhaustion	30.99 (13.82)	32.38 (13.37) 32.14 (30.86, 33.42)[a]	27.08 (14.30) 27.18 (25.68, 28.68)[a]	0.024	<0.001
Depersonalization	13.21 (7.46)	13.82 (7.44) 14.10 (13.41, 14.80)[a]	11.49 (7.24) 11.94 (11.13, 12.76)[a]	0.015	<0.001
Personal accomplishment	24.37 (9.11)	24.18 (8.86) 25.02 (24.16, 25.88)[a]	24.90 (9.78) 25.57 (24.56, 26.57)[a]	0.001	0.188
WHOQOL-BREF					
Physical Health	10.6 (2.03)	10.44 (2.01) 10.48 (10.30, 10.67)[a]	11.04 (1.99) 11.09 (10.87, 11.31)[a]	0.016	<0.001
Psychological Health	11.49 (2.15)	11.38 (2.15) 11.50 (11.29, 11.70)[a]	11.81 (2.12) 11.86 (11.63, 12.10)[a]	0.005	<0.001
Social Relationships	12.48 (3.29)	12.40 (3.31) 12.99 (12.69, 13.30)[a]	12.70 (3.21) 12.92 (12.57, 13.28)[a]	<0.001	0.631
Environment	12.44 (2.54)	12.28 (2.52) 12.42 (12.18, 12.65)[a]	12.89 (2.55) 13.11 (12.83, 13.38)[a]	0.014	<0.001

SD, Standard Deviation
Note: Each question were analysed independently and the results were derived after controling for sociodemographic data such gender, ethnicity, and marital status in the analysis
a Reported adjusted mean and 95% confidence interval (CI)
*Significant p value are bolded, derived from multiple regression models and adjusted using Bonferroni

Table III: Responses to questions about perceptions relating to job securities

Domains	Total Mean (SD)	Contract Mean (SD) Adjusted mean (95% CI)	Permanent Mean (SD) Adjusted mean (95% CI)	Efect size	p-value*
Job satisfaction as doctor	4.81 (2.47)	4.50 (2.44) 4.60 (4.37, 4.83)[a]	5.71 (2.33) 5.87 (5.61, 6.14)[a]	0.048	<0.001
Doctor welfare preserved	2.80 (2.40)	2.53 (2.29) 2.71 (2.48, 2.93)[a]	3.56 (2.54) 3.80 (3.54, 4.06)[a]	0.038	<0.001
Quality time for self/family	3.18 (2.51)	2.97 (2.38) 3.02 (2.79, 3.25)[a]	3.79 (2.75) 3.79 (3.52, 4.06)[a]	0.018	<0.001
Adequate salary	3.62 (2.65)	3.37 (2.56) 3.43 (3.19, 3.68)[a]	4.33 (2.76) 4.55 (4.26, 4.83)[a]	0.033	<0.001
Exposure to hazards at workplace	7.13 (2.89)	7.08 (3.01) 6.86 (6.59, 7.13)[a]	7.28 (2.52) 7.08 (6.76, 7.40)[a]	0.001	0.095
Career progression opportunities	2.86 (3.06)	1.78 (2.31) 1.66 (1.43, 1.89)[a]	5.93 (2.81) 5.94 (5.67, 6.20)[a]	0.358	<0.001
Do not dare to voice out my welfare issue as I can be disposed anytime	6.99 (3.00)	7.19 (3.01) 7.12 (6.84, 7.40)[a]	6.42 (2.91) 6.30 (5.97, 6.63)[a]	0.014	<0.001
Willing to be deployed as long as given job security	5.24 (3.16)	5.49 (3.19) 5.54 (5.26, 5.84)[a]	4.55 (2.97) 4.76 (4.42, 5.10)[a]	0.012	<0.001
Treatment of contract doctor by other agencies/ministries/ departments	1.53 (1.85)	1.43 (1.81) 1.48 (1.29, 1.67)[a]	1.80 (1.94) 2.19 (1.97, 2.41)[a]	0.022	<0.001
Perception of efforts regarding contract system					
• Ministry of Health Malaysia	0.92 (1.52)	0.79 (1.39) 0.75 (0.61, 0.89)[a]	1.29 (1.78) 1.31 (1.14, 1.47)[a]	0.025	<0.001
• Malaysia Government	0.84 (1.43)	0.74 (1.32) 0.72 (0.59, 0.86)[a]	1.14 (1.67) 1.19 (1.03, 1.34)[a]	0.019	<0.001
• Malaysian Medical Association	4.22 (2.91)	4.22 (2.95) 4.31 (4.04, 4.59)[a]	4.23 (2.79) 4.38 (4.06, 4.70)[a]	<0.001	0.600

