

Differences in Depression, Anxiety, and Stress Scores Across Workload Categories Among Nurses Working at Community Health Centers in Metro City, Lampung Province

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ABSTRACT:

Background: Increasing workloads among nurses working at community health centers, driven by high service demands and limited staffing, may adversely affect mental health, particularly symptoms of depression, anxiety, and stress.

Objective: To examine differences in depression, anxiety, and stress scores across workload categories among nurses working at community health centers administered by the Metro City Health Office.

Methods: This cross-sectional study was conducted from November 2025 to July 2026 at 11 community health centers. A total of 55 nurses were recruited using purposive sampling. Workload was assessed using the National Aeronautics and Space Administration Task Load Index (NASA-TLX), whereas depression, anxiety, and stress were measured using the Depression Anxiety Stress Scale-21 (DASS-21). Data were analyzed using descriptive statistics and the Kruskal-Wallis test, with statistical significance set at $p < 0.05$.

Results: Most respondents had a high workload (60.0%). The largest proportions of respondents were classified as normal for depression (49.1%), anxiety (54.5%), and stress (83.6%). The Kruskal-Wallis test showed significant differences in depression ($p = 0.006$), anxiety ($p = 0.001$), and stress ($p = 0.040$) scores across workload categories. The high-workload group had the highest mean ranks for depression (33.27), anxiety (34.67), and stress (32.26).

Conclusion: Depression, anxiety, and stress scores differed significantly across workload categories, with the highest mean ranks observed among nurses in the high-workload category. Equitable workload distribution and accessible psychosocial support are needed to protect nurses' mental health and maintain the quality of healthcare services.

KEYWORDS: anxiety, community health center, depression, nurses, stress, workload.

INTRODUCTION

Community health centers are primary healthcare facilities that serve as frontline providers of health promotion, disease prevention, curative care, and rehabilitation services. Nurses play a central role in these facilities because, in addition to providing direct nursing care, they implement numerous public health programs, including immunization, maternal and child health services, nutrition improvement, communicable disease control, and noncommunicable disease management (Ministry of Health of the Republic of Indonesia, 2018). As healthcare services become increasingly complex and national program targets expand, the occupational demands placed on community health center nurses continue to increase. This challenge is compounded by an inequitable distribution of healthcare personnel relative to service needs, thereby increasing individual workloads (Ministry of Health of the Republic of Indonesia, 2023). The World Health Organization (WHO, 2022) has emphasized that demanding working conditions can adversely affect health workers' mental health.

High workload affects not only productivity and service quality but also the physical and psychological well-being of healthcare workers. Saptono et al. (2022) reported that more than half of community health center personnel experienced a high mental workload. Excessive workload increases the risk of physical fatigue, sleep disturbances, hypertension, and chronic



exhaustion (Tarwaka, 2015). These effects may reduce the ability of healthcare workers to perform their duties optimally and may compromise patient satisfaction and service quality. Workload is therefore an important determinant of effective primary healthcare delivery.

The psychological consequences of excessive workload among healthcare workers have been widely documented. Priyatna et al. (2021) found that 68.7% of community health center personnel experienced occupational stress and 16.7% experienced anxiety. A study by Melyana et al. (2021) in Bandar Lampung similarly reported that 40.2% of healthcare workers experienced anxiety, 25.6% experienced stress, and 14.6% experienced mild depression. These findings are consistent with WHO (2022), which identifies high job demands as an important risk factor for anxiety and depression among healthcare workers. Such mental health problems affect not only individuals but may also increase burnout and turnover intentions, reduce job satisfaction, and compromise the quality of care provided to the community.

The relationship between workload and mental health can be explained using Karasek's Job Demand-Control model (Karasek, 1979). This model proposes that the combination of high job demands and low decision latitude increases the risk of psychological strain. The model is highly relevant to Indonesian primary healthcare, where nurses are expected to manage clinical services while simultaneously meeting public health program targets, often with limited control over staffing, patient volume, and work processes. Workload may therefore be related not only to stress but also to depression and anxiety, three interrelated dimensions of mental health.

This issue is also evident in Metro City, Lampung Province. Metro City has a population of approximately 180,000 and combines urban and rural characteristics, resulting in increasingly diverse public health needs (Statistics Indonesia, Metro City, 2025). Nurses at community health centers in Metro City provide direct patient care while implementing national priority programs stipulated in Regulation of the Minister of Health of the Republic of Indonesia No. 19 of 2024 concerning community health centers. A preliminary survey conducted in 2025 found that 45.4% of 11 healthcare workers reported anxiety-related symptoms, including worry, restlessness, difficulty concentrating, reduced work motivation, emotional exhaustion, and feelings of hopelessness. Verdalen Hasan (2024) reported that 51.6% of healthcare workers in Metro City had a high workload, while Syafira (2024) found that 43.6% of nurses experienced a heavy workload and 53.8% experienced severe burnout. These findings suggest that high workloads may adversely affect the psychological well-being of healthcare workers in Metro City.

