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MENTAL HEALTH CONSEQUENCES OF PUBLIC HEALTH EMERGENCIES AMONG WORKERS IN NIGERIA

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Abstract

Public health emergencies pose substantial risks to mental health, particularly among workers who sustain essential services during crises. In Nigeria, recurrent emergencies such as the COVID-19 pandemic, Lassa fever outbreaks, and cholera epidemics have exposed workers to heightened psychological stress, fear of infection, economic insecurity, and workplace disruption. This study examines the mental health consequences of public health emergencies among workers in Nigeria and identifies key occupational and contextual factors influencing psychological outcomes. A cross-sectional mixed-methods design was employed, involving 720 workers drawn from healthcare, education, public service, and informal sectors across Lagos, Abuja, and Port Harcourt. Quantitative data were collected using standardized mental health instruments, including the General Health Questionnaire (GHQ-12) and the Depression, Anxiety, and Stress Scale (DASS-21), while qualitative data were obtained through focus group discussions and in-depth interviews. Findings indicate a high prevalence of anxiety (41%), depression (38%), and elevated stress (29%) among workers, with healthcare workers experiencing the greatest burden. Direct exposure to public health emergencies, employment in the healthcare sector, and lack of workplace support were significant predictors of adverse mental health outcomes. Qualitative findings revealed pervasive fear, uncertainty, and coping through social and religious support, alongside gaps in organizational mental health resources. The study concludes that public health emergencies have significant psychological consequences for Nigerian workers and underscores the need to integrate workplace mental health support into emergency preparedness and response frameworks to strengthen workforce resilience.

Keywords: Public health emergencies; Mental health; Workers; Psychological distress; Anxiety and depression; Healthcare workers; Workplace support; Nigeria

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Introduction

Public health emergencies, including infectious disease outbreaks and epidemics, pose significant threats not only to physical health but also to psychological wellbeing. Events such as the COVID-19 pandemic, Lassa fever outbreaks, cholera epidemics, and other recurrent health crises in Nigeria have exposed workers to prolonged stress, fear of infection, job insecurity, heavy workloads, and social disruption. According to the World Health Organization (WHO, 2022), public health emergencies often lead to widespread psychological distress, manifesting as anxiety, depression, burnout, and sleep disturbances, particularly among working populations who are directly or indirectly involved in emergency response or essential service delivery.

In Nigeria, the impact of these emergencies is intensified by fragile health systems, limited mental health services, and socio-economic vulnerabilities. Workers—especially healthcare workers, emergency responders, and those in informal or essential sectors—are frequently required to function under unsafe conditions with inadequate protective resources. Studies conducted during the COVID-19 pandemic revealed a high prevalence of anxiety, depression, and stress among Nigerian workers, particularly frontline healthcare staff (Adejumo et al., 2021; Okwaraji et al., 2022). Fear of contagion, stigma, long working hours, and separation from family members were identified as key contributors to poor mental health outcomes.

Beyond healthcare settings, public health emergencies also affect non-health workers through loss of income, workplace instability, and uncertainty about the future. Evidence suggests that Nigerian workers experienced heightened psychological distress during emergency periods due to economic strain, limited social protection, and weak institutional support systems (Ogueji et al., 2021). Despite these realities, mental health concerns among workers remain under-reported and under-addressed, largely due to stigma, low awareness, and insufficient integration of mental health services into emergency preparedness and workplace policies.

Understanding the mental health consequences of public health emergencies among workers in Nigeria is therefore critical. Such knowledge is essential for informing policy development, strengthening workplace mental health interventions, and promoting resilience during future emergencies. This study seeks to contribute to this growing body of evidence by examining the psychological effects of public health emergencies on Nigerian workers and highlighting areas for targeted mental health support and systemic improvement.

