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Research proposal Title.

Prevalence and Associated Factors of Workplace Violence Among Healthcare Workers in Public Hospitals in Dongola' Northern State, Sudan, 2026.

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Introduction

Workplace violence (WPV) is increasingly recognized as a major occupational health and safety challenge within healthcare systems worldwide. The World Health Organization (WHO), International Labour Organization (ILO), International Council of Nurses (ICN), and Public Services International (PSI) define workplace violence as incidents in which healthcare workers are abused, threatened, or assaulted in circumstances related to their work, resulting in explicit or implicit threats to their safety, well-being, or health (1). Healthcare professionals are particularly vulnerable because healthcare settings are characterized by frequent interactions with patients and their relatives, emotionally charged situations, high workloads, long waiting times, inadequate staffing, overcrowding, and resource constraints (1,2).

Healthcare workers represent one of the occupational groups most frequently exposed to workplace violence. Violence may take several forms, including verbal abuse, physical assault, threats, bullying, psychological aggression, and sexual harassment (2,3). The nature of healthcare delivery often requires healthcare workers to operate in stressful environments where patients and relatives may experience anxiety, fear, frustration, pain, or dissatisfaction, increasing the risk of violent incidents (1,2).

Workplace violence has important consequences for both healthcare workers and healthcare organizations. Exposure to violence has been associated with psychological distress, anxiety, depression, burnout, reduced job satisfaction, impaired work performance, absenteeism, increased staff turnover, and decreased quality of patient care (2-4). Furthermore, workplace violence contributes to reduced workforce productivity and places additional strain on already burdened healthcare systems, particularly in low- and middle-income countries (2,4).

Globally, workplace violence remains highly prevalent among healthcare professionals. A systematic review and meta-analysis conducted by Liu et al. involving 253 studies and 331,544 healthcare workers reported that 61.9% experienced at least one form of workplace violence during the previous year. Non-physical violence affected 42.5% of healthcare workers, while physical violence affected 24.4% (3). Similarly, an umbrella review conducted by Rossi et al. confirmed that workplace violence is a persistent and widespread occupational hazard affecting healthcare workers across different healthcare settings worldwide (2).

In Africa, workplace violence has emerged as a significant public health and occupational safety concern. A systematic review by Njaka et al. reported widespread occurrence of verbal, physical, psychological, and sexual violence against healthcare workers across African countries (4). More recently, a systematic review and meta-analysis involving 9,831 nurses from 27 African studies estimated a pooled prevalence of workplace violence of 62.3%, with verbal abuse identified as the most common form of violence (5).

Evidence from Sudan indicates that workplace violence represents a serious challenge to healthcare workers. A national cross-sectional study conducted during the COVID-19 pandemic found that 78.3% of healthcare workers experienced workplace violence. Verbal violence accounted for 91.6% of reported incidents, physical violence for 50%, and sexual harassment for 11% (6). Furthermore, approximately half of violent incidents were not formally reported, highlighting weaknesses in reporting mechanisms and institutional responses (6). Another study conducted among doctors working in government hospitals in Khartoum State reported substantial exposure to both verbal and physical violence, emphasizing the magnitude of the problem within the Sudanese healthcare system (7).

2. PROBLEM STATEMENT

Workplace violence is one of the most serious occupational hazards affecting healthcare workers globally. Healthcare workers frequently encounter verbal abuse, threats, physical violence, bullying, and other aggressive behaviors while providing care. These incidents not only threaten their physical and psychological well-being but also negatively affect the overall functioning of healthcare systems.

Globally, nearly two-thirds of healthcare workers experience some form of workplace violence during their professional practice (1). Evidence from Africa similarly indicates that workplace violence affects a substantial proportion of healthcare workers, with prevalence estimates exceeding 60% in several settings (3,4). Such findings underscore the persistent and widespread nature of the problem.

In Sudan, the burden appears particularly severe. Elhadi et al. reported that 78.3% of healthcare workers experienced workplace violence, while approximately half of all violent incidents were not formally reported (5). Underreporting limits institutional awareness of the problem and hinders the implementation of effective preventive measures. Furthermore, workplace violence has been associated with reduced job satisfaction, psychological distress, burnout, absenteeism, impaired work performance, and poor quality of patient care.

Despite these concerns, evidence from Northern State remains scarce. Existing Sudanese studies have primarily focused on Khartoum State and selected professional groups, leaving a considerable gap in understanding workplace violence among healthcare workers in public hospitals in Dongola. Information regarding the prevalence, forms, perpetrators, reporting practices, and associated factors of workplace violence in this setting is currently limited.