SD, Standard Deviation
Note: Each question were analysed independently and the results were derived after controling for sociodemographic data such gender, ethnicity, and marital status in the analysis
a Reported adjusted mean and 95% confidence interval (CI)
* Significant p value are bolded, derived from multiple regression models and adjusted using Bonferroni

of contract doctors having two years or less service, while 83.2% of permanent doctors had served more than five years.

Mental Health and Burnout Outcomes

Table II summarizes the validated assessment outcomes with adjusted means and 95% confidence intervals. After adjusting for gender, marital status, and ethnicity, contract doctors demonstrated significantly higher psychological distress across all DASS-21 dimensions compared to permanent doctors: depression (adjusted mean 8.72 [95% CI: 8.18-9.26] vs 6.88 [95% CI: 6.25-7.51]; p<0.00, η^2p=0.018), anxiety (adjusted mean 6.41 [95% CI: 5.96-6.86] vs 4.89 [95% CI: 4.36-5.41]; p<0.001, η^2p=0.018), and stress (adjusted mean 8.74 [95% CI: 8.24-9.23] vs 7.86 [95% CI: 7.28-8.44]; p=0.001, η^2p=0.005).

On the Maslach Burnout Inventory, contract doctors reported significantly higher scores for emotional exhaustion (adjusted mean 32.14 [95% CI: 30.86-33.42] vs 27.18 [95% CI: 25.68-28.68]; p<0.001, η^2p=0.024). and depersonalization (adjusted mean 14.10 [95% CI: 13.41-14.80] vs 11.94 [95% CI: 11.13-12.76]; p<0.001, η^2p=0.015). No significant difference was observed in personal accomplishment (p=0.188).

Quality of life assessment revealed that contract doctors scored lower in physical health (adjusted mean 10.48 [95% CI: 10.30-10.67] vs 11.09[95% CI: 10.87-11.31]; p<0.001, η^2p=0.016), psychological health (adjusted mean 11.50 [95% CI: 11.29-11.70] vs 11.86 [95% CI: 11.63-12.10]; p=0.001, η^2p=0.005), and environmental domain (adjusted mean 12.24 [95% CI: 12.18-12.65] vs 13.11 [95% CI: 12.83-13.38]; p<0.001, η^2p=0.014). The social relationship domain showed no significant between-group difference (p=0.631).

Job Satisfaction and Security Perceptions

Table III demonstrates significant disparities in job satisfaction and security perceptions between contract and permanent doctors. After adjusting for gender, marital status, and ethnicity, contract doctors consistently reported lower satisfaction scores across multiple domains. They expressed significantly lower satisfaction with their medical career (adjusted mean 4.60 [95% CI: 4.37-4.83] vs 5.87 [95% CI: 5.62-6.14]; p<0.001, η^2p=0.048), perception of doctor welfare preservation (adjusted mean 2.71 [95% CI: 2.48-2.93] vs 3.80 [95% CI: 3.54-4.06]; p<0.001, η^2p=0.038), work-life balance (adjusted mean 3.02 [95% CI: 2.79-3.25] vs 3.79 [95% CI: 3.52-4.06]; p<0.001, η^2p=0.018), salary adequacy (adjusted mean 3.43 [95% CI: 3.19-3.68] vs 4.55 [95% CI: 4.26-4.83]; p<0.001, η^2p=0.033), and career progression opportunities (adjusted mean 1.66 [95% CI: 1.43-1.89] vs 5.94 [95% CI: 5.67-6.20]; p<0.001, η^2p=0.358).

