

Original Article

Workplace Stress and Mental Health Among Healthcare Workers in Abuja, Nigeria

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ABSTRACT

Introduction: Workplace stress among healthcare workers is a major occupational and public-health concern, yet post-pandemic evidence from Nigerian tertiary hospitals remains limited. This study assessed perceived stress, psychological distress and workplace stressors among healthcare workers in Abuja, Nigeria.**Methods:** A cross-sectional descriptive study was conducted among 340 clinical healthcare workers in two public tertiary hospitals. Perceived stress, psychological distress and workplace stressors were measured using PSS-10 and GHQ-12. Data were analysed using descriptive statistics, Spearman correlation and the Kruskal-Wallis test.**Results:** Respondents were predominantly male (57.1%) and nurses/midwives formed the largest cadre (28.2%). The mean perceived-stress score was 25.5 ± 2.88 ; 36.2% reported high perceived stress and 63.8% reported moderate stress. Probable psychological distress was common (80.6%; mean score 18.0 ± 3.1). Lack of essential equipment or supplies was the most frequently reported stressor (82.1% sometimes/often/always; mean 1.66 ± 0.9). Perceived stress was not significantly correlated with psychological distress (Spearman correlation coefficient = -0.031, $p = 0.565$). Only fear of litigation was significantly associated with higher perceived stress (Spearman correlation coefficient = 0.285, $p = 0.01$).**Conclusion:** Healthcare workers reported elevated perceived stress, with organisational and resource-related conditions frequently reported. Probable psychological distress was common and was not correlated with perceived stress. Interventions should target equipment and staffing shortages, medico-legal support and staff-wellbeing systems.**Keywords:** Occupational Stress; Health Personnel; Mental Health; Cross-Sectional Studies; Nigeria

Introduction

Workplace stress is one of the most pressing occupational-health challenges facing health systems worldwide [1]. The World Health Organization identifies occupational stress as a major threat to the productivity, safety, and mental well-being of health personnel, particularly in high-pressure hospital environments [2]. Hospital workers are repeatedly exposed to long hours, heavy patient loads, emotional demands, and unpredictable clinical situations, all of which heighten vulnerability to psychological distress [3].

Evidence from high-income settings shows elevated rates of anxiety, burnout, and depression among clinical staff exposed to sustained work pressure [4,5]. In many low- and middle-income countries, the burden is often heavier because health systems contend with limited resources, understaffing, inadequate equipment, and weak organisational support [6,7]. Sub-Saharan African studies reinforce this pattern: high emotional exhaustion and burnout have been documented among health providers in South Africa [8], Kenya [9], Ghana [10,11], and Rwanda [12].

In Nigeria, overcrowded facilities, high patient-to-staff ratios, chronic understaffing, and frequent exposure to life-threatening situations create fertile ground for work-related stress [13,14]. Nigerian studies report intense mental pressure arising from inadequate work tools, limited institutional support, workplace violence, and chronic fatigue, with high burnout

documented among health workers [14,13]. The COVID-19 pandemic further magnified these pressures [15].

Despite this, empirical research within Nigerian public tertiary hospitals (especially in Abuja, which concentrates federal referral institutions with exceptionally high patient inflows) remains scarce. Few studies examine perceived stress and psychological distress together using standardized instruments in the post-pandemic period. This study therefore assessed perceived stress, psychological distress, and workplace stressors among healthcare workers in two public tertiary hospitals in Abuja, and examined the relationship between workplace stress and mental-health outcomes. Specifically, it sought to (i) determine the level of perceived stress, (ii) evaluate psychological distress, (iii) identify the workplace stressors associated with stress, and (iv) assess the relationship between workplace stress and mental-health outcomes overall and across hospitals and cadres.

The study was framed by the Job Demand–Control (JDC) model [16], which holds that strain arises when high job demands combine with low decision latitude, and the Effort–Reward Imbalance (ERI) model [17], which holds that strain arises when high effort is not matched by adequate reward. Together these models are well suited to resource-constrained settings where heavy demands, limited autonomy, low remuneration, and weak recognition frequently coexist.