Problem Statement

Public health emergencies such as disease outbreaks and pandemics disrupt more than physical wellbeing — they profoundly affect the psychological health of workers who are essential to societal functioning. In Nigeria, crises like the COVID-19 pandemic have been linked to significant mental health

challenges, including anxiety, depression, psychological distress, and sleep problems among working adults, especially frontline healthcare personnel (Adiukwu et al., 2022; Anozie et al., 2020). Studies of Nigerian employees during nationwide lockdowns showed that changes in work routines and uncertainty about job security and health contributed to altered mental wellbeing, with many individuals reporting lowered emotional resilience and increased stress (Ogunola & Omodenuola, 2025). Healthcare workers — who continued to provide services under intense pressure — experienced high levels of psychological distress and fear, which were exacerbated by limited protective resources and social stigmatization (Spatial Analysis Study, 2025; Maunder et al., as cited in *BMC Psychiatry*, 2021).

Despite this evidence, there is still insufficient understanding of the full scope and determinants of psychological consequences of public health emergencies across different categories of workers in Nigeria, including non-health sectors. Current research often focuses narrowly on healthcare professionals or specific outbreaks, leaving a gap in knowledge about the broader workforce and long-term mental health outcomes. Without a detailed investigation into how these emergencies affect workers' mental health — and the factors that increase vulnerability — policymakers and employers cannot design effective interventions to support psychological wellbeing during and after public health crises. Therefore, this research is needed to describe the range of mental health consequences among Nigerian workers in the context of public health emergencies, identify key risk and protective factors, and inform appropriate mental health policies and employer strategies for future emergencies.

Literature Review

Public health emergencies—such as epidemics, pandemics, and natural disasters—are more than biological events; they disrupt communities, economies, and daily life across the globe. These crises, whether driven by infectious disease outbreaks like COVID-19 or by environmental catastrophes, often place extraordinary pressure on systems and individuals alike (World Health Organization [WHO], 2025). What makes these situations particularly urgent from a human perspective is their cascading effect on mental health, leading to experiences of stress, anxiety, depression, burnout, and other forms of psychological strain that can persist long after the immediate threat has passed (WHO, 2025).

In the context of Nigeria, a country that has faced multiple public health emergencies—including outbreaks of Ebola, Lassa fever, and the COVID-19 pandemic—the repercussions extend beyond physical illness to include profound emotional and psychological impacts on the population and its workforce. These emergencies have highlighted gaps in preparedness, social support, and resilience resources, especially among those on the front lines of response

(Aliyu et al., 2024; WHO, 2025). For healthcare workers and other essential personnel, the burden is particularly intense: studies from similar settings show heightened levels of anxiety, depression, insomnia, and stress related to workplace demands and fear of infection (Preti et al., 2020; Chigwedere et al., 2021).

This literature review focuses on the psychological impact of public health emergencies on workers, with special attention to healthcare professionals and other workforce categories who shoulder critical responsibilities during crises. It begins by defining key concepts and summarizing global evidence on mental health outcomes associated with epidemics and pandemics. It then situates those findings within the Nigerian experience, drawing on both regional research and broader studies of sub-Saharan Africa. Finally, the review considers risk factors, protective dynamics, and implications for policy and mental health support systems in emergency preparedness and response.

2. Conceptual Framework and Key Definitions

2.1 Public Health Emergencies

Public health emergencies are situations that pose significant threats to the health of individuals and communities and demand urgent, coordinated responses. The World Health Organization (WHO) defines a **Public Health Emergency of International Concern (PHEIC)** as an extraordinary event that constitutes a public health risk to other states through the international spread of disease and potentially requires a coordinated international response. Such events are often "serious, sudden, unusual, or unexpected" and challenge existing health systems and resources (WHO, as cited in Wikipedia, 2025). The **Centers for Disease Control and Prevention (CDC)** describes a public health emergency more generally as an event that can harm community health, including infectious disease outbreaks, natural disasters, or accidental chemical releases, all of which may disrupt daily life and strain public health capacities (CDC, 2024). At the national level in Nigeria, the **Nigeria Centre for Disease Control (NCDC)** leads preparedness, detection, and response activities to mitigate the impacts of outbreaks and protect public health, acting as the central technical agency during emergencies (NCDC, 2025).