Contract doctors also reported greater dissatisfaction with system-related factors, including treatment by

Table IV: Personal Perception (Self-Reporting Questions)

Variables	Total N= 2664 (%)	Contract n= 1966 (%)	Permanent n= 698 (%)	p-value
1) Career Aspirations				
I wish to succeed as a doctor				
Yes	2343 (88.0)	1717 (87.3)	626 (89.7)	0.101*
No/ Don't know	321 (12.0)	249 (12.7)	72 (10.3)	
OR (95% CI), p value		0.8 (0.6, 1.1)	Reference group	0.117#
I am keen to pursue specialization				
Yes	2285 (85.8)	1703 (86.6)	582 (83.4)	0.035*
No/ Don't know	379 (14.2)	263 (13.4)	116 (16.6)	
OR (95% CI), p value		1.3 (1.0, 1.6)	Reference group	0.067#
I am confident about getting into speciality / subspecialty training				
Yes	518 (19.4)	261 (13.3)	257 (36.8)	<0.001*
No/ Don't know	2146 (80.6)	926 (47.1)	174 (24.9)	
OR (95% CI), p value		0.3 (0.2, 0.3)	Reference group	<0.001#
I have external paper qualifications				
Yes	507 (19.0)	299 (15.2)	208 (29.8)	<0.001*
No	2157 (81.0)	1667 (84.8)	490 (70.2)	
OR (95% CI), p value		0.5 (0.4, 0.6)	Reference group	<0.001#
2) Job Security and Satisfaction				
I feel secure in my career				
Yes	396 (14.9)	61 (3.1)	335 (48.0)	<0.001
No/ Don't know	2268 (85.1)	1720 (87.5)	167 (23.9)	
OR (95% CI), p value		0.04 (0.03, 0.05)	Reference group	<0.001#
I am satisfied with current workload/ working hours				
Yes	585 (22.0)	359 (18.3)	226 (32.4)	<0.001
No/ Don't know	2079 (78.0)	1607 (81.7)	472 (67.6)	
OR (95% CI), p value		0.5 (0.4, 0.6)	Reference group	<0.001#
3) Financial Stabilitiy				
Being a doctor is my primary source of income				
Yes	2570 (96.5)	1900 (96.7)	670 (96.0)	0.421
No/ Don't know	94 (3.5)	66 (3.4)	28 (4.0)	
OR (95% CI), p value		1.2 (0.7, 1.8)	Reference group	0.563#
I have enough saving for future				
Yes	165 (6.2)	79 (4.0)	86 (12.3)	<0.001
No/ Don't know	2499 (93.8)	1887 (96.0)	612 (87.7)	
OR (95% CI), p value		0.3 (0.2, 0.4)	Reference group	<0.001#
I can sustain livelihood if I were to be terminated				
Yes	422 (15.8)	304 (15.5)	118 (16.9)	0.370
No	2242 (84.2)	1662 (84.5)	580 (83.1)	
OR (95% CI), p value		0.9 (0.7, 1.2)	Reference group	0.624#
4) Career Mobility and Alternatives				
Change your career choice				
Yes	1100 (41.3)	988 (50.3)	112 (16.0)	<0.001
No	1564 (58.7)	978 (49.7)	586 (84.0)	
OR (95% CI), p value		5.9 (4.7, 7.5)	eference group	<0.001#
I plan to migrate to other country for better job security/ career progression				
Yes	878 (33.0)	721 (36.7)	157 (22.5)	<0.001
No/ Don't know	1786 (67.0)	1245 (63.3)	541 (77.5)	
OR (95% CI), p value		1.9 (1.5, 2.3)	Reference group	<0.001#

*Significant p-value are bolded, derived from Pearson Chi-Square
#Significant p-value are bolded, derived from logistic regression
OR, Odd Ratio; CI, Confidence Interval

agencies/ministries (adjusted mean 1.48 [95% CI: 1.29-1.67] vs 2.19 [95% CI: 1.97-2.41]; p<0.001, η^2p=0.022), Ministry of Health efforts addressing contract issues (adjusted mean 0.75 [95% CI: 0.61-0.89] vs 1.31 [95% CI: 1.14-1.47]; p<0.001, η^2p=0.025), and government handling of the contract system (adjusted mean 0.72 [95% CI: 0.59-0.86] vs 1.19 [95% CI: 1.03-1.34]; p<0.001, η^2p=0.019). They expressed greater reluctance to voice welfare concerns due to job insecurity (adjusted mean 7.12 [95% CI: 6.84-7.40] vs 6.30 [CI: 5.97-6.63]; p<0.001, η^2p=0.014) and higher willingness to be deployed if given job security (adjusted mean 5.54 [95% CI: 5.26-5.84] vs 4.76 [95% CI: 4.42-5.10], p<0.001, η^2p=0.012). Only two domains showed no significant difference between groups: exposure to workplace hazards (p=0.095) and satisfaction with MMA's efforts addressing contract issues (p=0.600).

