University of Dongola
Faculty of Medicine& Health Sciences

Research Proposal

Title

Prevalence and Contributing Factors of anxiety During OSCE among Fifth -and Sixth -Year Medical Students at the Faculty of Medicine ,University of Dongola , in 2026

Submitted by :

Hasseba Adil Mohammed

Breeg Zuhair Musaad

Shareefa Abdelbasit Mohammed

Samar Fadlelseed Mohammed ahmed

Supervisor

Al.Mowafag Anwer Omer

MBBS

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1.Introduction

1.1 Background

Anxiety is a common psychological response experienced by medical students during academic and clinical examinations. Medical education is considered highly demanding because students are required to acquire extensive theoretical knowledge, clinical competence, communication skills, and professional behavior under stressful conditions. Examination-related anxiety may negatively affect concentration, confidence, memory, and academic performance among medical students. [1] The Objective Structured Clinical Examination (OSCE) is one of the most widely used methods for assessing clinical competence in medical education. It evaluates students' history taking, physical examination, communication skills, clinical reasoning, and procedural abilities through a series of structured stations. Although the OSCE is considered reliable and objective, many students perceive it as highly stressful and anxiety provoking. [2,3]

Several studies have shown that anxiety during OSCE examinations is common among medical students and healthcare trainees. Factors contributing to anxiety include fear of failure, inadequate preparation, time limitation at stations, direct observation by examiners, unfamiliar examination settings, and lack of selfconfidence. Excessive anxiety may impair students' ability to perform effectively during examinations and may influence both academic achievement and psychological well-being. [1,4,5]

Clinical-year medical students are particularly vulnerable to stress because of increased academic workload, repeated assessments, and responsibility for patient care. Fifth- and sixth-year medical students frequently undergo OSCE examinations as part of their clinical training, making them more susceptible to anxiety and emotional stress. [4]

The Objective Structured Clinical Examination (OSCE) was developed to provide a standardized and objective method for evaluating clinical competence among healthcare students. Compared to traditional oral and clinical examinations, OSCE allows assessment of a wide range of clinical skills in a structured environment. [6] Despite its advantages, the OSCE is frequently associated with high levels of stress and anxiety among students. Anxiety is defined as a feeling of tension, nervousness, fear, and worry that may interfere with an individual's performance and psychological well-being. Studies conducted worldwide have demonstrated that OSCE examinations can

significantly increase students' anxiety levels before and during the examination process. [1,7]

Researches has identified multiple contributing factors associated with OSCE anxiety, including limited preparation time, fear of negative evaluation, unfamiliar clinical scenarios, examiner attitude, and pressure to obtain high grades. Inadequate coping strategies and poor psychological support may further increase stress levels among students. [4,7]

In Sudan, anxiety among medical students represents an important mental health concern. Previous studies have reported a high prevalence of anxiety and stress among Sudanese medical students due to academic pressure and challenging educational environments. However, limited research has specifically addressed anxiety during OSCE examinations among students at the Faculty of Medicine, University of Dongola. [8]

Understanding the prevalence and contributing factors of anxiety during OSCE examinations is important for improving students' academic experiences and mental well-being. Identifying these factors may help medical schools develop supportive interventions and strategies to reduce anxiety and improve examination performance. [9,3]

Therefore, this study aims to assess the prevalence and contributing factors of anxiety during OSCE among fifth- and sixth-year medical students at the Faculty of Medicine, University of Dongola.

1.2 Problem Statement

The OSCE is an essential clinical assessment tool used in medical education; however, it is associated with considerable anxiety among medical students. Excessive anxiety during OSCE examinations may negatively affect students' confidence, concentration, communication skills, and academic performance. Although anxiety during OSCE has been investigated internationally, there is limited information regarding its prevalence and contributing factors among fifth- and sixth-year medical students at the Faculty of Medicine, University of Dongola. Therefore, this study seeks to assess the prevalence of anxiety and identify the factors contributing to anxiety during OSCE examinations.

[1,8]

1.3 Research Questions

- What is the prevalence of anxiety during OSCE among fifth- and sixth-year medical students at the Faculty of Medicine, University of Dongola?
- What are the contributing factors associated with anxiety during OSCE examinations?
- Is there a relationship between anxiety level and academic year among medical students?
- Does anxiety affect students' performance during OSCE examinations?