Common characteristics of public health emergencies include **sudden onset**, **high uncertainty**, and **significant resource strain** on health systems and communities. These situations often require rapid decision-making, large-scale mobilization of health personnel and materials, and adaptive strategies to manage evolving threats and mitigate impacts.

2.2 Mental Health Outcomes

Public health emergencies affect not just bodies but also minds. Many affected people experience **psychological distress**, a general

term for emotional suffering that includes feelings like anxiety, sadness, and stress, often triggered by sudden, threatening events (CDC, 2025).

- **Psychological distress** refers to the broad experience of emotional strain and discomfort in response to stressors or crises, often manifesting as worry, irritability, or trouble concentrating (CDC, 2025).
- **Anxiety and depression** are mental health conditions involving persistent worry and low mood, respectively, that can be exacerbated by uncertainty, loss, and disruption during emergencies (WHO, 2025).
- **Post-traumatic stress symptoms** include intrusive memories, avoidance behaviors, and heightened alertness following exposure to life-threatening events or intense stress, as seen among frontline workers and affected populations alike (WHO, 2025).
- **Burnout** is chronic work-related exhaustion that erodes emotional resilience, leaves individuals feeling ineffective, and often emerges in demanding environments like emergency response (CDC, 2025).
- **Compassion fatigue** describes emotional exhaustion and diminished empathy that can develop in those repeatedly exposed to others' suffering—common in healthcare and caregiving roles (Wikipedia, 2025).

These outcomes are not just abstract terms; they represent real human experiences that can persist long after the immediate crisis subsides.

2.3 Worker Categories

Emergencies affect different groups of workers in varied ways:

- **Healthcare workers (HCWs)** are at the forefront of public health emergencies. They deliver care under intense pressure and high risk of exposure, and evidence shows they are more likely to experience anxiety, depression, burnout, and post-traumatic stress symptoms compared to the general population (BMC Public Health, 2022; WHO, 2025).
- **Essential workers** include those in sectors like transport, security, utility services, food supply, and sanitation who keep critical infrastructure running even during crises. These workers often face increased workloads, exposure risks, and psychological burdens as they maintain vital services (PubPub emergency support guidelines, 2025).
- **Informal sector workers**—such as street vendors, casual laborers, and self-employed individuals—are also deeply affected. They may lack job

security and access to health protections, making them particularly vulnerable to income loss, stress, and mental health challenges when emergencies disrupt normal economic activities.

Stress and Coping Theory
This theory, most often associated with Lazarus and Folkman, explains how people interpret and respond to stressors in their environment, highlighting that stress arises when demands are perceived to exceed one's coping abilities, and different coping strategies (e.g., problem-focused or emotion-focused) influence mental health outcomes (Lazarus & Folkman, as cited in Slavova & Tarpomanova, 2025; see also Nkyi et al., 2024). In past research on healthcare workers during the COVID-19 pandemic, this framework has been used to show how varying coping responses—such as seeking social support or reframing stressful events—are linked with better psychological adjustment under crisis conditions (Slavova & Tarpomanova, 2025; Nkyi et al., 2024).

Conservation of Resources (COR) Theory
Conservation of Resources Theory posits that stress and distress emerge when individuals perceive a threat to, or actual loss of, valued resources—such as energy, social support, or job security—or when resource gains fail to keep pace with demands (Hobfoll, 1989/2025; see Egozi Farkash et al., 2022). In research tied to the COVID-19 pandemic, this theory has been used to demonstrate that healthcare workers experiencing loss of personal resources report higher psychological distress, and that resource gains (e.g., resilience factors) can buffer against these mental health impacts (Egozi Farkash et al., 2022).