The lack of locally generated evidence constrains the ability of hospital administrators, health authorities, and policymakers to develop context-specific strategies for preventing workplace violence and protecting healthcare workers. Therefore, this study aims to address this knowledge gap by assessing the prevalence and associated factors of workplace violence among healthcare workers in public hospitals in Dongola, Northern State, Sudan.

3. JUSTIFICATION OF THE STUDY

Healthcare workers are the backbone of any healthcare system, and ensuring their safety is essential for maintaining effective health service delivery. Workplace violence undermines healthcare workers' physical and psychological well-being, reduces morale, impairs work performance, and negatively affects the quality of patient care. Consequently, addressing workplace violence has become a global health priority.

Although workplace violence has been widely studied internationally, evidence from Sudan remains limited and geographically concentrated. Most available Sudanese studies have been conducted in Khartoum State or focused on specific professional groups, leaving substantial regional disparities in knowledge. Northern State, particularly Dongola, has unique healthcare delivery contexts, staffing patterns, patient populations, and resource limitations that may influence workplace violence differently from other regions.

This study will generate baseline evidence regarding the prevalence, forms, perpetrators, reporting practices, consequences, and determinants of workplace violence among healthcare workers in public hospitals in Dongola. Such evidence is essential for developing evidence-based interventions aimed at improving healthcare workers' safety and well-being.

The findings may assist:

- Hospital administrators in strengthening workplace violence prevention programs.
- The Northern State Ministry of Health in formulating occupational safety policies.
- Healthcare institutions in establishing effective reporting and response mechanisms.
- Researchers by contributing to the limited literature on workplace violence in Sudan.

Ultimately, the study will provide valuable information for creating safer work environments and improving healthcare service delivery.

4. RESEARCH QUESTIONS

1. What is the prevalence of workplace violence among healthcare workers in public hospitals in Dongola?
2. What are the common forms, perpetrators, and circumstances of workplace violence?
3. Which sociodemographic and occupational factors are associated with workplace violence?

5. HYPOTHESES

Null Hypothesis (H_0)

There is no statistically significant association between sociodemographic and occupational characteristics and workplace violence among healthcare workers in public hospitals in Dongola.

Alternative Hypothesis (H_1)

There is a statistically significant association between sociodemographic and occupational characteristics and workplace violence among healthcare workers in public hospitals in Dongola.

6. OBJECTIVES

General Objective

To determine the prevalence and associated factors of workplace violence among healthcare workers in public hospitals in Dongola, Northern State, Sudan, 2026.

Specific Objectives

1. To determine the prevalence of workplace violence among healthcare workers in public hospitals in Dongola.
2. To identify the common forms, perpetrators, and circumstances of workplace violence.
3. To assess the sociodemographic and occupational factors associated with workplace violence.

7. LITERATURE REVIEW

7.1 Global Perspective

Workplace violence is a major occupational health challenge affecting healthcare workers worldwide. According to Liu et al., approximately 61.9% of healthcare workers experience workplace violence annually, with non-physical forms accounting for the majority of incidents (1). Likewise, Rossi et al. reported substantial variability in prevalence across countries and healthcare settings but concluded that workplace violence remains a persistent global problem affecting healthcare workforce retention, productivity, and mental health (2).

Emergency departments, psychiatric units, intensive care units, and outpatient clinics have consistently been identified as high-risk healthcare settings. Common contributing factors include patient overcrowding, prolonged waiting times, inadequate staffing, insufficient security measures, and occupational stress (1,2).

7.2 African Evidence

Workplace violence is widely reported across African healthcare settings. Njaka et al. documented high prevalence rates of verbal abuse, physical violence, psychological aggression, and sexual harassment among healthcare workers in Africa (3).

A recent systematic review and meta-analysis by Ekpor et al. demonstrated a pooled prevalence of workplace violence of 62.3% among African nurses. Verbal abuse emerged as the most common form, followed by threats, bullying, physical assault, and sexual harassment (4). Factors associated with workplace violence included younger age, shift work, increased workload, limited work experience, and inadequate organizational support.

7.3 Sudanese Evidence

In Sudan, workplace violence has emerged as a growing concern. Elhadi et al. reported that 78.3% of healthcare workers experienced workplace violence during the COVID-19 pandemic. Verbal violence was the most common form, and approximately half of all incidents went unreported (5). Significant predictors included age, occupation, marital status, and years of experience.

Similarly, Alhusseini et al. reported a substantial burden of physical and verbal violence among doctors working in government hospitals in Khartoum State (6). The study emphasized the need for institutional policies, reporting systems, and preventive strategies.