1.4 Research Hypothesis

Anxiety during OSCE examinations is highly prevalent among fifth- and sixth-year medical students.Factors such as fear of failure, inadequate preparation, examiner behavior, and time limitation significantly contribute to anxiety during OSCE examinations. Increased anxiety levels are associated with poorer examination performance among medical students.

1.5 Justification

Anxiety during OSCE examinations may negatively influence students' academic performance, confidence, and psychological well-being. Identifying the prevalence and contributing factors of anxiety is important for improving the educational environment and supporting medical students during clinical assessments. [1,7],Furthermore, there is limited local research addressing OSCE -related anxiety among Sudanese medical students, particularly at the Faculty of Medicine, University of Dongola. The findings of this study may help faculty members and policymakers develop strategies to reduce anxiety and improve students' clinical learning experiences. [8]

2. Objectives

2.1 General Objective

To assess the prevalence and contributing factors of anxiety during Objective Structured Clinical Examination (OSCE) among fifth- and sixth-year medical students at the Faculty of Medicine, University of Dongola. [1]

2.2 Specific Objectives

To determine the prevalence of anxiety during OSCE among medical students. [2]

To identify the factors contributing to anxiety during OSCE examinations. [3] To assess the relationship between anxiety level and academic year among medical students. [4]

To evaluate the effect of anxiety on students' performance during OSCE examinations. [5]

To provide recommendations that may help reduce anxiety during OSCE examinations among medical students. [6]

3. Literature Review

a. Background

Anxiety is a psychological and physiological response commonly experienced by medical students during high-stakes examinations. In medical education, students are frequently exposed to stressful assessment methods such as the Objective Structured Clinical Examination (OSCE), which is designed to evaluate clinical competence in a structured and standardized manner. Although OSCE is considered an objective assessment tool, it is often associated with significant levels of anxiety that may affect students' cognitive performance, communication skills, and clinical reasoning. [10,11,12]

b. Globally

Globally, multiple studies have reported that OSCE is a major source of examination anxiety among medical and health science students. Factors such as time pressure, fear of negative evaluation, unfamiliar stations, and direct observation by examiners have been consistently identified as major contributors. Research also indicates that high anxiety levels are negatively associated with OSCE performance, particularly in clinical-year students. [11,12,13,14]

International literature further suggests that students with poor coping strategies or limited preparation time experience significantly higher anxiety levels compared to their peers. [13,14,15]

c. Middle East and North Africa (MENA) Region

In the MENA region, studies have shown that OSCE-related anxiety is highly prevalent among medical students. Research from countries such as Saudi Arabia, Egypt, and Jordan indicates that academic pressure, competitive grading systems, and lack of structured preparation sessions contribute significantly to stress levels during OSCE examinations. [16–17]

Additionally, cultural expectations and fear of failure in high-stakes examinations increase psychological stress among students in this region. Some studies also highlight that institutional support systems such as mock OSCEs and feedback sessions can reduce anxiety levels. [18,17]

d. Nationally (Sudan)

In Sudan, anxiety among medical students has been recognized as a growing academic and mental health concern. Studies conducted in Sudanese universities report high prevalence of general anxiety among medical students due to heavy academic workload and limited psychological support systems. [19,20]

However, there is limited published research specifically addressing OSCE-related anxiety among clinical-year students. This highlights a clear gap in the literature, particularly regarding fifth- and sixth-year medical students who are regularly exposed to OSCE assessments. [20]

e. Locally (University of Dongola)

At the Faculty of Medicine, University of Dongola, no sufficient published studies have directly assessed anxiety during OSCE examinations among medical students. Fifth- and sixth-year students are particularly affected due to repeated exposure to clinical assessments and OSCE-based evaluations. Therefore, this study is important in providing baseline data on prevalence and contributing factors of OSCE-related anxiety in this institution. [21].

