ORIGINAL ARTICLE

MENTAL HEALTH STATUS AND PSYCHOSOCIAL JOB DETERMINANT AMONG EMPLOYEES IN A MALAYSIAN HIGHER INSTITUTION DURING THE COVID-19 PANDEMIC

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ABSTRACT

Workplace mental health is becoming significant in higher education. Employment is one of the factors that can impair an employee's mental health, restricting their capacity to function well. This study aimed to assess mental health status among employees in a higher institution in Kuantan and its association with sociodemographic and job characteristics. An online survey was distributed using a random email list from September 2020 to October 2020. The employees were given the validated Malay versions of the Depression, Anxiety and Stress 21 (DASS-21) and the Job Content Questionnaire. Depression, anxiety, and stress were prevalent in 26.5%, 36.2% and 21.3% of these workers, respectively. Individuals who lived alone during the COVID-19 *movement control order reported having stress symptoms (p = 0.04). Job insecurity was linked to anxiety (adjusted odd ratio [AOR] = 4.1, 95% Confidence Interval [CI] = 1.4, 11.71, p = 0.01), whereas employees with poor supervisor support had a significantly increased risk of depression (AOR = 7.4, 95% CI = 1.99, 27.5, p = 0.003), anxiety (AOR = 4.7, 95% CI = 1.15, 13.69, p = 0.03), and stress (AOR = 9.3, 95% CI = 2.09, 41.84, p = 0.003) compared to their counterpart. Our research concluded that this group of employees frequently reported depression, anxiety, and stress. The results also highlight that supervisor support and job security are significantly related to mental health problems. Employee depression, anxiety, and stress may be addressed by policies that encourage better supervisor support and job security.*

Keywords: *employees, depression, anxiety, stress, COVID-19*

INTRODUCTION

Mental health problems such as depression, anxiety and stress in the working population are becoming more prevalent. It has become a public health concern because of the significant underreporting of work-related mental health disorders in the majority of countries. This is particularly important in developing countries such as Malaysia, where work-related mental health issues are generally underreported[1,2]. Policymakers and health professionals are concerned about the association between modern work and mental health problems, particularly in higher education. Higher education institutions may experience changes in their authorities and organisational structure over time as a result of government policy that is impacted by the political environment. These changes may require the employees to embrace new policies and practices, which may increase job demand[3].

Statistically, the prevalence of work stress among employees at higher education institutions globally ranges from 5.5% to 39%[4-6]. In Malaysia, over 21.7% of higher institution employees reported experiencing stress[7], with academicians being the most likely to complain about work-related stress[8]. Depression and anxiety were also reported among employees at higher education institutions. According to Yeshaw and Mossie[5], the overall prevalence of depression and anxiety among university staff in Ethiopia was 22.9% and 19.2%, respectively. In Malaysia, university staff reported a higher prevalence of anxiety (52.9%) and depression (35.4%)[8].

Numerous factors contribute to mental health disorders, including sociodemographic, economical, and organisational factors. Female employees were more likely to experience stress than male employees[8,9]. Women reported being more stressed when their employment commitments clashed with their family relationships[10]. Younger employees demonstrated higher levels of stress and depression than older employees[7,11]. A possible explanation for such a difference is that young employees tend to have problems with emotional regulation, fewer coping strategies, and a lack of experience in dealing with the job demands[12,13]. There was no significant association between marital status and ethnicity with stress. Although workers who were

single and non-Malays reflected higher levels of stress compared to their counterparts[7,8], there are contradicting findings regarding the possibility that being in a long-distance relationship increases interpersonal risk and stress[14,15].

Many countries, including Malaysia, implemented severe measures on citizens during the COVID-19 pandemic, including lockdowns, mobility restrictions, and shelter. Employees would suffer psychologically as a result of these enforcements. Some of them who lived alone reported having anxiety due to the limited movement and being apart from their families[16]. According to a study conducted in China, more than half of residents (53.8%) experienced a moderate or severe psychological impact when staying at home for 20 to 24 hours and expressed concern about family members infected with COVID-19 (75.2 %)[17].