Although numerous studies have examined workload and mental health among healthcare workers, most have focused on a single psychological outcome, such as stress or burnout, and have predominantly involved hospital-based personnel. Studies simultaneously examining depression, anxiety, and stress scores across workload categories among nurses in primary healthcare facilities remain limited, particularly in Metro City. This study addresses this research gap by concurrently assessing workload using the National Aeronautics and Space Administration Task Load Index (NASA-TLX) and depression, anxiety, and stress using the Depression Anxiety Stress Scale-21 (DASS-21) among community health center nurses.

This study therefore aimed to examine differences in depression, anxiety, and stress scores across workload categories among nurses working at community health centers administered by the Metro City Health Office. The findings are expected to strengthen empirical evidence on the mental health of primary healthcare workers and support local authorities and community health center managers in developing more effective human resource policies through equitable workload distribution, appropriate staffing, and sustained psychosocial support. Ultimately, these measures may improve both healthcare worker well-being and the quality of services delivered to the community.

METHODS

This cross-sectional study was conducted from November 2025 to July 2026 at 11 community health centers administered by the Metro City Health Office. The study population comprised 72 nurses, of whom 55 female nurses were recruited using purposive sampling. Eligibility criteria included providing clinical or public health services, being actively employed at the time of data collection, and being able to communicate effectively. Nurses who were on leave, were not actively working, were receiving psychiatric treatment, or submitted incomplete questionnaires were excluded. Primary data were collected using a questionnaire on



participant characteristics, the NASA-TLX to assess workload across six dimensions (mental demand, physical demand, temporal demand, performance, effort, and frustration), and the DASS-21 to assess depression, anxiety, and stress. Secondary data were obtained from community health center profiles and health workforce records maintained by the Metro City Health Office.

Descriptive analyses were used to summarize participant characteristics, workload categories, and mental health outcomes as frequencies and percentages. Before inferential analysis, the distributions of depression, anxiety, and stress scores were assessed using the Kolmogorov-Smirnov test and were found to be non-normal ($p < 0.05$). Consequently, Kruskal-Wallis tests were used to examine differences in depression, anxiety, and stress scores across workload categories. A two-sided $p < 0.05$ was considered statistically significant. Ethical approval was granted by the Research Ethics Committee of the Faculty of Medicine, Universitas Lampung (No. 1348/UN26.18/PP.05.02.00/2026; April 1, 2026).

RESULTS

Participant Characteristics

The characteristics of the 55 study participants are presented in Table 1.

Table 1. Participant characteristics

Variable	n	%
Age		
<25 years	1	1.8
26-30 years	9	16.4
31-35 years	5	9.1
36-40 years	20	36.4
41-45 years	11	20.0
>45 years	9	16.4
Marital status		
Married	49	89.1
Single	6	10.9
Educational level		
Diploma	24	43.6
Bachelor's degree	28	50.9
Professional nursing qualification	2	3.6
Postgraduate degree	1	1.8
Length of employment		
<1 year	4	7.3
1-5 years	6	10.9
6-10 years	20	36.4
11-15 years	11	20.0
16-20 years	9	16.4
>20 years	5	9.1
Total	55	100.0

Most participants were 36-40 years old (36.4%), were married (89.1%), held a bachelor's degree in nursing (50.9%), and had worked for 6-10 years (36.4%).

Distribution of Workload, Depression, Anxiety, and Stress

The frequency distributions of workload, depression, anxiety, and stress are shown in Table 2.

Table 2. Distribution of workload, depression, anxiety, and stress

Variable	n	%
Workload		
Low	3	5.5
Moderate	19	34.5
High	33	60.0
Depression		
Normal	27	49.1
Mild	9	16.4
Moderate	14	25.5
Severe	3	5.5
Extremely severe	2	3.6
Anxiety		
Normal	30	54.5
Mild	9	16.4
Moderate	11	20.0
Severe	3	5.5
Extremely severe	2	3.6
Stress		
Normal	46	83.6
Mild	5	9.1
Moderate	3	5.5
Severe	1	1.8
Extremely severe	0	0.0
Total	55	100.0

Most respondents had a high workload (33; 60.0%). For mental health outcomes, the largest proportions were classified as normal for depression (27; 49.1%), anxiety (30; 54.5%), and stress (46; 83.6%). Nevertheless, some respondents experienced symptoms ranging from mild to extremely severe.