4. Methodology

4.1 Study design

A cross-sectional study

4.2 Study area

The study was conducted at the Faculty of Medicine, University of Dongola, Sudan, which is responsible for training medical students through theoretical and clinical education, including OSCE as part of student assessment. [1]

4.3 Study population

The study population included all fifth- and sixth-year medical students at the Faculty of Medicine, University of Dongola. The total population size was 330 students.

4.3.1 Inclusion criteria

The inclusion criteria for this study were:

1. Fifth-year and sixth-year medical students at the Faculty of Medicine, University of Dongola.
2. Students who have participated in OSCE examinations.
3. Students who agreed to participate in the study.

4.3.2 Exclusion criteria

1. Students who did not attend OSCE examination.
2. Students who are not fifth- or sixth-year medical students.
3. Students who refused to participate in the study.

4.3.3 Sample size

The sample size was calculated using Slovin's formula since the population size was known.

$$n = \frac{N}{1 + N e^2}$$

Where:

N = total population (330 students)

e = margin of error (0.05)

Substituting values:

$$n = \frac{330}{1 + 330(0.05)^2}$$

$$n \approx 181$$

Therefore, the final sample size was approximately 181 students. [1]

4.4 Sampling technique

A stratified random sampling technique was used. The students were first divided into two strata (fifth-year and sixth-year students), and then participants were selected randomly from each group proportionally to ensure fair representation of both academic years.

5. Methods of Data Collection

Anxiety will be assessed using the Generalized Anxiety Disorder-7 (GAD-7) scale, a validated seven-item self-administered questionnaire used to assess the severity of anxiety symptoms. Each item is scored from 0 to 3, giving a total score ranging from 0 to 21. Scores of 0–4, 5–9, 10–14, and 15–21 indicate minimal, mild, moderate, and severe anxiety, respectively.

Data will be collected using a structured self-administered questionnaire designed to assess the prevalence and contributing factors of anxiety during OSCE among fifthand sixth-year medical students. The questionnaire will include questions related to sociodemographic characteristics, level of anxiety during OSCE examinations, and factors contributing to anxiety such as fear of failure, time limitation, examiner behavior, and level of preparation.

The questionnaire will be distributed to the participants randomly. Data collection will be conducted during the study period in a confidential and organized manner to ensure the privacy of participants and the accuracy of responses.

5.1.Data Preparation and Cleaning

All collected data will be checked for completeness, consistency, and accuracy before analysis. Data will be entered into a computer **SPSS** (Statistical Package for the Social Sciences) version 31. Chi-square (χ^2) test will be used to assess relationships between categorical variables. Independent t-test will be used for comparisons involving continuous variables A p-value < 0.05 will be considered statistically significant. Logistic regression models to identify predictors of awareness, treatment, and control. Results will be displayed using tables, charts, and graphs for clarity.

6. Ethical Considerations:

Prior to the commencement of the study, ethical clearance will be obtained from the community medicine department at faculty of medicine Dongola University as well as from the Northern state Ministry of Health. Written or verbal informed consent will be obtained from all participants after explaining the purpose, procedures, benefits, and risks of the study in a language they understand, data **confidentiality** will be maintained through **Anonymization**.

7. Expected Outcomes

This study is expected to determine the prevalence of anxiety during OSCE among fifth- and sixth-year medical students at the Faculty of Medicine, University of Dongola. It is also expected to identify the main factors contributing to anxiety during OSCE examinations, including fear of failure, time limitation, examiner behavior, and inadequate preparation.

Furthermore, the findings of this study are expected to increase awareness about the psychological impact of OSCE examinations on medical students and provide baseline data that may help faculty members and decision-makers develop strategies to reduce anxiety and improve students' academic and clinical performance.

8. Work Plan and Time Frame (Gantt chart):

activity	Month 1	Month 2	Month 3	Month 4
Proposal writing &Submission				
Data collection				
Data entry &analysis				
Report writing				
Submission& defense				

9. Budget Estimate for Research Study

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□□All costs are estimated in Sudanese bound (SDG).

Item	Description	Estimated Cost (SDG)
Internet fees	Researching, downloading	70.000
Data Entry and Analysis	Manual data input/ SPSS or R access	400.000

Contingency (5–10%)	Unforeseen expenses	200.000
Ethical Approval Fees		6.000
Total Estimated Budget		676.000

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