Approximately 23% of academicians in Malaysian higher education institutions experienced high job strain due to a lack of control or autonomy over their work, and psychological demand increased the level of job strain and dissatisfaction[7]. Other research revealed that job strain was also associated with depression and anxiety among employees, which affected their productivity and had a negative impact on their ability to perform their job duties effectively[18]. Unrealistic expectations and increased workload imposed by higher institutional authorities, as well as a lack of support from management and co-workers, may all lead to a higher degree of stress among employees[7,8,19].

If academic staff members are overworked, they will struggle to perform at their best, which will have a negative effect on their students[8]. This situation will also have a detrimental effect on higher education standards. Despite some research has been conducted on academic mental health, there is still data paucity on other members of higher education personnel. It would be beneficial to assess the prevalence of depression, anxiety, and stress among these employees to have a better understanding of their mental health conditions and develop measures to improve their working environment. Thus, this study aims to determine the prevalence of depression, anxiety, and stress among employees at a higher institution in Malaysia, as well as their relationship to sociodemographic characteristics and job content.

METHODS

Study design and population

A cross-sectional study was conducted among employees in a pre-university centre, International Islamic University Malaysia (IIUM) using an online survey via Google form link between September 2020 and October 2020.

Recruitment procedure

A single proportion formula was used to determine the sample size20. A total sample size of 190 workers was calculated by using a 22% estimated prevalence of stress7, a 5% margin of error, a 95% confidence level, and a 20% dropout rate. Academic, technical, and administrative staff aged 18 to 60 were randomly selected from an institutional email list.

Study instrument

The survey instrument was a validated self-administered questionnaire that consists of three parts. Part A covers sociodemographic and socioeconomic factors such as age, gender, citizenship, ethnicity, job position, state of residence, educational attainment, smoking status, household income, marital status, long-distance relationship status, living conditions during Movement Control Order (MCO), psychological or counselling support during the MCO, and distress associated with COVID-19 infection.

Part B was related to the validated Malay version of the Job Content Questionnaire (JCQ)[21] measuring Job Skill Discretion, Decision-making Authority, Decision Latitude, Co-worker Support, Supervisor Support and Job Insecurity. Most questions were measured or scored on a Likert scale ranging from 1 to 4 (strongly disagree, disagree, agree and strongly agree). All variables and outcome measures were calculated using the formula for Job Content instrument scale construction provided. The formula used for each psychological work exposure variable is listed below:

Tabel 1: The formula used for each psychological work exposure variable

Job skill discretion = [q1 + q3 + q5 + q7 + q9 + 5 - q2] x 2.	12-48
Job decision-making authority = [2 (q4 + q6 + q8)] x 2.	12-48
Job demands = 3 (q10 + q11) + 2(15 - q12 - q13 - q14).	12-48
Co-worker support = q16 + q17 + q18 + q19.	4-16
Supervisor support = q20 + q21 + q22 + q23.	4-16
Job insecurity = q24 + q25 + q26 + 5 - q15.	3-12
Job decision latitude = skill discretion + decision-making authority	24-96

Part C includes a validated Malay translation of the Depression, Anxiety, and Stress Scale-21 (DASS-21)[22]. The instrument comprises 21 items that encompassed three subscales; depression, anxiety and stress. Seven items represent each subscale and each item has a score range of 0 to 3, which indicates how much the statement applied to the participant over the past week. For this research, those who scored more than the normal range were categorised to have psychological distress. The normal range scores for depression, anxiety, and stress were ≤ 9, ≤ 7, and ≤14, respectively. The DASS-21 is not designed to diagnose depression, anxiety, or stress disorders, but rather to evaluate the severity of the essential symptoms of these conditions.

Statistical analysis

Data were analysed using R software version 4.2.0. All categorical data were measured using frequency and percentage. For bivariate analysis, the association between categorical variables was analysed using the chi-square test and Fisher exact test. A multiple logistic regression model using the Enter method was used to determine the factors associated with depression, anxiety and stress symptoms. The magnitude of the standard error (SE) for each independent variable was employed to test for multicollinearity. Multicollinearity issues were absent if the SEs were between 0.001 and 5.0[23]. The statistical significance level was set at a p-value < 0.05.