Author	Setting	Design	Sample	Key Findings
Liu et al., 2019	Global	Systematic review and meta-analysis	331,544 HCWs	WPV prevalence was 61.9%; non-physical violence was the most common form.
Rossi et al., 2023	Global	Umbrella review	32 systematic reviews	Confirmed WPV as a major occupational health concern worldwide.
Njaka et al., 2020	Africa	Systematic review	Multiple African countries	Reported high prevalence of verbal, physical and psychological violence.
Ekpor et al., 2024	Africa	Meta-analysis	9,831 nurses	Pooled prevalence was 62.3%; verbal abuse predominated.
Elhadi et al., 2022	Sudan	Cross-sectional	792 HCWs	WPV prevalence was 78.3%; approximately 50% of incidents

Author	Setting	Design	Sample	Key Findings
				were unreported.
Alhusseini et al., 2021	Sudan	Cross-sectional	Doctors in Khartoum	Reported high exposure to verbal and physical violence.

Research Gap

The available evidence consistently demonstrates that workplace violence is a major occupational health challenge affecting healthcare workers globally, in Africa, and in Sudan. Verbal violence is the most commonly reported form, although physical violence, threats, bullying, and sexual harassment also occur frequently. Previous studies have identified several risk factors, including younger age, high workload, shift work, inadequate staffing, weak reporting mechanisms, insufficient security measures, and patient dissatisfaction.

Despite the availability of national evidence, significant gaps remain. Existing Sudanese studies have largely focused on healthcare workers in Khartoum State, specific professional categories, or the COVID-19 pandemic period. To date, there is no published evidence specifically examining workplace violence among healthcare workers in public hospitals in Dongola, Northern State. Consequently, the magnitude, determinants, reporting practices, and consequences of workplace violence in this setting remain unknown. This study is therefore designed to fill this important geographical, contextual, and evidence gap.

6. Theoretical Framework

This study will be guided by the Ecological Model of Workplace Violence, which proposes that violent incidents arise from interactions among individual, interpersonal, organizational, and societal factors.

Individual Factors

- Age
- Sex
- Marital status
- Professional category
- Years of experience

Interpersonal Factors

- Patient-worker interactions
- Relative-worker interactions
- Communication difficulties
- Patient dissatisfaction

Organizational Factors

- Staffing adequacy
- Security measures
- Reporting systems
- Workplace violence policies
- Workload
- Shift work

Environmental Factors

- Overcrowding
- Long waiting times
- Resource shortages
- Community attitudes toward healthcare workers

According to this framework, workplace violence is the product of multiple interacting determinants rather than a single causative factor. The framework provides a basis for identifying factors associated with workplace violence and designing preventive interventions.

7. Conceptual Framework

Sociodemographic Factors

- Age

- Sex

- Marital Status

- Education



Occupational Factors

- Profession

- Department

- Years of Experience
- Shift Pattern
- Working Hours
- Workload

Organizational Factors

- Security Availability
- Staffing Adequacy
- Reporting Mechanism
- WPV Policy

Patient/Visitor Factors

- Overcrowding
- Long Waiting Times
- Dissatisfaction
- Unexpected Outcomes

WORKPLACE VIOLENCE

- Verbal Abuse
- Physical Violence
- Threats
- Bullying
- Sexual Harassment



▼

Consequences

- Psychological Distress

- Physical Injury

- Reduced Job Satisfaction

- Absenteeism

- Intention to Leave

8. Operational Definitions

Workplace Violence

Any incident in which a healthcare worker is abused, threatened, harassed, intimidated, or physically assaulted in relation to his or her work during the previous 12 months.

Verbal Abuse

The use of insulting, humiliating, abusive, threatening, or offensive language directed toward a healthcare worker.

Physical Violence

The intentional use of physical force against a healthcare worker that results in or has the potential to result in physical harm.

Threat

Any verbal, written, or behavioral expression indicating an intention to cause physical or psychological harm.

Sexual Harassment

Any unwanted sexual comment, gesture, advance, behavior, or request occurring in the workplace.

Workplace Violence Reporting

The formal or informal communication of a workplace violence incident to a supervisor, hospital administration, security department, or designated reporting system.

Shift Work

Employment schedules involving night duty, evening duty, rotating shifts, or irregular working hours.

High Workload

Participants' perception of excessive work demands during routine clinical duties.

Healthcare Worker

A professional engaged in delivering preventive, promotive, diagnostic, therapeutic, rehabilitative, or supportive healthcare services in the participating hospitals.

METHODOLOGY

1 Study Design

An institution-based analytical cross-sectional study will be conducted among healthcare workers in public hospitals in Dongola, Northern State, Sudan, during 2026.

8.2 Study Area

The study will be conducted in Dongola specialized hospital and Dongola obstetrics and gynacology hospital

8.3 Study Population

All healthcare workers employed in selected public hospitals during the study period.

Source Population

All healthcare workers employed in public hospitals in Dongola.

Study Population

Selected healthcare workers meeting the eligibility criteria.