Materials and Methods

Study Design and Setting

A cross-sectional descriptive design was used. The study was conducted in two public tertiary hospitals in Abuja, the Federal Capital Territory of Nigeria: Hospital A and Hospital B. Both are large referral facilities offering emergency, surgical, obstetric, paediatric, laboratory, pharmacy, and intensive-care services to diverse patient populations. Because the design captures data at a single time point, all associations are interpreted as correlational rather than causal.

Study Population and Sampling

The study population comprised clinical healthcare workers directly involved in patient care (doctors, nurses/midwives, pharmacists, and laboratory scientists/technicians) who had worked for at least six months in the selected hospitals. Interns, personnel on leave, and non-clinical administrative staff were not eligible. The required sample size was estimated using Cochran's formula (95% confidence level, 50% assumed prevalence, 5% margin of error) with finite-population correction for the combined staff

population, and a non-response allowance was added. Proportionate stratified sampling was applied by hospital, followed by selection of eligible clinical workers within each facility. A total of 340 completed questionnaires were obtained and analysed.

Measures

Data were collected using a structured, interviewer-administered questionnaire comprising sociodemographic and work-profile items, a workplace-stressor scale, the Perceived Stress Scale (PSS-10), and the 12-item General Health Questionnaire (GHQ-12).

Workplace stressors were assessed using 12 items covering staffing, equipment, working hours, workplace relationships, exposure to infection or violence, remuneration, patient death or suffering, role ambiguity, pressure from limited resources, fear of litigation, work-life imbalance, and political interference. Responses were recorded as Never, Rarely, Sometimes, Often, and Always. For frequency reporting, the five response categories were retained. For mean-score analysis, responses were collapsed into

four ordinal levels and coded from 0 to 3, with higher scores indicating more frequent exposure to the stressor.

Perceived stress was measured using the Perceived Stress Scale (PSS-10) developed by Cohen et al. [21]. Scores ranged from 0 to 40, with higher scores indicating greater perceived stress. Scores were categorised as low stress (0-13), moderate stress (14-26), and high stress (27-40) [22].

Psychological distress was assessed using the General Health Questionnaire (GHQ-12). The GHQ-12 is a 12-item instrument developed to identify the presence of possible psychological stress disorders among a population. Responses are scored on a likert scale ranging from 0 to 3, and summed to produce a total score ranging from 0 to 36. Higher scores indicated greater psychological distress. For descriptive classification, respondents were classified as having probable psychological distress using threshold of ≥ 16 [20].

Both instruments, the PSS-10 and GHQ-12 are extensively validated and widely used to assess perceived stress and psychological distress in healthcare populations [18].

Data Collection and Ethical Considerations

Eligible workers were approached through their clinical units. The study purpose, the voluntary nature of participation, confidentiality, and the expected time commitment were explained before enrolment. Ethical approval and institutional permission were obtained prior to data collection. Participation was voluntary and respondents could decline or withdraw without penalty. No personal identifiers were recorded, and all results are reported in aggregate.

Data Analysis

The data collected were analyzed in SPSS version 27, and visualization was done in Python version 3.14. Frequencies and percentages summarised categorical variables; means and standard deviations summarised the PSS-10, GHQ-12, and workplace-stressor scores. The continuous GHQ-12 Likert score was used for mean-score and correlation analysis, while the GHQ-12 classification was reported descriptively using the operational cut-off applied in the analysis. Because the continuous scores departed from normality and showed restricted range, non-parametric methods were used: Spearman's rank correlation examined the relationship between perceived stress and psychological distress (overall and within each hospital), the association between individual stressors and perceived stress was tested with Spearman correlation, and differences in psychological distress across professional cadres were tested with the Kruskal-Wallis test. Statistical significance was set at $p < 0.05$. Because the continuous scores departed from normality and showed restricted range, non-parametric methods were used. Spearman's rank correlation examined the relationship between perceived stress and psychological distress overall and within each hospital, while Spearman correlation tested the associations between individual workplace stressors and perceived stress. The Kruskal-Wallis test assessed differences in psychological-distress scores across professional cadres, and the Mann-Whitney U test assessed differences in perceived-stress and psychological-distress scores between the two hospitals. Statistical significance was set at $p < 0.05$.