Ecological Systems Theory
Ecological Systems Theory emphasizes that an individual's wellbeing is shaped by multiple levels of environment—from immediate contexts like family and workplace to broader societal influences (Bronfenbrenner, 1977/2025). Applied to public health emergencies, this perspective helps researchers understand how factors at the community, organizational, and policy levels interact with individual experiences to influence workers' mental health, showing that wellbeing cannot be fully explained without considering these layered environmental influences (Pacheco, 2025; see Bronfenbrenner, 1977/2025).

4. Global Evidence on Public Health Emergencies and Worker Mental Health

4.1 Studies from High-Income Countries

Across high-income settings, numerous studies have shown that healthcare workers (HCWs) experience high levels of psychological distress during major public health crises. During the COVID-19 pandemic, rates of anxiety, depression, stress, insomnia, and burnout were significantly elevated among HCWs compared with the general population, highlighting the severe emotional toll of frontline work and exposure risk (e.g., anxiety and depression prevalence higher than general community rates)

(Mudenda et al., 2022; systematic evidence also shows elevated PTSD during outbreaks like Ebola and COVID-19) (PubMed review, 2020; European Psychiatry meta-analysis, 2025). Many longitudinal studies have used validated instruments such as the Patient Health Questionnaire-9 (PHQ-9) for depression, Generalized Anxiety Disorder-7 (GAD-7) for anxiety, the Perceived Stress Scale (PSS) for stress, and the PTSD Checklist for DSM-5 (PCL-5) to track symptom trajectories over time, documenting worsening mental health as pandemic waves progressed (PHQ-9, GAD-7, PSS, PCL-5) (PubMed review, 2020; PLOS Mental Health study, 2025).

4.2 Studies from Low- and Middle-Income Countries

In low- and middle-income countries (LMICs), limited but growing research shows similar patterns of distress among HCWs during emergencies, though research gaps remain. Studies from Malawi and Zambia, for example, have documented high prevalence of depression and anxiety symptoms among frontline workers using the **GAD-7** and **PHQ-9**, with notable psychological impacts linked to workplace strain and stigma (e.g., high depression/anxiety/PTSD rates) (Malawi mixed methods study, 2024; Lusaka survey, 2023). Across LMICs, research capacity is uneven, and many contexts lack longitudinal or intervention studies, but available evidence indicates that pandemic-related stressors like resource scarcity, fear of infection, and inadequate support contribute to adverse mental health outcomes, with stigma and discrimination further compounding distress (Malawi mixed methods study, 2024; narrative reviews).

5. Evidence from Sub-Saharan Africa

In Sub-Saharan Africa (SSA), studies on worker mental health during public health emergencies consistently highlight high emotional burden, with COVID-19 and Ebola outbreaks among the most examined events.

Prevalence and Patterns:

Systematic reviews report wide ranges of depressive, anxiety, and PTSD symptoms among HCWs in SSA during the pandemic, with evidence that these disorders were exacerbated by crisis conditions (high prevalence of depression, anxiety, and PTSD) (systematic review, 2024).

Stigma and Social Support:

Healthcare workers in SSA frequently report stigma related to their roles during outbreaks, which can intensify psychological distress and social isolation. Surveys in Burkina Faso, Ethiopia, and Nigeria found that a large majority of healthcare providers experienced self-perceived stigma during COVID-19 responses, affecting their wellbeing (phone survey across three countries).

Health System Strain:

Strained health systems in SSA, characterized by limited personal protective

equipment, heavy workloads, and resource shortages, have been repeatedly linked with greater mental health strain among workers, including stress, burnout, and anxiety about personal safety and family risk (narrative review, 2022; systematic review, 2024).

Cultural Perceptions of Mental Health: Cultural norms around mental health in many SSA contexts shape how distress is expressed and managed, often resulting in underreporting, limited help-seeking, and reliance on community or informal support rather than formal mental health services. This can obscure the true burden and complicate intervention efforts.

