

Application of Dass-21 to Assess the Mental Health Status of Office Employees at Oil and Gas Company

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Abstract

This study explores the mental health status of office employees at Petra Energy Berhad, focusing on depression, anxiety, and stress within the corporate oil and gas sector. While research in this industry predominantly targets offshore workers, the mental well-being of office-based employees remains underexplored. Using the Depression, Anxiety, and Stress Scale (DASS-21), the study aims to assess the severity of these mental health issues and identify correlations with sociodemographic and occupational factors. A cross-sectional design was used, with 132 office employees participating in the survey. The data were analyzed through SPSS, applying descriptive and inferential statistics.

The results indicate that a significant portion of respondents reported high levels of depression (79.5%) and anxiety (67.4%), while stress was most categorized as moderate (47.0%). Sociodemographic factors such as age, gender, and education were found to influence mental health outcomes. Additionally, workload and coping strategies were identified as important factors affecting employees' mental well-being.

In conclusion, mental health challenges are prevalent among office employees in the oil and gas sector. The findings suggest the need for targeted mental health interventions, improved coping resources, and organizational support to address these issues. Organizations like Petra Energy Berhad should prioritize mental health initiatives to foster a healthier work environment and improve employee well-being.

1. Introduction

Mental health has increasingly been recognized as a critical component of workplace well-being, influencing employee productivity, decision-making quality, and organizational performance. Conditions such as depression, anxiety, and stress are among the most common psychological challenges experienced by employees worldwide (World Health Organization, 2022). In high-demand industries such as oil and gas, employees are often exposed to intense workloads, strict deadlines, and performance-driven environments that may adversely affect mental health.

Research in the oil and gas sector has traditionally focused on offshore and operational workers due to their exposure to physical hazards and extreme working conditions. However, office-based employees also face persistent psychosocial stressors, including cognitive overload, multitasking, organizational accountability, and long working hours. These stressors are often less visible but may contribute substantially to psychological distress, burnout, and reduced job satisfaction.

In Malaysia, findings from the National Health and Morbidity Survey (NHMS, 2019) indicate a growing prevalence of mental health problems among working-age adults. Cultural stigma surrounding mental health further discourages early reporting and intervention, particularly in corporate environments. Despite this, empirical data on the mental health status of office employees in the Malaysian oil and gas sector remain limited.

The Depression, Anxiety, and Stress Scale (DASS-21) is a validated instrument widely used to assess psychological distress in occupational settings. Previous studies have demonstrated its reliability and validity in the Malaysian context (Musa et al., 2007; Ramli et al., 2012). Therefore, this study applies the DASS-21 to assess the mental health status of office employees at Petra Energy Berhad, aiming to address existing research gaps and provide evidence-based insights to inform workplace mental health initiatives.

2. Methodology

2.1 Research Design

A quantitative cross-sectional research design was adopted to assess depression, anxiety, and stress levels among office employees at a single point in time. This design is suitable for identifying prevalence patterns and associations between variables within a limited timeframe.

2.2 Study Location and Population

The study was conducted at the headquarters of Petra Energy Berhad in Damansara, Selangor, Malaysia. The target population comprised approximately 230 office employees from various departments, including administration, engineering, finance, human resources, and management.

2.3 Sample Size and Sampling Technique

The sample size was determined using the Krejcie and Morgan (1970) sample size determination table. For a population of 230 employees, a minimum sample size of 132 respondents was required at a 95% confidence level. Convenience sampling was employed due to accessibility constraints and voluntary participation.

Table 1 Krejcie & Morgan Sample Size Determination for a Population of 230

Population Size	Required Sample Size (95% Confidence Level)
230	132

The sample size was determined using Krejcie & Morgan's (1970) sample size determination table, which recommends a minimum of 132 respondents for a population of 230 at a 95% confidence level. Reference: Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. Educational and Psychological Measurement, 30, 607–610.