Results

Sociodemographic Characteristics

A total of 340 healthcare workers participated. Males constituted a slightly higher proportion of respondents (57.1%) than females (42.9%). The age distribution was relatively balanced, with the largest group aged 20–29 years (29.1%). Slightly more respondents were drawn from Hospital A (53.8%) than

Hospital B (46.2%). Across professional cadres, nurses/midwives formed the largest group (28.2%), followed by laboratory scientists/technicians (26.2%), doctors (23.8%), and pharmacists (21.8%). Weekly working hours were distributed fairly evenly across categories (Table 1).

Table 1. Sociodemographic characteristics of respondents (n = 340)

Characteristic	Frequency (n)	Percentage (%)
Gender		
Male	194	57.1
Female	146	42.9
Age group (years)		
20–29	99	29.1
30–39	69	20.3
40–49	79	23.2

Characteristic	Frequency (n)	Percentage (%)
50 and above	93	27.4
Marital status		
Single (never married)	89	26.2
Married	135	39.7
Divorced/Separated	43	12.6
Widowed	30	8.8
Cohabiting	43	12.6
Highest educational qualification		
Diploma/Certificate	103	30.3
Bachelor's degree	129	37.9
Postgraduate degree	76	22.4
Doctorate	32	9.4
Hospital affiliation		
Hospital A	183	53.8
Hospital B	157	46.2
Professional cadre		
Doctor (Consultant/Resident)	81	23.8
Laboratory Scientist/Technician	89	26.2
Nurse/Midwife	96	28.2
Pharmacist	74	21.8
Weekly working hours		
Less than 40	93	27.4
40–59	82	24.1
60–79	79	23.2
80 or more	86	25.3

Abbreviations: Hospital A and Hospital B indicate the two public tertiary hospitals in Abuja included in the blinded manuscript.

Perceived Stress

The mean perceived-stress score was 25.5 ± 2.88 (range 19.0–34.0), indicating a generally elevated level

of perceived stress. No respondent fell in the low band; 217 (63.8%) reported moderate perceived stress and 123 (36.2%) reported high perceived stress (Table 2).

Table 2. Perceived stress level of respondents

	Range	Mean $\pm$ SD
Perceived Stress Score (PSS-10)	19.0 – 34.0	25.5 ± 2.88
Perceived Stress Level	Frequency (n)	Percentage (%)
Moderate	217	63.8
High	123	36.2

Abbreviation: PSS-10, Perceived Stress Scale.

Psychological Distress

The mean GHQ-12 score was 18.0 ± 3.1 (range 6–27). On GHQ-12 classification, a large majority (80.6%, $n = 274$) of the respondents were classified as

having probable psychological distress, while only 66 (19.4%) were classified as having no significant distress (Table 3).

Table 3. Mental-health status of respondents (General Health Questionnaire)

	Range	Mean $\pm$ SD
GHQ-12 Score	6 – 27	18.0 ± 3.1
GHQ-12 Classification	Frequency (n)	Percentage (%)
No significant distress	66	19.4
Probable psychological distress	274	80.6

Abbreviation: GHQ-12, 12-item General Health Questionnaire.

Workplace Stressors

Workplace stressors were frequently reported across the listed factors, with most respondents reporting each stressor sometimes, often, or always (Figure 1). Lack of essential equipment or supplies was the most frequently reported stressor: 82.1% indicated that it occurred sometimes, often, or always, and it

recorded the highest mean score (1.66 ± 0.9). This was followed by dealing with patient death or suffering (1.63 ± 0.8), long working hours and inadequate rest (1.61 ± 0.8), and fear of litigation (1.61 ± 0.9). Conflict with colleagues or supervisors recorded the lowest mean score (1.56 ± 0.9) among the listed stressors (Table 4).