Ethical consideration

The study protocol, procedures, information sheet, and consent statement were all approved by the Kulliyyah Research Committee, International Islamic University Malaysia (IIUM) (ref no.: IIUM/305/20/4/1/7). Participation in this study was voluntary, and participants provided informed consent.

RESULTS

A total of 102 employees responded to the survey, thus reflecting a response rate of 53.7%. Respondents' sociodemographic characteristics are presented in Table 2. All the respondents were Malay while the majority were females (72.5%) and more than 35 years old (52%). More than half of the respondents were academicians (60.8%) with a higher degree of qualification. About a quarter of them were single (23.5%) whereas about three-quarters (75.5%) were married. Approximately 45.5% of the married couples were in a long-distance relationship while another 54.5% lived together. The majority of respondents in a long-distance relationship (40%) lived alone, while 34.3% and 25.7% lived with their housemates and other family members, respectively. While 71% of them travelled to meet their spouse weekly, 28.6% met their spouse frequently. The majority of them (91.2 %) were non-smokers and were under the M40 household income category (below MYR 4,850). A higher proportion (88.2%) of respondents lived with family members throughout the MCO period, whereas 11.8% lived with housemates or alone. The majority of them (85.3%) expressed concern about being infected with COVID-19 or through family members.

Table 3 depicts the prevalence of depression, anxiety and stress symptoms were 26.5%, 34.3% and 20.6%, respectively. The association between sociodemographic characteristics and depression, anxiety, and stress symptoms is summarized in Tables 3A and 3B. Resultantly, those who lived alone during the MCO period were significantly associated with stress symptoms (57.1%, p = 0.04). Meanwhile, no significant association was observed between other sociodemographic factors such as gender, age, position, educational level, monthly income, smoking, marital status, long-distance relationships, or residential area.

After adjusting for possible associated factors, the multiple logistic regression models revealed the significant job determinants of depression, anxiety and stress symptoms among the employees (Table 5). A significant relationship was detected between job demand and anxiety. Employees who felt insecure in their current position were 4.1 (95% CI = 1.4, 11.71, p = 0.01) times more likely to suffer from anxiety. Additionally, supervisor support was also associated with depression, anxiety and stress. Employees who received inadequate support from their supervisors had a significantly increased risk of depression (AOR = 7.4, 95% CI = 1.99, 27.5, p = 0.003), anxiety (AOR = 4.7, 95% CI = 1.15, 13.69, p = 0.03), and stress (AOR = 9.3, 95% CI = 2.09, 41.84, p = 0.003) compared to employees who received adequate support from their supervisors.

Table 2a: Sociodemographic characteristics of the respondent

Characteristics	n	Percentage (%)
Gender		
Male	28	27.5
Female	74	72.5
Age (years)		
<35	49	48
≥35	53	52
Position		
Academic	62	60.8
Technical and Administration	40	39.2

Table 2b: Sociodemographic characteristics of the respondent

Characteristics	n	Percentage (%)
Educational level		
Secondary	7	6.9
College/University	95	93.1
Marital status		
Single	24	23.5
Married	77	75.5
Divorcee	1	1
Long-distance relationship (LDR) status, if married (n=77)		
Yes	35	45.5
No	42	54.5
Living condition, if LDR (n=35)		
Alone	14	40
With housemate	12	34.3
Other family members	9	25.7
Frequency meeting spouse, if LDR (n=35)		
Weekly	25	71.4
Fortnightly	9	25.7
Monthly	1	2.9
Smoking status		
Smoker	9	8.8
Non-smoker	93	91.2
Monthly household income (MYR)*		
B40	25	24.5
M40	57	55.9
T20	20	19.6
Living during the MCO period		
Family members	90	88.2
Housemate	5	4.9
Alone	7	6.9
Are you worried you or your family are infected with COVID-19?		
Yes	87	85.3
No	15	14.7

* *B40, M40, and T20 represent percentages of the country's population of Bottom 40%, Middle 40%, and Top 20% respectively. B40: <MYR 4,850; M40: 4,850 – 10,959; T20: > 10,959* [24].