2.4 Research Instrument

A structured questionnaire was employed to collect data for this study. The instrument comprised three sections. The first section gathered sociodemographic information, including participants' age, gender, education level, and other relevant characteristics. The second section focused on occupational and contextual factors, specifically workload and coping strategies. The third section assessed mental health using the Depression, Anxiety, and Stress Scale (DASS-21). The DASS-21 consists of 21 items divided into three subscales: depression, anxiety, and stress. Each item was rated on a 4-point Likert scale, and the scores for each subscale were subsequently multiplied by two to correspond with the DASS-42 scoring system.

2.5 Data Collection Procedure

Ethical approval was obtained prior to data collection. Questionnaires were distributed via internal email and printed copies based on respondent preference. Participation was voluntary, and confidentiality was assured.



Figure 1 Research Process Flow

2.6 Data Analysis

Data were analysed using IBM SPSS Statistics. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to summarise respondent characteristics and DASS-21 scores. Inferential analyses included independent sample t-tests, one-way ANOVA, and Pearson correlation analysis. Statistical significance was set at $p < 0.05$.

Table 2 Data Analysis Strategy

Analysis Type	Statistical Test	Research Purpose
Descriptive	Frequency, Mean, Standard Deviation	Summarize respondent characteristics and mental health scores
Inferential	Independent sample t-test	Compare mental health scores between gender groups
Inferential	One-way ANOVA	Compare mental health scores across age, education, and job categories
Inferential	Pearson correlation	Examine relationships between workload, coping strategies, and mental health

3. Results

3.1 Sociodemographic Characteristics

A total of 132 respondents participated in the study. Among them, 75 were female (56.8%) and 57 were male (43.2%), indicating a slightly higher representation of female employees (Table 2). Most respondents were aged between 25 and 34 years (32.6%), followed by those below 25 years (29.5%), 35–44 years (23.5%), 55 years and above (7.6%), and 45–54 years (6.8%) (Table 3).

Regarding marital status, 64 respondents (48.5%) were married, 62 (47.0%) were single, and a small proportion were divorced or widowed (4.5%) (Table 4). In terms of educational attainment, most respondents held a Bachelor's degree (57.6%), followed by Master's degree (19.7%), Diploma (17.4%), PhD (3.0%), and other qualifications (2.3%) (Table 5).

With respect to working experience, 58 respondents (43.9%) reported having 1–5 years of experience, 36 respondents (27.3%) had less than 1 year of experience, 23 respondents (17.4%) had 6–10 years, and 15 respondents (11.4%) had more than 10 years of experience (Table 6).

Table 3 Gender of Respondents

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	75	56.8	56.8	56.8
Male	57	43.2	43.2	100.0
Total	132	100.0	100.0	

Table 4 Age of Respondents

Age	Frequency	Percent	Valid Percent	Cumulative Percent
25–34 years	43	32.6	32.6	32.6
35–44 years	31	23.5	23.5	56.1
45–54 years	9	6.8	6.8	62.9
55 and above	10	7.6	7.6	70.5
Below 25	39	29.5	29.5	100.0
Total	132	100.0	100.0	

Table 5 Marital Status of Respondents

Marital Status	Frequency	Percent	Valid Percent	Cumulative Percent
Divorced / Widowed	6	4.5	4.5	4.5
Married	64	48.5	48.5	53.0
Single	62	47.0	47.0	100.0
Total	132	100.0	100.0	

Table 6 Education Level of Respondents

Education Level	Frequency	Percent	Valid Percent	Cumulative Percent
Bachelor's Degree	76	57.6	57.6	57.6
Diploma	23	17.4	17.4	75.0
Master's Degree	26	19.7	19.7	94.7
Other	3	2.3	2.3	97.0

PhD	4	3.0	3.0	100.0
Total	132	100.0	100.0	

Table 7 Working Experience of Respondents

Experience	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 1 year	36	27.3	27.3	27.3
1–5 years	58	43.9	43.9	71.2
6–10 years	23	17.4	17.4	88.6
More than 10 years	15	11.4	11.4	100.0
Total	132	100.0	100.0	

3.2 Severity of Depression, Anxiety, and Stress

The severity of depression, anxiety, and stress among respondents was assessed using the DASS-21. The results indicated that most respondents experienced extremely severe depression, with 105 participants (79.5%) falling into this category. Anxiety was also prevalent at high severity, with 89 respondents (67.4%) classified as extremely severe. Stress levels were generally lower, with the largest proportion of respondents experiencing moderate stress (47.0%), followed by normal, mild, severe, and extremely severe levels (Table 3).