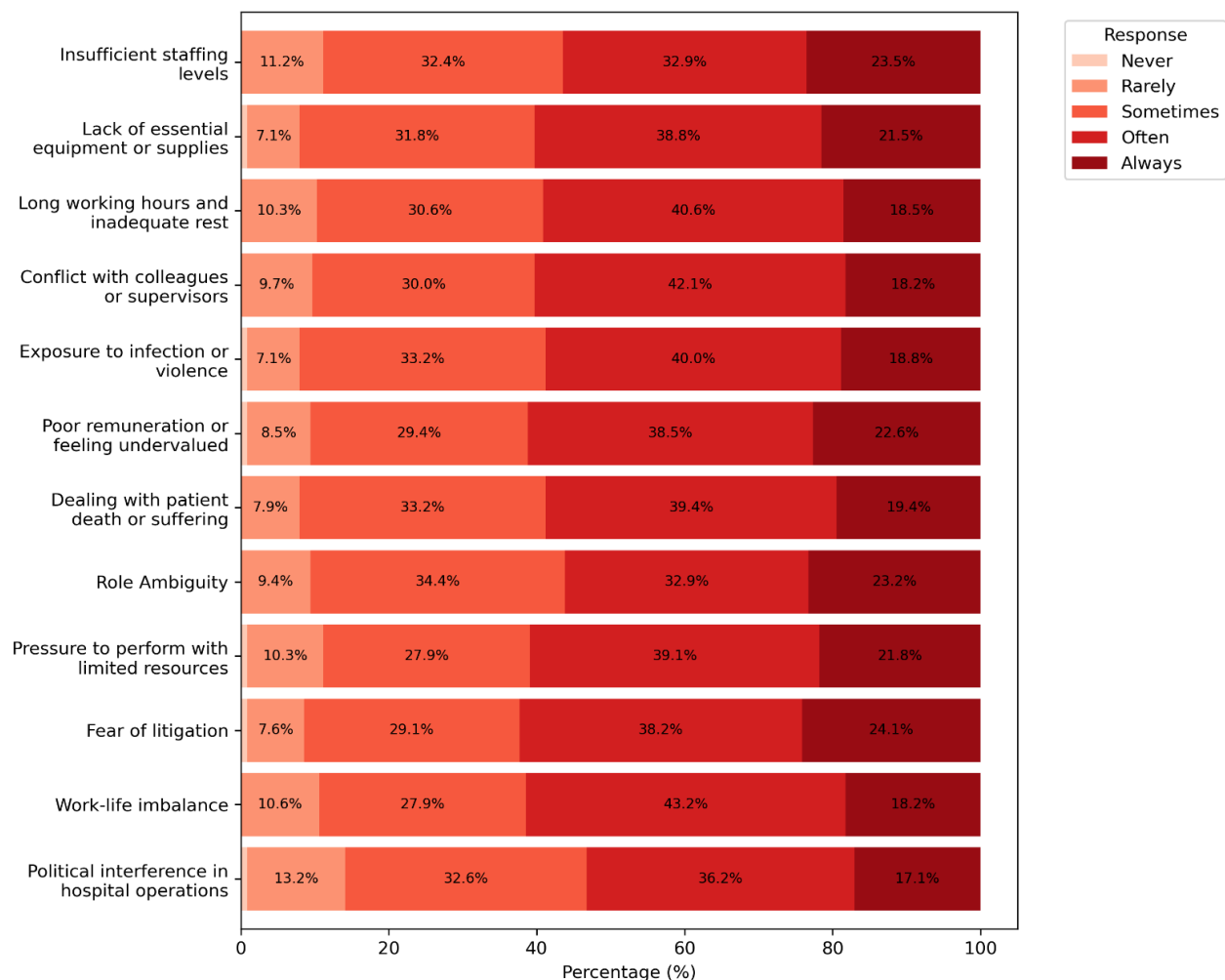


Figure 1. Stacked bar chart showing the frequency distribution of reported workplace stressors.