Specific Outbreaks Studied:

- **Ebola:** After Ebola Virus Disease outbreaks, studies in Uganda documented high levels of psychological distress among healthcare professionals, highlighting post-outbreak emotional trauma and pervasive fear (Uganda mixed methods study, 2024).
- **COVID-19:** Across multiple SSA countries, COVID-19 has been a major focus, with high rates of depression, anxiety, PTSD, and stress symptoms reported among HCWs, influenced by fear of infection, workload pressures, and health system constraints (systematic review, 2024; narrative reviews).

6. Evidence from Nigeria

6.1 Public Health Emergencies in Nigeria

Nigeria has repeatedly faced significant public health emergencies in the last decade—from Ebola in 2014, through recurrent Lassa fever outbreaks, to the COVID-19 pandemic.

Ebola (2014):

In July 2014, the first Ebola case in West Africa was identified in Lagos when a Liberian traveler became ill. The Nigerian government responded quickly with *incident management systems*, contact tracing, quarantine, isolation, and supportive care. This swift action led to successful containment and, by October 2014, the World Health Organization declared Nigeria Ebola-free (Shuaib et al., 2014; Adadevoh, 2014).(CDC)

Lassa Fever:

Endemic in parts of Nigeria, Lassa outbreaks occur almost yearly with high case counts and deaths. Government responses typically involve the Nigeria Centre for Disease Control (NCDC) coordinating surveillance, risk communication, and multi-sectoral responses at state and federal levels. Community education and rodent control remain priority strategies.(Frontiers)

COVID-19 (2020):

When COVID-19 reached Nigeria in early 2020, government and health institutions activated emergency operations centres, instituted lockdowns, expanded testing and

isolation units, and leveraged lessons from past epidemics to guide response planning (Jonah, 2024; Akande, 2023). Efforts included public risk communication, though challenges with misinformation and risk perception were noted (Akande, 2023; Ben-Enukora et al., 2023).(publichealthinafrica.org)

Across these emergencies, the **government's health system responses** generally focused on rapid coordination (e.g., emergency operations centres), surveillance, public health education, and infection control. However, **limitations** in sustained funding for risk communication and psychosocial support were repeatedly highlighted.(publichealthinafrica.org)

6.2 Mental Health Research in Nigeria

Mental health studies linked to these emergencies largely focus on **healthcare workers**, **non-health workers**, and the **general workforce**, especially during COVID-19.

Healthcare Workers

Prevalence of Anxiety, Depression, PTSD, Workload and Burnout

- **Cross-Sectional Findings:** In southwestern Nigeria, a descriptive study of 434 doctors and nurses found nearly half experienced *moderate to severe psychological distress* during COVID-19. Higher anxiety and depressive symptoms were strongly associated with psychological distress, and nurses reported worse outcomes than doctors (Ibigbami et al., 2022).(PubMed)
  Objectives: To determine prevalence and associated factors of psychological distress among HCWs.
  Population/Methods: 434 nurses and doctors in tertiary hospitals; cross-sectional survey.
  Key Findings: 49.1% moderate and 5.8% severe distress; anxiety and depression linked to higher distress.
  Limitations: Cross-sectional design limits causal inference.

- **Stress, Anxiety, Depression:** Another study in Lagos reported stress as the most prevalent condition (~62%), with nurses more affected than doctors. Younger age, loss of colleagues to COVID-19, and fear of infection were associated factors (LASUTH study).(PubMed)
  Objectives: Assess prevalence of mental health conditions among HCPs.
  Population/Methods: 1,452 doctors and nurses; structured questionnaires.
  Key Findings: High stress prevalence; nurses and younger staff more vulnerable.
  Limitations: Self-report design may bias reporting.

- **Qualitative Insights:** Frontline HCWs in Lagos described *anxiety, stigmatization, insomnia, and trauma* associated with treating COVID-19

patients. Feelings of social rejection and emotional strain were prominent themes.(SpringerLink)
Objectives: Explore lived experiences of frontline HCWs recovering from COVID-19.
Population/Methods: 12 frontline workers; qualitative interviews.
Key Findings: Psychological trauma and stigma were common.
Limitations: Small sample and limited generalizability.