Differences in Depression, Anxiety, and Stress Scores Across Workload Categories

The results of the Kruskal-Wallis analyses are presented in Table 3.

Table 3. Differences in depression, anxiety, and stress scores across workload categories

Outcome	Workload category	n	Mean rank	p-value
Depression	Low	3	11.17	0.006
	Moderate	19	21.50	
	High	33	33.27	
Anxiety	Low	3	11.67	0.001
	Moderate	19	19.00	
	High	33	34.67	
Stress	Low	3	17.17	0.040
	Moderate	19	22.32	
	High	33	32.26	

Depression scores differed significantly across workload categories ($p = 0.006$). The high-workload group had the highest mean rank (33.27), followed by the moderate-workload group (21.50) and the low-workload group (11.17). These results indicate that higher workload categories were accompanied by higher depression scores.

Anxiety scores also differed significantly across workload categories ($p = 0.001$). The high-workload group had the highest mean rank (34.67), followed by the moderate-workload group (19.00) and the low-workload group (11.67). These results indicate that higher workload categories were accompanied by higher anxiety scores.

Stress scores likewise differed significantly across workload categories ($p = 0.040$). The high-workload group had the highest mean rank (32.26), followed by the moderate-workload group (22.32) and the low-workload group (17.17). These results indicate that higher workload categories were accompanied by higher stress scores.

DISCUSSION

1. Workload and the Distribution of Depression, Anxiety, and Stress

Most nurses in this study had a high workload (60.0%), while 34.5% had a moderate workload and 5.5% had a low workload. The high workload may reflect the number of health programs, high patient volume, limited staffing, and the combined demands of health promotion, disease prevention, curative care, rehabilitation, and administrative responsibilities. This finding is consistent with Karasek's Job Demand-Control model, which proposes that high demands combined with limited control increase psychological strain (Karasek, 1979). It is also consistent with Saptono et al. (2022), who found that more than half of community health center nurses experienced a high mental workload; Handayani and Rahayu (2019), who linked increased nursing workload to high patient volume and administrative duties; and Verdalen Hasan (2024), who reported that 51.6% of nurses in Metro City experienced a high workload. WHO (2022) has further emphasized that high job demands and insufficient organizational support can adversely affect healthcare workers' mental health.

Although the largest proportion of respondents was classified as normal for depression, 50.9% experienced symptoms ranging from mild to extremely severe. Persistent service demands, emotional exhaustion, and the complexity of care may contribute to depressive symptoms. This interpretation is consistent with Karasek's Job Demand-Control model (Karasek, 1979), with Melyana et al. (2021), who reported mild-to-moderate depression among healthcare workers in Bandar Lampung, and with Schneider et al. (2021), who found a substantially greater risk of depression among healthcare workers with a high workload.

For anxiety, 54.5% of respondents were classified as normal, while 45.5% experienced symptoms ranging from mild to extremely severe. Anxiety may arise from service demands, time pressure, the risk of clinical errors, and responsibility for patient safety. Spielberger (2010) conceptualized anxiety as an emotional response to situations perceived as threatening. The present findings are consistent with Lai et al. (2020), who reported a higher prevalence of anxiety among healthcare workers exposed to intense occupational pressure, and Priyatna et al. (2021), who identified service pressure and limited resources as important sources of anxiety among community health center workers.

For stress, 83.6% of respondents were classified as normal, while 16.4% experienced mild-to-severe symptoms. This suggests that most nurses retained adequate coping capacity, although a subgroup remained vulnerable to work-related stress. Lazarus and Folkman (1984) proposed that stress occurs when perceived demands exceed an individual's coping resources. This finding is supported by Priyatna et al. (2021), who reported that community health center workers are vulnerable to stress under high service demands, and Soemarmo et al. (2022), who emphasized that persistent occupational stress may progress to burnout and impair service quality.

Overall, the high workload observed among nurses at community health centers in Metro City was accompanied by symptoms of depression, anxiety, and stress in a considerable proportion of respondents. More equitable workload distribution, adequate staffing, and accessible psychosocial support are therefore needed to protect nurses' mental health and sustain service quality.

2. Differences in Depression Scores Across Workload Categories

The study identified a significant difference in depression scores across workload categories. Higher workload categories were accompanied by higher depression scores. High patient volume, administrative responsibilities, public health program implementation, and service targets may generate prolonged physical and psychological pressure, leading to emotional exhaustion, reduced motivation, and feelings of helplessness associated with depression.