Table 4. Workplace-stressor scores

Workplace stressor	Range	Mean $\pm$ SD
Insufficient staffing level	0 – 3	1.59 ± 0.9
Lack of essential equipment or supplies	0 – 3	1.66 ± 0.9
Long working hours and inadequate rest	0 – 3	1.61 ± 0.8
Conflict with colleagues or supervisors	0 – 3	1.56 ± 0.9
Exposure to infection or violence	0 – 3	1.57 ± 0.8
Poor remuneration or feeling undervalued	0 – 3	1.60 ± 0.9
Dealing with patient death or suffering	0 – 3	1.63 ± 0.8
Role ambiguity	0 – 3	1.59 ± 0.9
Pressure to perform with limited resources	0 – 3	1.57 ± 0.9
Fear of litigation	0 – 3	1.61 ± 0.9
Work–life imbalance	0 – 3	1.58 ± 0.9
Political interference in hospital operations	0 – 3	1.60 ± 0.9

Relationship Between Perceived Stress and Mental Health

There was no significant correlation between respondents' perceived stress and their mental-health outcomes ($r_s = -0.031$, $p = 0.565$) (Table 5).

Table 5. Spearman correlation between perceived stress and mental-health outcomes

	r_s	p-value
PSS-10 $\times$ GHQ-12	-0.031	0.565

Abbreviations: GHQ-12, 12-item General Health Questionnaire; PSS-10, Perceived Stress Scale; r_s , Spearman rank correlation coefficient.

Psychological Distress Across Professional Cadres

Psychological-distress scores did not differ significantly across professional cadres ($H = 6.128$, $p =$

0.106). Mean scores were highest among nurses/midwives (18.3 ± 3.2) and lowest among doctors (17.6 ± 3.2), but these differences were not statistically significant (Table 6).

Table 6. Kruskal-Wallis test of professional cadre on mental-health status

Professional cadre	Mean $\pm$ SD	H	p-value
Doctor (Consultant/Resident)	17.6 $\pm$ 3.2	6.128	0.106
Laboratory Scientist/Technician	18.2 $\pm$ 3.1		
Nurse/Midwife	18.3 $\pm$ 3.2		
Pharmacist	17.8 $\pm$ 2.7		

Abbreviations: GHQ-12, 12-item General Health Questionnaire; H, Kruskal-Wallis test statistic.

Association Between Specific Stressors and Perceived Stress

Of the individual workplace stressors examined, only fear of litigation showed a statistically significant positive association with perceived stress (r_s

$= 0.285$, $p = 0.01$), indicating that higher perceived fear of litigation was associated with higher stress. The remaining stressors tested were not significantly associated with perceived stress (Table 7).

Table 7. Association between selected workplace stressors and perceived stress

Workplace stressor	r_s	p-value
Insufficient staffing levels	0.047	0.678
Long working hours and inadequate rest	-0.033	0.768
Conflict with colleagues or supervisors	-0.032	0.778
Fear of litigation	0.285	0.01
Political interference in hospital operations	0.129	0.251

Abbreviation: r_s , Spearman rank correlation coefficient.

Relationship by Hospital Affiliation

Within each hospital, perceived stress was not significantly correlated with psychological distress: Hospital A ($r_s = -0.068$, $p = 0.358$) and Hospital B ($r_s = 0.013$, $p = 0.872$) (Table 8). Mann-Whitney U testing also

showed no significant differences between Hospital A and Hospital B in psychological-distress scores ($U = 13,921.0$, $p = 0.621$) or perceived-stress scores ($U = 13,126.5$, $p = 0.168$) (Table 9).

Table 8. Spearman correlation between workplace stress and mental health by hospital

Hospital	r_s	p-value
Hospital A	-0.068	0.358

Hospital	r_s	p-value
Hospital B	0.013	0.872

Abbreviation: r_s , Spearman rank correlation coefficient.

