Short Research Article

MEDICAL STUDENTS' PERSPECTIVE ABOUT INFLUENCING FACTORS OF ANXIETY DURING OBJECTIVE STRUCTURED CLINICAL EXAMINATION: A DESCRIPTIVE STUDY

ABSTRACT .

Aims: Objective Structured Clinical Examination (OSCE) is a versatile multipurpose evaluative tool that can be used to evaluate health care professionals or soon to be in a clinical setting. Students' performance in facing an exam consisted of their skills, knowledge, their condition, and their level of anxiety. Anxiety is defined by the American Psychological Association (APA) as an emotion marked by feelings of tension, worried thoughts, and physical changes such as increasing blood pressure, sweating, trembling, dizziness, or rapid heartbeat.

Study design: An analytic observational study with a cross-sectional research design

Place and Duration of Study: Faculty of Medicine, Hasanuddin University, Makassar, Indonesia. This study was hold from October until December 2021

Methodology: We suggest that an increase in anxiety could be caused by poor study habits. We gained 167 samples, which is determined by the *Lemeshow formula*, from the 2nd and 3rd-year students of Hasanuddin University Faculty of Medicine using a simple random side technique and they are given a questionnaire regarding anxiety and student perceptions, implementation of the objective structured clinical examination (OSCE) during the pandemic.

Results: There are 167 people that fulfilled the criteria from the second-and the third-year preclinical students. The importance of the OSCE exam, the majority of students answered very importantly as many as 121 people (72.46%). For the students' self-confidence/motivation statement items the majority of students answered very prepared as many as 77 people (46.11%). For the physicondition-related anxiety statement items, on the first point the disturbing thoughts during the exam the majority of students answered strongly agree as many as 70 people (41.92%). for the statement items of the exam process, in the first point, namely the concern for examiners, the majority of students answered strongly agree as many as 69 people (41.32%). We concluded that the majority of students feel that OSCE is very important, but they didn't feel confident regarding their own performance.

Conclusion: The student's anxiety is correlated with their preparation and self-confidence in facing hybrid OSCE

Keywords: anxiety, OSCE, self-confidence, students' preparation

1. INTRODUCTION

Objective Structured Clinical Examination (OSCE) is a multipurpose evaluating tool that can be used to evaluate health care professionals or soon to be in a clinical setting. It assesses competency based on objective testing through direct observation and is comprised of several "stations" in which the participants are expected to perform a variety of clinical tasks within a certain period of time. The skills and/or attitudes that are demonstrated have to pass certain criteria, which are set by the examiner, for the participants to succeed. The OSCE has been used for a long time to evaluate areas that are most critical for health care professionals, such is the ability to obtain/interpret data, problem-solve, teach,

communicate, and handle unpredictable patient behavior. Any other attempts to evaluate those areas in the old-fashioned clinical case examination will seem to be assessing theory rather than simulating practical performance. (1)

Student's performance in facing an exam consisted not only of their skills and knowledge alone, but also their condition and level of anxiety during the exam. Anxiety is defined by American psychological Association (APA) as an emotion marked by feelings of tension, worried thoughts, and physical changes such as increasing blood pressure, sweating, trembling, dizziness, or rapid heartbeat. People with this emotion may usually have recurring intrusive thoughts or concerns and may avoid certain situations out of worry. (2)

Anxiety is linked to fear and manifest as a future-oriented mood condition that consist of a complex behavioral response system correlated with preparation of an anticipated events or circumstances which are perceived as threatening. A pathological anxiety could be triggered when there is an overestimation of perceived threat or an erroneous danger appraisal of a situation which elicit an excessive and inappropriate responses from a person. (2)