This finding is consistent with Karasek's Job Demand-Control model (Karasek, 1979), which suggests that high demands coupled with low control increase the risk of psychological problems, including depression. Hobfoll's conservation of resources theory (Hobfoll, 1989) further proposes that continued loss of psychological resources, such as energy, time, and emotional support, increases vulnerability to depression. Lazarus and Folkman (1984) similarly argued that prolonged work pressure in the absence of effective coping may lead to psychological exhaustion and subsequently to depressive symptoms.

The present findings are also consistent with Schneider et al. (2021), who reported that healthcare workers with a high workload had a two- to threefold greater risk of depression than those with a low workload; Rachmawati et al. (2021), who observed moderate-to-severe depression among community health center nurses exposed to high workload; and Handayani et al. (2020), who found that high workload was significantly related to psychological strain among primary healthcare workers.

The Kruskal-Wallis analysis showed that the high-workload group had the highest mean rank for depression (33.27), followed by the moderate-workload group (21.50) and the low-workload group (11.17). These findings reinforce the need for equitable task distribution, additional nursing personnel, and psychosocial support to prevent mental health problems and maintain the quality of primary healthcare.

3. Differences in Anxiety Scores Across Workload Categories

Anxiety scores differed significantly across workload categories, with higher workload categories accompanied by higher anxiety scores. High patient volume, time constraints, administrative workload, and responsibility for clinical decision-making may produce persistent worry, tension, and fear of making errors during service delivery.

This finding is consistent with Karasek's Job Demand-Control model (Karasek, 1979), which links high job demands and low control to psychological strain, including anxiety. Spielberger (2010) described anxiety as an emotional response to circumstances perceived as exceeding an individual's capacity to cope. Lazarus and Folkman (1984) likewise proposed that anxiety emerges when individuals appraise environmental demands as exceeding their coping resources; prolonged exposure may impair concentration, reduce care quality, and increase the risk of burnout.

Previous studies support these findings. Putri et al. (2020) reported a significant relationship between workload and anxiety among community health center personnel. Lai et al. (2020) found a greater prevalence of anxiety among healthcare workers exposed to intense job pressure. These findings support the importance of appropriate workload management and a supportive work environment.

The high-workload group had the highest mean rank for anxiety (34.67), followed by the moderate-workload group (19.00) and the low-workload group (11.67). Workload management, organizational support, and psychosocial services should therefore be prioritized to reduce anxiety and maintain healthcare quality.

4. Differences in Stress Scores Across Workload Categories

Stress scores differed significantly across workload categories, with higher workload categories accompanied by higher stress scores. High service demands, implementation of multiple programs, staffing limitations, and administrative duties may expose nurses to continuous pressure and increase their vulnerability to physical and emotional exhaustion.

This finding supports the Job Demand-Control model (Karasek, 1979), which proposes that high job demands combined with limited control cause psychological stress. In primary healthcare, nurses face intense demands but often have limited ability to control patient numbers, program targets, and work pace. Lazarus and Folkman (1984) further explained that stress occurs when



individuals perceive environmental demands as exceeding their coping resources, such that prolonged occupational pressure increases the likelihood of stress.

The findings are also consistent with Priyatna et al. (2021), who reported occupational stress among 68.7% of community health center personnel due to high service demands; Hidayat et al. (2021), who reported a greater risk of stress among nurses with high workload; and Saptono et al. (2022), who linked high mental workload to greater occupational stress.

The high-workload group had the highest mean rank for stress (32.26), followed by the moderate-workload group (22.32) and the low-workload group (17.17). WHO (2022) has emphasized that intense job pressure and insufficient recovery time may lead to chronic stress, reduced concentration and productivity, poorer service quality, and burnout. Effective workload distribution, adequate staffing, psychosocial support, and stress-management programs are therefore essential to protect nurses' mental health and maintain the quality of community health center services.

CONCLUSION

Depression ($p = 0.006$), anxiety ($p = 0.001$), and stress ($p = 0.040$) scores differed significantly across workload categories among nurses working at community health centers administered by the Metro City Health Office. Higher workload categories were consistently accompanied by higher depression, anxiety, and stress scores. These findings underscore workload as an important factor in nurses' mental health. More effective workload management, equitable distribution of nursing personnel, and sustained psychosocial support are needed to protect nurses' mental health and improve the quality of primary healthcare services.

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Cite this Article: Ikhtiarini, L., Susianti, Zuraida, R., Rengganis Wardani, D.W.S., Kurniawan, B. (2026). Differences in Depression, Anxiety, and Stress Scores Across Workload Categories Among Nurses Working at Community Health Centers in Metro City, Lampung Province. International Journal of Current Science Research and Review, 9(7), pp. 3993-4000. DOI: <https://doi.org/10.47191/ijcsrr/V9-i7-41>