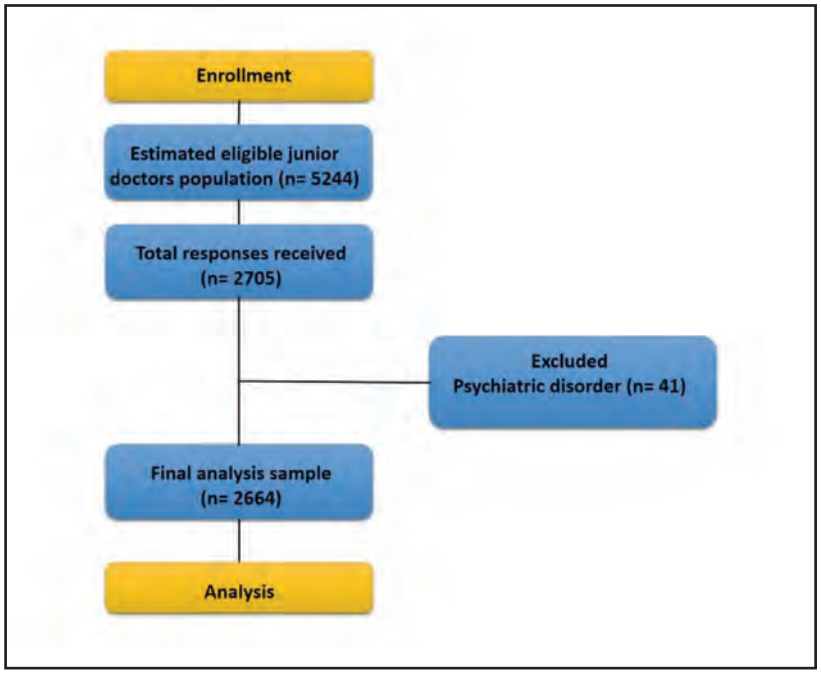

Fig. 1: Demographic Characteristics of Study Respondents

Career Confidence and Future Intentions

Table IV presents findings on personal perceptions organized into four domains that reveal distinct patterns between contract and permanent doctors, with all analyses adjusted for gender, marital status, and ethnicity.

Within the career aspirations domain, both groups similarly aspired to succeed in medicine (87.3% vs. 89.7%, OR 0.8 [95% CI: 0.6-1.1], p=0.117) and pursue specialization (86.6% vs. 83.4%, OR 1.3 [95% CI: 1.0-1.6], p=0.067)). However, contract doctors reported significantly lower confidence in obtaining specialty training (13.3% vs. 36.8%, OR 0.3 [95% CI: 0.2-0.3], p<0.001) and were less likely to possess external qualifications (15.2% vs. 29.8%, OR 0.5 [95% CI: 0.4-0.6], p<0.001).

The job security and satisfaction domain revealed the most striking disparity, with contract doctors significantly less likely to feel secure in their careers (3.1% vs 48.0%, OR 0.04 [95% CI: 0.03-0.05], p<0.001). Contract doctors also reported lower satisfaction with workload and working hours (18.3 vs. 32.4%, OR 0.5 [95% CI: 0.4-0.6], p<0.001).

Despite both groups similarly relying on medical practice as their primary income source (96.7% vs. 96.0%, OR 1.2 [95% CI: 0.7-1.8], p=0.563), the financial stability domain showed that contract doctors were less likely to report having sufficient savings (4.0% vs. 12.3%, OR 0.3 [0.2-0.4], p<0.001). Both groups overwhelmingly reported inability to sustain their livelihood if terminated (84.5% vs. 83.1%, OR 0.9 [95% CI: 0.7-1.2], p=0.624).

These concerns manifested in the career mobility domain, where contract doctors were significantly more likely to consider changing careers (50.3% vs. 16.0%, OR 5.9 [95% CI: 5.9 [4.7-7.5], p<0.001) and contemplating migration for better job security and career progression (36.7% vs. 22.5%, OR 1.9 [95% CI: 1.5-2.3], p<0.001).

