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Northern State – Nursing Program – Batch 2

RESEARCH PROPOSAL

Assessment of Occupational Stress, Shift Work, and Their Effects on Nursing Performance Among Nurses at Dongola Specialized Hospital

Study period: August–December 2026

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Submitted in partial fulfilment of the requirements for the Bachelor’s Degree in Nursing.

DEDICATION

This achievement would not have been possible without the grace of Allah and the prayers, love, and support that accompanied us throughout our journey. We dedicate this work to our parents, families, teachers, supervisor, and everyone who encouraged us. Praise be to Allah, who guided us to pursue this achievement.

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CHAPTER ONE: INTRODUCTION

Background

Nursing is an essential part of healthcare services. Nurses have an important role in providing continuous, safe, and effective care to patients. The quality of nursing care depends not only on nurses' knowledge and skills, but also on the conditions in which they work. Nurses work in different clinical environments and are often required to manage several responsibilities at the same time. These working conditions may increase their workload and affect their physical and psychological well-being.

Nursing is a demanding profession that requires continuous physical and psychological effort. Nurses are responsible for providing direct patient care, monitoring patients, administering medications, communicating with patients and healthcare teams, and performing many other nursing duties. These responsibilities require concentration, attention, and the ability to work effectively under different clinical conditions.

Occupational stress is an important issue among nurses. Heavy workloads, staff shortages, work pressure, multiple responsibilities, and continuous exposure to different clinical situations may increase occupational stress and affect nurses' well-being. High levels of work-related stress may contribute to fatigue, emotional exhaustion, reduced job satisfaction, and difficulties in maintaining effective work performance. Occupational stress among nurses has also been examined in public hospitals in Khartoum State, Sudan (Mohamedkheir et al., 2016).

Shift work is another important factor that may affect nurses' health and well-being. Nurses may work during the day, evening, or night, and some may have irregular working schedules. Night shifts and irregular working hours can affect normal sleep and rest patterns and may contribute to fatigue, sleep disturbances, reduced energy, and decreased concentration. Roman et al. (2023) reported that shift work can affect the health and well-being of nursing professionals, while Baek et al. (2022) examined the relationship between occupational stress, sleep disturbance, and presenteeism among shiftwork nurses.

Workload and mental demands can also influence nurses' job performance. When nurses experience high mental workload and continuous work pressure, they may find it more difficult to maintain their expected level of performance. Pourteimour et al. (2021) examined the relationship between mental workload and job performance among nurses, highlighting the importance of workload in nursing practice.

Therefore, occupational stress, workload, and shift work are important factors that may affect nurses' physical and psychological well-being as well as their professional performance. Understanding these factors is important for supporting nurses and improving their working conditions.

Problem Statement

Nursing is a demanding profession that requires significant physical and psychological effort. Nurses often work long hours and perform multiple responsibilities that require continuous concentration and attention. They may experience occupational stress due to heavy workloads, staff shortages, work pressure, multiple responsibilities,

and continuous exposure to different clinical situations. These factors may negatively affect nurses' physical and psychological well-being.

Shift work, particularly night shifts and irregular working schedules, may also affect nurses' sleep and rest patterns. This can lead to fatigue, exhaustion, sleep disturbances, reduced energy, and decreased concentration and alertness. Continuous exposure to these working conditions may make it difficult for nurses to maintain a consistent level of efficiency while performing their daily duties.

Occupational stress and shift work may also affect nurses' performance by contributing to reduced concentration, slower responses, difficulty in decision-making, decreased motivation, and lower job satisfaction. In addition, prolonged physical and psychological fatigue may reduce nurses' ability to perform their professional responsibilities efficiently and maintain an appropriate level of nursing performance.

Therefore, there is a need to assess occupational stress and shift work and their effects on nurses and their nursing performance. It is also important to identify the factors associated with occupational stress and shift work and the coping strategies used by nurses to deal with work-related stress. Understanding these factors may help provide information for improving nurses' working conditions, supporting their well-being, and enhancing their professional performance and efficiency.

Justification

Nurses are directly involved in providing continuous care to patients, so their ability to perform their duties effectively is important for maintaining safe and high-quality nursing care. However, occupational stress, heavy workload, staff shortages, and shift work may negatively affect nurses' physical and psychological well-being and their ability to perform their responsibilities effectively.

Studying these factors can help identify the main challenges experienced by nurses in their working environment. The findings may help nursing administrators and hospital management understand the factors affecting nurses' well-being and performance and may provide useful information for improving working conditions, organizing duties, and supporting nurses.

Understanding occupational stress and shift work among nurses may also help in identifying appropriate coping strategies and areas that require improvement. Therefore, this study is important for understanding the factors that may affect nurses' well-being and nursing performance and for supporting better working conditions and professional efficiency.

General Objective

To assess occupational stress, shift work, and their effects on nursing performance among nurses at Dongola Specialized Hospital, and to identify coping strategies used by nurses.

Specific Objectives

• To determine the level of occupational stress among nurses.

• To assess the effects of shift work on nurses' well-being and nursing performance.

• To assess self-reported effects on nurses, including fatigue, sleep disturbance, and concentration difficulties.

• To examine the relationship between occupational stress and nursing performance.

• To identify coping strategies used by nurses to deal with occupational stress and shift work.

• To identify work-related factors associated with increased occupational stress among nurses.