High-level of anxiety is correlated with low levels of self-efficacy. Self-efficacy itself is a constructed social cognitive theory that can be defines as a personal belief in someone's capabilities. It determines how people feel, think, motivate themselves and behave. A strong sense of self-efficacy enhances human accomplishments and personal well beings, such as reducing stress and lowering the potential risk of depression. In contrast, people with weak self-efficacy tend to doubt their capabilities which lead to them avoiding difficult tasks which they view as threats. They have low aspirations and weak commitment to the goal they want to pursue and in result, falls as easy victims to stress and depression. In social cognitive theory, someone's perceived sense of efficacy plays a vital role in the arousal of student anxiety. Individuals who went through anxiety experience apprehension and avoidant behavior which often interfere with their performance in everyday life as well as in an academic situations. (3)

Study means to supply individual mental capacities by the acquisition of knowledge. Habit is something that is done regularly and on a scheduled, planned basis that is decided by oneself. Study habit therefore, is an activity performed regularly based on a schedule that is decided by oneself to widen someone's mental capacity by acquiring knowledge. Study habits are easy to improve and of the utmost importance if one wants to excel academically. Even the most intelligent student would not perform well if they do not possess decent study habits. Researcher suggests that poor study habits are problem areas for a lot of students which can lead to an increase of anxiety. Some studies even found correlation between time management and poor study habits with low academic performance. Poor study habits could stem from various of factors. In the present era, the current generation is busy most of the times with their electronic gadgets rather than their studies. This could cause failures in examination because students have poor study habits. A study performed have come to the conclusion that the level of test anxiety and study habits of the students is moderate. Therefore, there is a need for improvement of students' study habits so that it becomes effective and improve their academical performance. (4)

Students suffering from test anxiety often experience distraction during exams and problems in preparing for it. Several consequences of test anxiety include long duration of studying, increasing dropout rates at the university, exam failures, and physical as well as psychological impairment. Several factors have been shown to affect students' level of test anxiety and achievements, including their perception about their own knowledge and inability to learn. Test anxiety itself reflects students' complaints of lacking time to prepare for the exams or to study the materials, or being dissatisfied with overall academic performance in previous assessments. Some studies even reported that test anxiety is more prevalence in female students rather than the male students. Test preparation during the semester is challenging, and most students prefer to study on the free period just before the exams and on the eve of the exams. (5)

This research has been conducted to measure the anxiety levels of students from Medical Faculty year 2020-2018 in Hasanuddin University during OSCE, as well as to show the predisposition factors in anxiety during OSCE.

2. MATERIAL AND METHODS

This research is an analytic observational study with a cross-sectional research design. That is, data concerning the independent and dependent variables will be collected at the same time. This research was conducted at the Faculty of Medicine, Hasanuddin University Makassar, from November to December 2021. The population of this study were all students of the Hasanuddin University Faculty of Medicine. Sampling was carried out using a simple random side technique, and the number of samples was determined using the Lemeshow formula.

Data collection in this study was used a questionnaire containing questions about the anxiety and student perceptions about its influencing factors. Based on the validity test results to 5 respondents with the same characteristics, but outside the research location, the results obtained were 15 questions on anxiety variables and student perceptions that were

declared valid. Furthermore, the questionnaire questions were tested for reliability using the method and the results obtained that the research variables were very reliable. This research questionnaire was answered using a Likert scale of 1-5, namely 1 when the statement strongly disagrees with the respondent's opinion and 5 when the statement strongly agrees with the respondent's opinion. In addition, the questionnaire also has 1 column of surveyor notes to fill in the respondent's affect, mood, and autonomic symptoms.

This questionnaire is to identify students' levels of anxiety and perceptions before the OSCE. Questionnaires containing respondents' answers are then collected, and data processing is carried out, including editing, coding, transferring, and tabulating. Statistical analysis in this study used the univariate method, which is a method that aims to describe the characteristics of each variable under study.

3. RESULTS AND DISCUSSION

There are 167 people that fulfilled the criteria from the second- and third-year preclinical students. The data in this study were collected by conducting direct interviews when students were in the waiting room (quarantine) with previously informed consent being asked for interviews.