Collectively, these findings demonstrate that employment status significantly affects Malaysian junior doctors' career outlook, with contract status associated with greater career uncertainty, financial vulnerability, and consideration of alternative career paths.

DISCUSSION

This national study provides compelling evidence that employment status significantly impacts psychological wellbeing among Malaysian junior doctors. Using validated assessment tools and detailed perception analysis, we identified consistent associations between contract employment and adverse mental health outcomes.

The demographic profile revealed that contract doctors were predominantly younger, earlier in their careers, and more often females compared to their permanent counterparts. This demographic distribution may exacerbate vulnerability to job insecurity effects, as previous research indicates that younger healthcare professionals face elevated risk for job insecurity and its adverse consequences, though associations with gender and socioeconomic status are less consistent.[21,22]

The higher rates of depression, anxiety and stress observed among contract doctors align with broader evidence that perceived job insecurity constitutes a significant risk factor for psychological distress. Meta-analytic findings suggest that job insecurity's impact on mental health may be equal or exceed that of actual unemployment in some contexts.[6,23] Kim & von dem Knesebeck demonstrated that job insecurity

associates with higher risk of depressive symptoms compared to unemployment, with both short and long-term psychological effects.[24] While Theorell et al. found more limited evidence linking job insecurity with depressive symptoms[25], our findings support the growing consensus that insecure work arrangements contribute substantially to psychological distress among healthcare professionals.[26]

The elevated burnout levels among contract doctors, particularly in emotional exhaustion and depersonalization dimensions, are concerning given the global prevalence of burnout among junior doctors (40-50%).[11,27] Our findings parallel those from the United Kingdom, where the 2018 General Medical Council survey identified burnout in nearly 25% of trainees, associated with poor work-life balance, feeling undervalued, inflexible training, and leadership disconnection.[2,28] Our data suggest that employment insecurity may compound these inherent stressors, potentially creating a detrimental cycle where job insecurity increases burnout risk, compromising both patient care quality and professional development.

The stark disparity in career confidence between contract and permanent doctors (3.1% vs 48.0% feeling secure) highlights a critical workforce sustainability challenge. The significantly lower satisfaction with career progression opportunities among contract doctors suggests that employment status affects not only current wellbeing but also long-term career development perspectives. The higher migration intentions among contract doctors (36.7% vs. 22.5%) signals a substantive brain drain risk that could further compromise Malaysia's healthcare capacity and exacerbate workforce shortages.

These findings carry important implications for healthcare workforce planning and policy. The current situation, characterized by widespread job insecurity among junior doctors, threatens both healthcare system sustainability and service quality. Policymakers should implement both immediate interventions to increase permanent positions and long-term structural reforms to address the fundamental mismatch between medical graduate numbers and training infrastructure capacity.

Given the elevated mental health issues among contract doctors, targeted psychological support services should be implemented.[29,30] This might include peer support networks, mentoring programs, regular mental health screening, and early intervention initiatives. To mitigate job insecurity's negative impacts, clear pathways for transitioning from contract to permanent positions, enhanced specialty training opportunities for contract doctors, and structured professional development regardless of employment status are essential. Additionally, addressing factors contributing to burnout–including work-life balance and professional recognition–could partially mitigate job insecurity's negative effects through workload redistribution, improved communication channels, and meaningful recognition programs.

The study's strengths include its large nationwide sample providing robust statistical power, validated assessment instruments, comprehensive domain evaluation, and adjustment for demographic cofounders. To our knowledge, this represents one of the first investigations examining associations between employment status and psychological wellbeing among junior medical doctors during a pivotal career stage when psychosocial stress can significantly influence long-term career trajectories.

Nevertheless, several limitations warrant acknowledgement. First, the use of convenience and snowball sampling introduces potential self-selection bias. Doctors experiencing greater psychological distress may have been more motivated to participate, potentially overestimating the prevalence of adverse outcomes. The inability to determine the exact number of individuals who viewed the survey invitation limits precise response rate calculation, and geographic and professional representativeness could not be ensured. Second, participants with previously diagnosed psychiatric disorders were excluded to focus on work-related factors rather than pre-existing conditions. While this approach was methodologically justified, it may have led to underestimation of the true burden of psychological distress in this population and limits generalizability of findings.