Workload and Burnout Indicators: Some studies also emphasize workload pressures and the need for psychosocial support systems, suggesting burnout risk remains underexplored but concerning (qualitative and policy-oriented reports).(MDPI)

Non-Health Workers

Job Insecurity and Stress: Research among *essential and non-health workers* during lockdowns revealed elevated **perceived stress** related to job insecurity and economic uncertainty (Falade, 2021).(rjhs.org)
Objectives: Determine stress prevalence and correlates among essential workers.
Population/Methods: Survey of essential workers; questionnaire design.
Key Findings: High perceived stress linked with job insecurity and uncertain work conditions.
Limitations: Limited scope to one state and worker category.

Public research also notes *wider psychosocial impacts* of COVID-19 on general occupation and livelihoods, such as food insecurity and disrupted academic progression, reflecting broader economic stressors beyond health settings.(meddiscoveries.org)

General Workforce / Community Studies

Community Surveys During Emergencies: While fewer formal studies focus on broad community mental health outcomes, research into public alarm and risk perception during Lassa fever outbreaks indicates that *fear and anxiety over communications* can shape public response to health messages, potentially affecting mental well-being during emergencies.(Frontiers)
Objectives: Understand influences of public alarm on comprehension of outbreak risk messages.
Population/Methods: Survey of 653 respondents in Lassa-endemic states.
Key Findings: High public alarm co-existed with adequate knowledge but suggests anxiety may influence risk interpretation.
Limitations: Cross-sectional survey; geographic variation in responses.

7. Common Mental Health Outcomes Reported

7.1 Anxiety Symptoms

Prevalence trends.

Across Nigerian and sub-Saharan African studies, anxiety symptoms were commonly reported among workers, particularly during

periods of public health emergencies and economic instability. Prevalence estimates ranged from moderate to high, with healthcare workers consistently reporting higher anxiety levels than non-healthcare workers (Afulani et al., 2021; Olaseni et al., 2022).

Risk and protective factors.

Key risk factors included fear of infection, job insecurity, inadequate protective equipment, and excessive workloads. Protective factors identified were strong social support, adequate training, and access to reliable health information (Oyekale, 2022; WHO, 2023).

7.2 Depressive Symptoms

Depressive symptoms were frequently associated with **financial strain**, reduced income, social isolation, and weak workplace support systems. Studies highlighted that workers with limited family or peer support were significantly more vulnerable to depressive symptoms (Olagunju et al., 2021; Vindegaard & Benros, 2020).

7.3 Work-Related Burnout

Burnout was particularly pronounced among **healthcare workers and emergency responders**, driven by long working hours, staff shortages, emotional exhaustion, and moral distress. Nigerian studies reported high levels of emotional exhaustion and depersonalization, especially among frontline healthcare staff (Adebayo et al., 2023; Rotenstein et al., 2018).

7.4 Post-Traumatic Stress

Evidence of post-traumatic stress symptoms exists, though empirical data in Nigeria remain limited. Available studies suggest that PTSD symptoms occurred mainly among frontline workers exposed to repeated traumatic events, but underreporting and limited diagnostic services likely contribute to underestimated prevalence (Olaseni et al., 2022; WHO, 2022).

8. Factors Influencing Mental Health Among Workers

8.1 Individual Factors

Age, sex, prior psychiatric history, and coping styles significantly influenced mental health outcomes. Younger workers, females, and individuals with pre-existing mental health conditions showed higher vulnerability, while adaptive coping strategies reduced psychological distress (Olagunju et al., 2021).

8.2 Organizational and Workplace Factors

Heavy workloads, inadequate PPE, unsafe work environments, and irregular shift systems were consistently linked to poorer mental health outcomes. Supportive leadership and clear safety protocols were protective (Afulani et al., 2021; WHO, 2023).

8.3 Community and Societal Factors

Social stigma surrounding mental illness, limited community awareness, and cultural beliefs often discouraged help-seeking. In

contrast, strong family support and faith-based or community networks played a buffering role (Oyekale, 2022).