Table 3: Prevalence of depression, anxiety and stress

Characteristics	n	Percentage (%)
Depression		
Yes	27	26.5
No	75	73.5
Anxiety		
Yes	35	34.3
No	67	65.7
Stress		
Yes	21	20.6
No	81	79.4

Table 4a: Association between sociodemographic factors and depression, anxiety and stress

Characteristics	Depression				Anxiety				Stress			
	Yes n (%)	No n (%)	χ^2	p-value	Yes n (%)	No n (%)	χ^2	p-value	Yes n (%)	No n (%)	χ^2	p-value
Gender												
Male	7(25)	21(75)	0.043	0.836	8(28.6)	20(71.4)	0.565	0.452	6(21.4)	22(78.6)	0.017	0.897
Female	20(27)	54(73)			27(36.5)	47(63.5)			15(20.3)	59(79.7)		
Age (years)												
<35	12(24.5)	37(75.5)	0.19	0.663	16(32.7)	33(67.3)	0.115	0.734	7(14.3)	42(85.7)	2.291	0.13
≥35	15(28.3)	38(71.7)			19(35.8)	34(64.2)			14(26.4)	39(73.6)		
Position												
Academic	17(27.4)	45(72.6)	0.073	0.787	24(38.7)	38(61.3)	1.355	0.244	15(24.2)	47(75.8)	1.257	0.262
Technical & Administrative	10(25)	30(75)			11(27.5)	29(72.5)			6(15)	34(85)		
Education level												
Secondary	1(14.3)	6(85.7)	0.672†	>0.05	3 (42.9)	4(57.1)	0.689†	>0.05	1(14.3)	6(85.7)	1†	>0.05
College/University	26(27.4)	69(72.6)			32(33.7)	63(66.3)			20(21.1)	75(78.9)		
Marital status												
Single	9(37.5)	15(62.5)	0.407†	>0.05	9(37.5)	15(62.5)	0.665†	>0.05	5(20.8)	19(79.2)	0.49†	>0.05
Married	18(23.4)	59(76.6)			26(33.8)	51(66.2)			16(20.8)	61(79.2)		
Divorcee	0(0)	1(100)			0(0)	1(100)			0(0)	1(100)		
Long-distance relationship (n=77)												
Yes	11(31.4)	24(68.6)	2.323	0.128	15(42.9)	20(57.1)	2.371	0.128	10(28.6)	25(71.4)	2.367	0.124
No	7(16.7)	35(83.3)			11(26.2)	31(73.8)			6(14.3)	36(85.7)		
Living condition (n=35)												
Alone	5(35.7)	9(64.3)	0.546†	0.812	8(57.1)	6(42.9)	2.738	0.254	6(42.9)	8(57.1)	2.232	0.367
With housemate	4(33.3)	8(66.7)			3(25)	9(75)			2(16.7)	10(83.3)		
Other families	2(22.2)	7(77.8)			4(44.4)	5(55.6)			2(22.2)	7(77.8)		
Frequency meeting spouse (n=35)												
Weekly	7(28)	18(72)	1.393†	0.606	10(40)	12(60)	1.407†	0.693	5(20)	20(80)	4.465†	0.118
Fortnightly	4(44.4)	5(55.6)			5(55.6)	4(44.4)			5(55.6)	4(44.4)		
Monthly	0(0)	1(100)			0(0)	1(100)			0(0)	1(100)		
Smoking status												
Smoker	3(33.3)	6(66.7)	0.696†	>0.05	2(22.2)	7(77.8)	0.715†	>0.05	3(33.3)	6(66.7)	0.386†	>0.05
Non-smoker	24(25.8)	69(74.2)			33(35.5)	60(64.5)			18(19.4)	75(80.6)		

** p<0.05 is significant; †Fisher exact test*

Table 4b: Association between sociodemographic factors and depression, anxiety and stress