Third, the cross-sectional nature of this study precludes causal inferences regarding the relationship between employment status and psychological outcomes. While we observed significant associations between contractual employment and poor mental health, we cannot determine whether contract status causes these outcomes or whether other unmeasured factors contribute to these differences. Longitudinal studies are needed to elucidate the temporal dynamics of this relationship. Fourth, the use of self-reported measures collected at a single time point introduces potential response bias, social desirability bias, and inability to capture temporal fluctuations in psychological wellbeing and quality of life. Objective measures and repeated assessment would strengthen future investigations.

Fifth, the structural imbalance between contract and permanent groups-where contract doctors are predominantly younger house officers while permanent doctors are exclusively older medical officers- reflects the actual policy implementation in Malaysia. However, we cannot fully disentangle the effects of contractual status from career stage effects. Age, years of service, and job grade could not be included as independent covariates due to perfect multicollinearity with employment status. Sensitivity analyses stratifying by job grade suggest the observed associations persist, but this limitation should be considered when interpreting findings. Finally, for DASS-21 scores, we analyzed continuous scores rather than categorical severity threshold to preserve statistical power and detect subtle differences between groups. While this approach is methodologically sound, future research examining the distribution of severity categories would provide additional clinical context.

Future research should explore potential moderating factors–such as social support networks or individual coping strategies–that may buffer job insecurity's negative effects. Longitudinal studies tracking mental health trajectories

across career transitions would provide valuable insights, as would intervention studies evaluating strategies to mitigate job insecurity's impact on junior doctors' wellbeing.

CONCLUSION

This study provides robust evidence that contract employment status among Malaysian junior doctors associates with poorer mental health outcomes, reduced job satisfaction, and diminished career confidence after adjusting for demographic factors. These findings highlight an urgent need for comprehensive strategies addressing employment security and support mechanisms for contract doctors. The high prevalence of psychological distress and burnout among contract doctors, coupled with elevated migration intentions, suggests that current employment practices may threaten healthcare system sustainability. These findings have implications beyond Malaysia, offering valuable insights for other healthcare systems facing workforce sustainability challenges. Further research and policy development should focus on creating employment models that balance system needs with healthcare workers' well-being and professional development opportunities.