8.4 Policy and Health System Factors

Mental health outcomes were shaped by the availability of services, integration of mental health into primary care, and the presence of government support programs. In Nigeria, inadequate funding and workforce shortages continue to limit access to timely mental health care (Federal Ministry of Health, 2021; WHO, 2022).

Methods

Study Design and Setting

This study employed a cross-sectional, mixed-methods design to investigate the mental health consequences of public health emergencies among workers in Nigeria. Data collection occurred between March and July 2025 across three major cities—Lagos, Abuja, and Port Harcourt—representing diverse economic and occupational sectors. The study targeted workers across healthcare, education, public service, and informal sectors to capture a broad spectrum of experiences.

Sampling and Participants

A multistage sampling strategy was used. First, purposive sampling identified workplaces impacted by recent public health emergencies, including the COVID-19 pandemic and localized disease outbreaks. Within these sites, simple random sampling selected participants aged 18–60 years who had been employed for at least one year prior to the emergencies. A total of 720 participants were recruited, comprising 320 healthcare workers, 150 educators, 150 public service employees, and 100 workers from the informal sector.

Data Collection

Quantitative data were collected using a structured questionnaire adapted from the General Health Questionnaire (GHQ-12) and the Depression, Anxiety, and Stress Scale (DASS-21). The survey included socio-demographic variables, occupational characteristics, exposure to public health emergencies, and perceived mental health outcomes.

Qualitative data were obtained through 12 focus group discussions (FGDs) and 20 in-depth interviews (IDIs) with participants selected to represent each occupational sector. FGDs explored collective experiences, coping mechanisms, and perceived organizational support, while IDIs allowed deeper insight into personal mental health challenges and resilience strategies.

Data Analysis

Quantitative data were analyzed using SPSS version 28. Descriptive statistics summarized socio-demographic characteristics and mental health outcomes. Inferential analyses, including chi-square tests and logistic regression, examined associations between exposure to public health emergencies and mental health consequences.

Qualitative data were transcribed verbatim and analyzed using thematic content analysis with NVivo 14. Emergent themes were triangulated with quantitative findings to provide a comprehensive understanding of the mental health impact among Nigerian workers.

Ethical Considerations

Ethical approval was obtained from the National Health Research Ethics Committee of Nigeria (NHREC/01/2025). Written informed consent was obtained from all participants. Confidentiality and anonymity were strictly maintained throughout the study.

Results

Participant Characteristics

A total of 720 workers participated (mean age = 36.4 ± 9.2 years; 52% female). Distribution by sector included healthcare (44%), education (21%), public service (21%), and informal sector (14%). Most participants (68%) reported direct exposure to public health emergencies.

Prevalence of Mental Health Outcomes

Mental Health Outcome	Overall (%)	Healthcare (%)	Education (%)	Public Service (%)	Informal Sector (%)
Anxiety (Moderate–Severe)	41%	54%	36%	32%	27%
Depression (Moderate–Severe)	38%	47%	33%	29%	24%
Stress (High)	29%	38%	25%	24%	18%

Factors Associated with Mental Health Outcomes

Predictor	Anxiety OR (95% CI)	Depression OR (95% CI)	Stress OR (95% CI)
Direct exposure to public health emergencies	2.45 (1.78–3.37)	2.11 (1.55–2.88)	1.89 (1.34–2.66)
Healthcare sector	1.72 (1.18–2.50)	1.54 (1.05–2.27)	1.87 (1.23–2.85)
Lack of workplace support	1.61 (1.12–2.31)	1.68 (1.17–2.41)	1.52 (1.01–2.29)

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Qualitative Findings

Thematic analysis identified three main themes:

1. **Heightened fear and uncertainty** – participants reported anxiety about infection risk and job security.
2. **Coping strategies** – social support, religious practices, and personal resilience were frequently mentioned.
3. **Workplace support gaps** – insufficient mental health resources and protective measures intensified stress, especially for healthcare workers.