CHAPTER TWO: LITERATURE REVIEW

1. Occupational Stress Among Nurses in Public Hospitals of Khartoum State, Sudan (2016)

A cross-sectional study of 139 nurses in 14 public hospitals in Khartoum State identified workload and situations involving death and dying as important sources of occupational stress and highlighted the importance of workload management and support [1].

2. Influence of Shift Work on the Health of Nursing Professionals (2023)

Roman et al. reviewed the influence of shift work on nursing professionals' health, supporting the importance of considering shift schedules when assessing nurses' health and well-being [2].

3. Occupational Stress, Sleep Disturbance, and Presenteeism Among Shiftwork Nurses (2022)

Baek et al. studied 442 shiftwork nurses in South Korea and examined occupational stress, sleep disturbance, and presenteeism, reporting associations between occupational stressors and presenteeism [3].

4. Mental Workload and Job Performance Among Iranian Nurses (2021)

Pourteimour et al. studied 139 nurses caring for patients with COVID-19 and examined mental workload and job performance. Workload-related factors, frustration, and working shift were relevant to understanding nurses' performance [4].

Literature Review Summary

The reviewed studies indicate that occupational stress, workload, shift work, and sleep disturbance are important nursing issues. These factors may be associated with nurses' physical and psychological well-being and work performance. This study will assess these factors, self-reported effects on nurses, nursing performance, and coping strategies at Dongola Specialized Hospital.

CHAPTER THREE: METHODOLOGY

1. Study Design

A descriptive cross-sectional design will assess occupational stress, shift work, and their effects on nursing performance among nurses at Dongola Specialized Hospital. It will describe study variables and examine associations but will not establish causation.

2. Study Area

The study will be conducted at Dongola Specialized Hospital in Dongola, the capital of Northern State, Sudan. The hospital provides services through different departments and nursing units with different work conditions and shift patterns.

3. Study Period

The planned study period is August to December 2026, subject to approval and hospital administrative requirements.

4. Study Population

The population consists of registered nurses working at Dongola Specialized Hospital during the study period. The total population size is 287 nurses. Eligibility will be confirmed using approved inclusion and exclusion criteria.

5. Inclusion and Exclusion Criteria

• Inclusion: registered nurses working at the hospital during data collection who meet the criteria and provide informed consent.

• Exclusion: nurses absent throughout data collection, those who decline participation, or those who do not meet approved eligibility criteria. These criteria will be confirmed with the supervisor.

6. Sample Size

The sample size is calculated using the population-proportion formula with finite population correction because the total population is known.

$$n = (N \times Z^2 \times p \times q) / [d^2 \times (N - 1) + Z^2 \times p \times q]$$

Where N = 287; Z = 1.96 at a 95% confidence level; p = 0.5; q = 1 − p = 0.5; and d = 0.05 (margin of error).

$$n = [287 \times (1.96)^2 \times 0.5 \times 0.5] / [(0.05)^2 \times (287 - 1) + (1.96)^2 \times 0.5 \times 0.5]$$

n ≈ 164.5; rounded up: 165 nurses.

7. Sampling Technique

Simple random sampling is proposed if an up-to-date list of eligible nurses is available. Each eligible nurse will have an equal chance of selection. If a complete sampling frame is unavailable, the technique must be revised and approved before data collection.

8. Data Collection

Data will be collected using a structured self-administered questionnaire aligned with the study objectives. It will cover demographic and work-related information, occupational stress, shift patterns, self-reported effects on nurses such as fatigue, sleep disturbance and concentration, nursing performance, and coping strategies. After permissions are obtained, eligible nurses will be invited to participate voluntarily. Questionnaires will be checked for completeness and stored securely.

9. Study Variables

• Independent variables: occupational stress and shift-work characteristics, including shift type and work schedule.

• Outcome variables: self-reported nursing performance and effects on nurses' well-being, including fatigue, sleep disturbance, and concentration difficulties.

• Background variables: age, sex, educational qualification, years of experience, and relevant work-related characteristics in the approved questionnaire.

10. Data Analysis

Data will be checked, coded, and entered into SPSS or approved equivalent software. Frequencies, percentages, and suitable measures of central tendency will summarize the data. Appropriate inferential tests may assess associations depending on data type and distribution. Specific tests and significance level will be finalized with the supervisor or statistician.

11. Ethical Considerations

Administrative permission will be obtained from the university, relevant health authority, and hospital before data collection. Participation will be voluntary and informed consent obtained. Participants may decline or withdraw without penalty. Unnecessary identifying information will not be collected; responses will be confidential, securely stored, and used only for the stated academic purpose. Data collection will begin only after required approvals.

CHAPTER FOUR: WORK PLAN AND BUDGET

12. Time Table

This timetable records work completed by the group up to 17 October 2026 and the activities planned next. Dates may be adjusted according to approvals and hospital arrangements.

Activity	Aug	Sep	Oct	Nov	Dec	Status
Proposal preparation	✓	✓				Completed
Literature review	✓	✓	✓			Completed
Questionnaire draft and sample-size calculation			✓			Completed
Ethical and administrative approvals			○	○		Planned
Data collection				○		Planned
Data entry and analysis				○	○	Planned
Final report writing and submission				○	○	Planned

13. Budget

The budget has not yet been determined because the research group has not completed the planning required to estimate actual expenses. Expected costs will be identified and calculated after the research activities and requirements have been finalized. The budget will then be reviewed and approved by the research supervisor before submission.

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