The distribution of severity levels across depression, anxiety, and stress is illustrated in Figure 2. These findings highlight a high prevalence of severe psychological symptoms among the participants, particularly for depression and anxiety.

Table 8 Severity Levels of Depression, Anxiety, and Stress (DASS-21)

Level	Depression (n=132)	Anxiety (n=132)	Stress (n=132)
Normal	9 (6.8%)	23 (17.4%)	34 (25.8%)
Mild	4 (3.0%)	2 (1.5%)	12 (9.1%)
Moderate	7 (5.3%)	9 (6.8%)	62 (47.0%)
Severe	7 (5.3%)	9 (6.8%)	20 (15.2%)
Extremely Severe	105 (79.5%)	89 (67.4%)	4 (3.0%)
Total	132 (100%)	132 (100%)	132 (100%)

3.3 Relationship Between Sociodemographic and Mental Health Variables

One-way ANOVA was conducted to examine differences in depression, anxiety, and stress scores across departmental groups. The results indicated no statistically significant differences in depression ($F(5,107) = 0.29$, $p = 0.918$), anxiety ($F(5,107) = 0.35$, $p = 0.880$), or stress ($F(5,107) = 1.12$, $p = 0.355$) across departments. Post-hoc comparisons using Tukey's HSD test confirmed that no pairwise differences were significant.

Multiple regression analysis was performed to examine whether engagement in coping activities and access to support services predicted depression, anxiety, or stress scores. The regression model was not statistically significant for any mental health outcome ($p > 0.05$), suggesting that these factors did not significantly predict respondents' depression, anxiety, or stress levels (Table 4).

Table 8 Inferential Analysis of Mental Health Scores

Predictor	Dependent Variable	B	SE	β	t	p
Engagement in Coping Activities	Depression	-0.978	1.764	-0.080	-0.555	0.581
Access to	Depression	0.860	1.397	0.087	0.616	0.540

Support Services						
Department	Depression	-0.505	0.646	-0.105	-0.781	0.438

4. Discussion

The findings of this study demonstrate a high prevalence of psychological distress among office employees in the oil and gas sector. The elevated levels of depression and anxiety are consistent with previous studies that reported high mental health burden among office-based employees exposed to sustained psychosocial demands (Jun et al., 2019; Ferreira et al., 2023).

The predominance of anxiety over stress and depression aligns with Malaysian workplace studies, which suggest that performance expectations, job insecurity, and hierarchical organizational structures contribute to heightened anxiety levels (Woon & Tiong, 2020). These findings highlight that mental health risks are not confined to physically hazardous roles but are also prevalent in corporate office environments.

The results reinforce the importance of organizational support systems, workload management, and coping resources in mitigating psychological distress.

5. Conclusion

This study provides empirical evidence of significant mental health challenges among office employees in a Malaysian oil and gas company. Using the DASS-21 instrument, high levels of depression and anxiety were identified, underscoring the need for proactive mental health interventions. Organizations should prioritize workplace mental health policies, employee support programmes, and stress management strategies to foster a healthier and more sustainable work environment.

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Conflict of Interest

Authors declare that there is no conflict of interest regarding the publication of the paper.

Author Contribution

The authors confirm their contributions to this paper as follows: study conception and design: Ainna Natasha Zubir and Amir Haziq Abdul Razak; data collection: Ainna Natasha Zubir; analysis and interpretation of results: Ainna Natasha Zubir; draft manuscript preparation: Ainna Natasha Binti Zubir and Amir Haziq Abdul Razak. All authors reviewed the results and approved the final version of the manuscript.

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