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CONFLICT OF INTEREST

None

REFERENCES

1. Siow SL, Chuah JS, Roslani AC, Mahendran HA, Ratnasingam S, Bujang MA. Factors influencing the psychosocial impact of COVID-19 pandemic on healthcare workers and their level of satisfaction towards organisational efforts. Med J Malaysia 2022; 77(2): 162-8.
2. Forsythe RO, Suttie SA. Enhancing junior doctors' working lives. Surgery (Oxf) 2020; 38(10): 607-11.
3. Greenhalgh L, Rosenblatt Z. Job Insecurity: Toward Conceptual Clarity. Acad Manage Rev 1984; 9(3): 438-48.
4. Hur H. Job security matters: A systematic review and meta-analysis of the relationship between job security and work attitudes. J Manag Organ 2022; 28(5): 925-55.
5. Cheng HLG, Chan DKS. Who suffers more from job insecurity? A meta-analytic review. Appl Psychol 2008;57(2):272-303.
6. Folkman, S. Stress: appraisal and coping. In: Gellman MD, Turner JR, editors. Encyclopedia of Behavioral Medicine. New York: Springer; 2013. p. 1913–5.
7. Sverke M, Hellgren J, Näswall K. No security: A meta-analysis and review of job insecurity and its consequences. J Occup Health Psychol 2002;7(3):242-64.
8. Llosa JA, Menéndez-Espina S, Agulló-Tomás E, Rodríguez-Suárez J. Job insecurity and mental health: a meta-analytical review of the consequences of precarious work in clinical disorders. An Psicol 2018;34(2): 211-23.
9. Zhou AY, Panagioti M, Esmail A, Agius R, Van Tongeren M, Bower P. Factors Associated with burnout and stress in trainee physicians: a systematic review and meta-analysis. JAMA Netw Open 2020; 3(8): e2013761.
10. Tan KH, Lim BL, Foo Z, Tang JY, Sim M, Lee PT, et al. Prevalence of burnout among healthcare professionals in Singapore. Ann Acad Med Singap 2022; 51(7): 409-16.
11. Low ZX, Yeo KA, Sharma VK, Leung GK, McIntyre RS, Guerrero A, et al. Prevalence of burnout in medical and surgical residents: a meta-analysis. Int J Environ Res Public Health. 2019; 16(9):1479.
12. Musa R, Fadzil M, Zain Z. Translation, validation and psychometric properties of the Bahasa Malaysia version of the Depression, Anxiety and Stress Scale (DASS). ASEAN J Psychiatry 2007; 8:82-9.
13. Henry JD, Crawford JR. The short-form version of the Depression Anxiety Stress Scales (DASS-21): construct validity and normative data in a large non-clinical sample. Br J Clin Psychol 2005; 44(2): 227-39.
14. Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. Behav Res Ther 1995; 33(3): 335-43.
15. Maslach C, Jackson SE. The measurement of experienced burnout. J Organ Behav 1981; 2(2): 99-113.
16. Schaufeli WB, Bakker AB, Hoogduin K, Schaap C, Kladler A. on the clinical validity of the Maslach burnout inventory and the burnout measure. Psychol Health 2001; 16(5): 565-582.
17. Wheeler DL, Vassar M, Worley JA, Barnes LLB. A reliability generalization meta-analysis of coefficient alpha for the Maslach Burnout Inventory. Educ Psychol Meas 2011; 71(1): 231-44.
18. Shoesmith WD, Jalani KJ, Abdullah AC, Loo JL, Tan BY, Nordin N, et al. Validation and adaptation of the Malay version of the Maslach Burnout Inventory. IOP Conf Ser Mater Sci Eng 2019; 495(1): 012114.
19. Skevington SM, Lotfy M, O'Connell KA, WHOQOL Group. The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. A report from the WHOQOL group. Qual Life Res 2004; 13(2): 299-310.
20. Hasanah CI, Naing L, Rahman AR. World Health Organization Quality of Life Assessment: brief version in Bahasa Malaysia. Med J Malaysia 2003; 58(1): 79-88.
21. Mosadeghrad AM, Ferlie E, Rosenberg D. A study of relationship between job stress, quality of working life and turnover intention among hospital employees. Health Serv Manage Res 2011; 24(4): 170-81.
22. Ilić IM, Arandjelović MŽ, Jovanović JM, Nešić MM. Relationships of work-related psychosocial risks, stress, individual factors and burnout - Questionnaire survey among emergency physicians and nurses. Med Pr 2017; 68(2): 167-178.
23. Kim TJ, von dem Knesebeck O. Is an insecure job better for health than having no job at all? A systematic review of studies investigating the health-related risks of both job insecurity and unemployment. BMC Public Health 2015; 15: 985.
24. Kim TJ, von dem Knesebeck O. Perceived job insecurity, unemployment and depressive symptoms: a systematic review and meta-analysis of prospective observational studies. Int Arch Occup Environ Health 2016; 89(4): 561-73.
25. Theorell T, Hammarstrom A, Aronsson G, Träskman Bendz L, Grape T, Hogstedt C, et al. A systematic review including meta-analysis of work environment and depressive symptoms. BMC Public Health 2015; 15: 738.
26. Strazdins L, D'Souza RM, Clements M, Broom DH, Rodgers B, Berry HL. Could better jobs improve mental health? A prospective study of change in work conditions and mental health in mid-aged adults. J Epidemiol Community Health 2011; 65(6): 529-34.
27. Toral-Villanueva R, Aguilar-Madrid G, Juárez-Pérez CA. Burnout and patient care in junior doctors in Mexico City. Occup Med (Lond) 2009; 59(1): 8-13.

28. Rimmer A. Employers must tackle high level of burnout among trainees, says GMC. BMJ 2018; 362: k3018.
29. Panagioti M, Panagopoulou E, Bower P, Lewith G, Kontopantelis E, Chew-Graham C, et al. Controlled interventions to reduce burnout in physicians: A systematic review and meta-analysis. JAMA Intern Med 2017; 177(2): 195-205.
30. West CP, Dyrbye LN, Erwin PJ, Shanafelt TD. Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis. Lancet 2016; 388(10057): 2272-81.