Table 9: Mann-Whitney U test of differences in psychological-distress and perceived-stress scores by hospital affiliation

	Hospital A (Mean $\pm$ SD)	Hospital B (Mean $\pm$ SD)	U	p-value
Psychological-distress score	18.1 $\pm$ 3.0	17.9 $\pm$ 3.2	13921.0	0.621
Perceived stress score	25.3 $\pm$ 2.7	25.8 $\pm$ 3.1	13126.5	0.168

Discussion

This study examined perceived stress, psychological distress and workplace stressors among 340 healthcare workers in two public tertiary hospitals in Abuja and assessed the relationship between stress and mental-health outcomes. Three findings stand out: perceived stress was markedly elevated, probable psychological distress was common based on the classification used in this study, and perceived-stress scores were not significantly correlated with psychological-distress scores. Fear of litigation was the only individual workplace stressor significantly associated with perceived stress.

Elevated Perceived Stress

More than a third of respondents (36.2%) reported high perceived stress and the remainder moderate stress, with none in the low band and a mean PSS-10 score of 25.5 ± 2.88 . This indicates a broadly stressed workforce and is consistent with evidence that hospital work in resource-limited settings involves high patient loads, emotional strain, and constrained resources [6,7]. It also echoes Nigerian and sub-Saharan African reports of substantial occupational stress among health workers [14,11]. Within the JDC and ERI frameworks, the near-universal presence of moderate-to-high stress is consistent with an environment combining high demands, limited control, and weak reward structures.

High Prevalence Of Probable Psychological Distress and the Lack of Correlation with Perceived Stress

A large majority of respondents (80.6%) were classified as having probable psychological distress using the operational GHQ-12 cut-off applied in this study, with a mean score of 18.0 ± 3.1 . This finding indicates a substantial burden of psychological distress among healthcare workers in the two hospitals. It is consistent with previous research showing that demanding working conditions, emotional strain, inadequate organisational support, and prolonged exposure to workplace pressures can adversely affect the mental health of healthcare professionals [12,19]. Evidence from Rwanda has similarly linked

demanding healthcare environments with staff burnout [12], while research on hospital workers has highlighted the influence of the work environment and coping strategies on mental and emotional health [19].

Although probable psychological distress and perceived stress were both common, perceived-stress scores were not significantly correlated with psychological-distress scores, either overall ($r_s = -0.031$, $p = 0.565$) or within either hospital. The absence of a significant correlation does not diminish the high occurrence of either outcome. Rather, it indicates that individual PSS-10 and GHQ-12 scores did not vary together consistently. One possible explanation is that the instruments measure related but distinct constructs: the PSS-10 assesses respondents' appraisal of their circumstances as stressful, whereas the GHQ-12 assesses symptoms of psychological distress. In addition, coping strategies, occupational resilience, social support, and differences in personal circumstances may influence how perceived stress is experienced and expressed as psychological symptoms [12,19]. These factors were not directly measured in this study and should therefore be explored in future research. The restricted ranges and relatively small standard deviations of the scores may also have reduced the ability to detect a significant correlation.

Frequently Reported Organisational Stressors

The stressor profile showed that organisational and resource-related conditions were frequently reported. Lack of essential equipment or supplies was the most frequently reported stressor (82.1% sometimes/often/always), followed by dealing with patient death or suffering, long working hours, and fear of litigation. This pattern aligns closely with Nigerian and LMIC evidence identifying resource and equipment shortages as important contributors to occupational stress [14,6] and supports the ERI premise that sustained effort under inadequate structural support may generate strain. The prominence of system-level stressors indicates that organisational and resource-focused responses should be prioritised alongside individual coping interventions.