Characteristics	Depression				Anxiety				Stress			
	Yes n (%)	No n (%)	χ^2	p-value	Yes n (%)	No n (%)	χ^2	p-value	Yes n (%)	No n (%)	χ^2	p-value
Monthly household income (MYR)												
B40	6(24)	19(76)	0.933	0.627	8(32)	17(68)	2.756	0.253	2(8)	23(92)	3.212	0.201
M40	14(24.6)	43(75.4)			17(29.8)	40(70.2)			14(24.6)	43(75.4)		
T20	7 (35)	13 (65)			10 (50)	10 (50)			5 (25)	15 (75)		
Living during the MCO period												
Alone	4(57.1)	3(42.9)	3.451†	0.142	5(71.4)	2(28.6)	4.466†	0.104	4(57.1)	3(42.9)	5.434†	0.042*
Family member	22(24.4)	68(75.6)			29(32.2)	61(67.8)			16(17.8)	74(82.2)		
Housemate	1(20)	4(80)			1(20)	4(80)			1(20)	4(80)		
Are you worried you or your family get infected?												
Yes	23(26.4)	64(73.6)	1†	>0.05	30 (34.5)	57(65.5)	0.007	0.931	20(23)	67(77)	0.296	>0.05
No	4(26.7)	11(73.3)			5(33.3)	10(66.7)			1(6.7)	14(93.3)		

** p<0.05 is significant; †Fisher exact test*

Table 5: Association between job characteristics with depression, anxiety and stress

Variables	Depression†					Anxiety‡					Stress§				
	B	Wald	AOR‖	95% CI	p-value	B	Wald	AOR‖	95% CI	p-value	B	Wald	AOR‖	95 % CI	p-value
Decision latitude	0.85	0.22	2.34	0.76-7.24	0.14	0.99	3.59	2.69	0.97-7.46	0.06	0.55	0.83	1.74	0.53-5.74	0.36
High (ref)															
Low															
Job demands	0.83	1.87	2.29	0.69-7.55	0.17	0.11	0.04	1.12	0.37-3.39	0.85	0.29	0.18	1.34	0.35-5.12	0.67
High (ref)															
Low															
Co-worker Support	0.3	0.15	1.35	0.29-6.37	0.7	-0.04	0.003	0.96	0.24-3.91	0.96	-0.81	0.91	0.45	0.09-2.35	0.34
High (ref)															
Low															
Supervisor support	2	8.9	7.39	1.99-27.5	0.003*	1.38	4.77	3.97	1.15-13.69	0.03*	2.24	8.58	9.37	2.09-41.84	0.003*
High (ref)															
Low															
Job insecurity	0.44	0.59	1.56	0.5-4.82	0.44	1.4	6.69	4.05	1.4-11.71	0.01*	0.95	2.15	2.59	0.73-9.21	0.14
Low (secure)(ref)															
High (insecure)															

**Significant (p<0.05), †Nagelkerke R Square was 0.28. This implies that only 28% of the variation in this study was explained by this model. ‡Nagelkerke R Square was 0.26. This implies that only 26% of the variation in this study was explained by this model. §Nagelkerke R Square was 0.3. This implies that only 30% of the variation in this study was explained by this model. ref: reference group*

‖ = Adjusted Odds Ratio; adjusted for age, gender, education, household income, smoking status, job position, marital status and COVID-19 worried

DISCUSSION

The results from the present study highlighted a high prevalence of anxiety (36.2%), depression (26.5%), and stress (21.3%) symptoms among the respondents. These findings are similar to a previous study conducted among Ethiopian workers in higher institutions in which the prevalence of depression, anxiety and stress were 22.9%, 19.2%, and 28.2%, respectively5. In comparison to Malaysian university staff, the prevalence of stress (21.3%) in the present study agrees with the previous report from the research university in Klang Valley (22.1%)8. The prevalence of depression in our study was also nearly identical to a study conducted in Malaysian public universities11,25. However, a lower prevalence of anxiety was observed among employees attending a university hospital clinic on the east coast of Malaysia in comparison to the present study26. They observed a 14.3% prevalence of anxiety, based on the 14-item of Hospital Anxiety and Depression Scale. The difference in the assessment tool used by Othman and Yahya26, compared to the current study (DASS-21) might explain the contradicting results.