8.4 Inclusion Criteria

- Healthcare workers employed in the selected hospitals.
- Having worked in the hospital for at least three months.
- Available during data collection.
- Willing to participate.
- Provide informed consent.

8.5 Exclusion Criteria

- Healthcare workers on leave.
- Incomplete questionnaires.

8.6 Sample Size Determination

The sample size will be calculated using the single population proportion formula:

$n = Z^2P(1-P)/d^2$

Where:

- Z = 1.96
- P = 0.783
- d = 0.05

The calculated sample size is approximately 261 participants.

Adding 10% non-response:

Final sample size = 287 participants

8.7 Sampling Technique

Stratified random sampling will be used. Healthcare workers will be stratified according to their professional category and samples proportionally allocated to each stratum.

8.8 Data Collection Tool

Data will be collected using a structured self-administered questionnaire adapted from WHO, ILO, ICN, and PSI workplace violence assessment tools.

8.9 Study Variables

Dependent Variable

- Workplace violence (Yes/No)

Independent Variables

- Age
- Sex
- Marital status
- Profession
- Department

- Years of experience
- Shift pattern
- Working hours
- Workload
- Security availability
- Reporting mechanism
- Workplace violence policy

8.10 Data Analysis

Data will be entered and analyzed using SPSS version 26.

Descriptive statistics:

- Frequencies
- Percentages
- Means
- Standard deviations

Analytical statistics:

- Chi-square test
- Binary logistic regression

Results will be presented using COR, AOR, 95% CI, and p-values.

Statistical significance will be declared at $p < 0.05$.

8.11 Ethical Considerations

Ethical approval will be obtained from the relevant Research Ethics Committee. Permission will be sought from the Northern State Ministry of Health and participating hospitals. Written informed consent will be obtained from all participants. Confidentiality, anonymity, and voluntary participation will be maintained throughout the study.

WORK PLAN (TIME TABLE)

Activity	**Sep 2026**	**Oct 2026**	**Nov 2026**	**Dec 2026**	**Jan 2027**
Proposal writing	✓				
Literature review	✓				

Ethical approval		✓			
Tool preparation		✓			
Pilot study		✓			
Data collection			✓		
Data entry			✓	✓	
Data analysis				✓	
Report writing				✓	✓
Final submission					✓

Budget

Budget Item	Estimated Cost (SDG)
Questionnaire printing	30,000
Photocopying	20,000
Stationery	15,000
Transportation	100,000
Communication	20,000
Internet services	15,000
Data entry and analysis	30,000
Printing and binding	70,000
Contingency (10%)	30,000
Total	330,000 SDG

Expected Outcomes

The study is expected to:

1. Determine the prevalence of workplace violence among healthcare workers in public hospitals in Dongola.
2. Identify the most common forms and perpetrators of workplace violence.
3. Determine factors associated with workplace violence exposure.
4. Assess reporting practices and barriers to reporting violence.
5. Identify the psychological and occupational consequences of workplace violence.
6. Generate evidence that can support workplace safety interventions and policy development.

References

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7. International Labour Organization, International Council of Nurses, World Health Organization, Public Services International. Framework Guidelines for Addressing Workplace Violence in the Health Sector. Geneva: ILO; 2002.

1. Annexes

Proposed Questionnaire Structure

Section A — Sociodemographic Information

1. Age
2. Sex
3. Marital status
4. Educational level
5. Residence

Section B — Occupational Information

6. Professional category

7. Hospital

8. Department/unit

9. Years of professional experience

10. Average working hours per week

11. Usual shift pattern

12. Perceived workload

13. Availability of security personnel

14. Availability of workplace violence policy

15. Availability of a formal reporting mechanism

Section C — Workplace Violence During the Previous 12 Months

16. Have you experienced any form of workplace violence during the previous 12 months?

☐ Yes ☐ No

17. Which forms have you experienced?

☐ Verbal abuse

☐ Threats

☐ Physical violence

☐ Sexual harassment

☐ Bullying

☐ Psychological violence

☐ Other

18. How many incidents did you experience?

19. Who was the perpetrator?

20. Where did the most recent/significant incident occur?

21. During which shift did it occur?

22. Did the incident result in physical injury?

☐ Yes ☐ No

23. Did you seek medical attention?

☐ Yes ☐ No

Section D — Reporting

24. Was the incident reported?

☐ Yes ☐ No

25. If yes, to whom?

26. If no, what was the main reason for not reporting?

Section E — Consequences

27. Did the incident affect your psychological well-being?

28. Did it affect your job satisfaction?

29. Did it affect your work performance or concentration?

30. Did it cause absence from work?

31. Did it make you consider leaving the workplace/profession?

32. Were you satisfied with the response of the institutionAppendix I: Proposed Questionnaire Structure