Fear of Litigation as the Key Correlate of Stress

Although equipment shortage was the most frequent stressor, it was fear of litigation that was uniquely and significantly associated with higher perceived stress ($r_s = 0.285$, $p = 0.01$), while staffing, long hours, conflict, and political interference were not. This distinction between how often a stressor is experienced and how strongly it relates to appraised stress is important. Fear of litigation is an anticipatory, personally directed threat: it links system failures to individual blame and medico-legal exposure, which may make it a particularly potent source of perceived stress. The finding is consistent with defensive-practice and medico-legal-anxiety literature and suggests that legal-risk concerns deserve specific institutional attention, including transparent adverse-event processes and legal support for staff working within failing systems.

No Significant Differences Across Cadres or Hospitals

Psychological distress did not differ significantly across professional cadres ($H = 6.128$, $p = 0.106$), although nurses/midwives recorded the highest mean and doctors the lowest, directionally consistent with reports that nurses, through continuous patient contact and limited workflow control, experience greater strain [4,18]. The absence of significant

differences between Hospital A and Hospital B suggests that the stress and mental-health profile is broadly shared across comparable public tertiary hospitals in Abuja rather than institution-specific.

Strengths and Limitations

This study provides post-pandemic, instrument-based evidence on perceived stress and psychological distress from two public tertiary hospitals in Abuja, using standardized measures and a reasonably sized clinical sample with full sociodemographic and cadre data. Several limitations should nonetheless be noted. First, the cross-sectional design precludes causal inference; the reported associations are correlational only. Second, all measures were self-reported and therefore subject to social-desirability and recall bias. Persistent stigma around mental health may also have influenced the reporting of psychological symptoms. Third, both the perceived-stress and distress scores showed restricted range and small standard deviations, which limited statistical power to detect correlations. Fourth, the study was confined to two hospitals in a single city, so findings may not generalise to primary or secondary facilities or to other regions of Nigeria. Finally, the GHQ-12 classification should be interpreted cautiously because distress prevalence can vary depending on the cut-off applied, although the continuous GHQ-12 score was retained for correlation analysis.

Conclusion

Healthcare workers in the two studied public tertiary hospitals reported markedly elevated perceived stress, with all respondents experiencing either moderate or high stress. Probable psychological distress was also common, affecting 80.6% of respondents. However, perceived-stress scores were not significantly correlated with psychological-distress scores, either overall or within either hospital, indicating that the two outcomes did not vary together consistently at the individual level. Psychological-distress scores also did not differ significantly across professional cadres or between the two hospitals. Organisational and resource-related stressors were frequently reported, particularly shortages of essential equipment and supplies, while fear of litigation was the only individual stressor significantly associated with higher perceived stress. These findings indicate that healthcare workers are experiencing substantial occupational pressure alongside a considerable burden of psychological distress. Effective responses should therefore combine organisational reforms addressing equipment, staffing, working conditions, and medico-legal support with confidential mental-health and staff-wellbeing services.

Recommendations

Hospital management and policymakers should prioritise reliable provision of essential equipment, consumables, and functional clinical tools, and strengthen staffing in high-pressure units. Clear adverse-event and medico-legal support mechanisms should be established to reduce fear of litigation where stress arises from system failures beyond individual workers' control. Confidential counselling, peer-support, and routine staff mental-health check-ins should be introduced, alongside review of remuneration and recognition to address effort-reward imbalance. Future research should use longitudinal designs, preserve full validated scoring for the PSS-10 and GHQ-12, and explore, through mixed methods, the coping and contextual factors that may explain the lack of a significant correlation between perceived stress and psychological distress despite the high occurrence of both outcomes.

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Competing interests: The authors declare no competing interests.

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Author Contributions: Hameedat Titilade Sanusi: Conceptualization; project coordination; methodology development; research proposal development; ethical protocol development; questionnaire development; study organization; and drafting and structuring of the initial manuscript. Chukwudi Moses Ihezue: Critical

review of the manuscript; substantive editorial revisions; scholarly correction of the research content; and refinement of the manuscript. Rasheedah Muhammad Hamza: Critical review of the manuscript; substantive intellectual contributions through suggestions and recommended corrections; and refinement of the manuscript.

All authors reviewed and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

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