There was no significant association between sociodemographic factors and depression, anxiety and stress in our study. However, those workers who were living alone during the COVID-19 pandemic movement control demonstrated significant stress symptoms compared to their counterparts. Living alone during the COVID-19 pandemic was reported in previous studies to be significantly associated with higher stress levels compared to those living with their family members27,28. Living alone is usually considered to increase loneliness, which leads to a stressful life. Meanwhile, living with family or other people provides a better source of potential emotional and social support29,30. The significant association between stress and living alone during the COVID-19 pandemic lockdown revealed that prolonged confinement or quarantine could cause negative impacts on physical and psychological well-being17,31.

Social support from a work community, whether supervisor or co-worker, has been a critical component of the worker's health and well-being32. As a result, the present study discovered a substantial relationship between supervisor support and mental health. Employees who reported inadequate supervisor support were more likely to feel depression, anxiety, and stress. This significant finding could be explained by the recent changes in organisational working conditions due to the COVID-19 crisis. Workers require substantial supervisor support at this stage to alleviate their uncertainties and ambiguities about the organisation and their social conditions33. Evidence from previous research has demonstrated that social support plays a role in preventing harmful mental health repercussions. For instance, inadequate supervisor assistance has been linked to depression, anxiety, and stress in university workers7,34. Thus, it is critical to ensure that supervisors provide adequate support in preventing workers' mental health problems3.

Job insecurity was found to be significantly associated with anxiety in this study, which corroborates previous research reporting a positive relationship between job insecurity and anxiety problems35,36. The fear of job loss, particularly during the COVID-19 crisis, could account for the significant finding in our study. The crisis creates uncertainty for university workers in different ways, including the risk that the institution will have to reduce its human resource management workforce as a result of financial constraints. Temporary employees may experience greater anxiety than permanent employees, as they are not guaranteed job security within the organisation37. Although this variable was not considered in the present study, it should be thoroughly monitored in the future to ascertain the relationship between job instability and the worker's mental health according to contract types.

There are a few limitations in this study which need to be addressed when interpreting the result. One of the limitations is that causal inference cannot be concluded in this cross-sectional study. Besides, the total response rate of 53.7% may not fully represent all university employees given that an online survey was utilised. Increase workload and work exhaustion following the onset of the pandemic while conducting this survey might be the possible reason for the employees' response rate. Nevertheless, the response rate in this study is considerably higher than in previous studies that used online surveys38,39. In our effort to increase the response rate, the respondents received two email reminders within the subsequent week. Additionally, an online survey is a preferable tool for data collection during the pandemic to avoid close contact with other people. Other limitations include the shorter timeframe of one week to evaluate symptoms using the DASS-21, which might lead to biased results. A longer timeframe, on the other hand, may dilute the average degree of symptom intensity for those whose symptoms have worsened in the last week40. However, the DASS-21 and JCQ data were collected concurrently. It is also possible that the symptoms of depression, anxiety, and stress in the current study do not occur in isolation but rather coexist.

CONCLUSION

In conclusion, this study revealed that university employees are susceptible to depression, anxiety, and stress symptoms during the COVID-19 pandemic. It also highlighted that employees' mental health status was significantly associated with job security and supervisor support. The role

of supervisor support is essential to minimise university employees' job uncertainties and emotional distress during a challenging situation, such as the COVID-19 pandemic. It can be accomplished by urging higher-level management to encourage supervisors of all work departments to provide the necessary support to address their employees' issues. We believe that our findings will have significant management and institutional policy implications for intervening in psychosocial employment aspects affecting employees' mental health.

ACKNOWLEDGEMENT

The authors would like to express their gratitude to the International Islamic University Malaysia employees for their participation in this study.

Conflict of interest

The authors declare that they have no conflict of interest

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