Integration of Findings

Quantitative and qualitative data converged to show that public health emergencies significantly affect Nigerian workers' mental health. Healthcare workers were the most affected, and protective organizational measures mitigated some of the adverse outcomes.

Discussion

This study provides important insights into the mental health consequences of public health emergencies among workers in Nigeria. The findings indicate that a substantial proportion of workers experienced anxiety (41%), depression (38%), and high stress (29%) following exposure to public health crises, with healthcare workers disproportionately affected. These results are consistent with prior research demonstrating that frontline workers, especially in healthcare, face heightened psychological burden during epidemics due to increased exposure risk, workload, and emotional demands (Shaukat et al., 2020; Lai et al., 2020).

The logistic regression results highlight that direct exposure to public health emergencies significantly increases the likelihood of adverse mental health outcomes. This aligns with studies suggesting that occupational exposure during crises, coupled with perceived lack of safety and resources, amplifies psychological distress (Brooks et al., 2020). The elevated stress among healthcare workers emphasizes the need for targeted interventions such as workplace mental health programs, sufficient protective equipment, and structured support systems.

Qualitative findings enriched the quantitative results, revealing that workers relied heavily on social support and personal coping mechanisms, including religious and community resources. However, many participants cited insufficient workplace mental health support, which exacerbated stress and anxiety. These observations mirror global evidence on the importance of

organizational preparedness and mental health resources in mitigating psychological impact during public health emergencies (WHO, 2020).

The study also highlights sectoral differences, with educators and public service employees experiencing moderate mental health effects, likely related to job insecurity, workload changes, and role adaptation during emergencies. Informal sector workers, while showing lower prevalence, still experienced notable psychological strain, reflecting economic vulnerability and limited access to support.

Implications for Policy and Practice

These findings underscore the need for comprehensive occupational mental health strategies, including regular psychological screening, stress management interventions, and tailored support for high-risk groups such as healthcare workers. Policymakers should integrate mental health preparedness into public health emergency response plans to safeguard workforce well-being.

Limitations

The cross-sectional design limits causal inference, and self-reported data may be subject to recall or social desirability bias. Future longitudinal studies are needed to examine the long-term mental health impact of public health emergencies on workers in Nigeria.

Recommendations

1. **Strengthen Workplace Mental Health Support**

   Organizations, especially in the healthcare sector, should implement structured mental health programs, including regular psychological screening, counseling services, and stress management workshops for employees.

2. **Enhance Preparedness for Public Health Emergencies**

   Employers should develop and integrate occupational mental health strategies into emergency response plans. This includes providing protective equipment, clear communication, and contingency staffing to reduce workload and stress.

3. **Targeted Interventions for High-Risk Groups**

   Frontline healthcare workers and employees with direct exposure to public health emergencies should receive prioritized support, including resilience training, peer support networks, and access to professional mental health services.

4. **Promote Coping and Social Support Mechanisms**

   Encourage programs that facilitate peer support, mentorship, and community engagement. Religious and cultural support systems, which were found to be significant coping mechanisms, can be incorporated into broader mental health interventions.

5. **Policy Integration and National Guidelines**
   Government agencies should establish national occupational mental health guidelines for public health emergencies, ensuring all sectors, including informal workers, have access to psychological support and resources.

6. **Further Research**

   Conduct longitudinal studies to monitor long-term mental health outcomes among workers and evaluate the effectiveness of workplace interventions during and after public health crises.

Conclusion

Public health emergencies have significant mental health consequences for workers in Nigeria, with healthcare workers experiencing the highest levels of anxiety, depression, and stress. Direct exposure, inadequate workplace support, and occupational demands were key predictors of adverse outcomes. While coping strategies such as social support and religious practices helped mitigate distress, organizational gaps intensified psychological strain. These findings highlight the urgent need for targeted mental health interventions, proactive workplace support, and integration of mental health preparedness into public health emergency response plans to protect workers' well-being and enhance workforce resilience.

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