3.1 The Correlation between Level of preparation to Anxiety on OSCE Exam

Self-readiness is an individual state in which a person is ready to study before an exam. A person who is not ready to take an exam will have difficulty preparing himself, including maturity and growth, perceptions, and other factors (6). The factors associated with test anxiety are poor preparation, poor time management, and weak reading skills. The level of anxiety decreases in students who are actively involved in the learning process and participate in class activities. Study preparation can help manage test anxiety (5). According to Judha et al, someone's level of readiness and their level of anxiety when facing the OSCEs were positively correlated. In general, students who have sufficient self-preparedness have the highest levels of anxiety, while students with good self-preparedness, on the other hand, have moderate levels of anxiety, and students with less self-preparedness, have mild levels of anxiety (6).

Table 1. Student perspective factors and anxiety during OSCE

STATEMENT ITEMS	SCORES (n/%)									
	1		**2**		**3**		**4**		**5**	
1. The importance of the OSCE exam for students	2	1. 20 %	1	0.60%	4	2.40%	39	23.35%	121	72.46%
2. Student concerns about attending OSCE	6	3.59%	24	14.37%	35	20.96%	48	28.74%	54	32.34%
3. Adequate preparation for OSCE	38	22.75%	50	29.94%	55	32.93%	18	10.78%	6	3.59%
4. Students don't sleep well before exams	30	17.96%	32	19.16%	30	17.96%	41	24.55%	34	20.36%

Note: point 1 = strongly disagree; point 2 = disagree; point 3 = neutral; point 4 = agree; point 5 = strongly agree

Based on table 1, out of 167 people who filled out the questionnaires that have been distributed, it is known that for the student preparation statement items, the first point stating the importance of the OSCE exam, the majority of students answered very important as many as 121 people (72.46%), for the second point which stated that students were worried about taking the exam majority of students answered very worried as many as 54 people (32.34%), the third point which asked about sufficient preparation, the majority of students answered normal as many as 55 people (32.93%), and for the fourth point which stated that students lacked sleep before the exam the majority of students answered agreed as much as 41 people (24.55%).

3.2 The Correlation between Self-Confidence and Anxiety

Anxiety is a common emotion in which we often experience a feeling of unease, nerves, apprehension, fear, or concern. The anxiety level among students may interfere with everyday functioning like studying, their daily activities, and social life. Anxiety is a significant predictor of academic performance and various studies have shown that students with more anxiety will achieve lower academic performances, and a higher level of anxiety is associated with poorer academic

performance (7). Anxiety, self-insecurity, fear, and a sense of being an outcast are examples of psychological situations that may arise because of low self-confidence (8). Based on the test faced, there was a significant correlation between test anxiety and self-confidence. There is a significant relationship between test anxiety and pre-test self-assessment performance (9). There are gender differences in test anxiety, and it was observed that female students had more test anxiety than male students and those with more self-confidence had less test anxiety (10). According to a study by Pebriyana, students self-confidence increases or decreases with their anxiety levels. Anxiety and self-confidence are related to each other in students (11). A study by Dimenggo et al. shows that self-confidence and anxiety have a significant negative correlation in the moderate category. Therefore, as self-confidence increases, anxiety will decrease, and vice versa (12). This may be explained by the fact that students with higher academic self-confidence are likely to work harder and be more persistent in their studies (13). Study findings by Akbari et al found that 79.2% or more than half of students agreed that having confidence in exams can decrease anxiety and help students do better on exams. In the study, it was found that students with self-confidence experienced increased participation, decreased test anxiety, increased interest in goals, grew in comfort with the lecturers and classmates, and also shared their experiences in class (8).

Table 2. Students' self-confidence and anxiety during OSCE

STATEMENT ITEMS	SCORES (n/%)									
	1		**2**		**3**		**4**		**5**	
1. Ability to face exams	4	2.40%	0	0.00%	27	16.17%	59	35.33%	77	46.11%
2. Confidence in own performance	30	17.96%	33	19.76%	50	29.94%	33	19.76%	21	12.57%
3. Consequences of failing after the exam	10	5.99%	9	5.39%	29	17.37%	60	35.93%	59	35.33%
4. Feel today's test is difficult for theirself	20	11.98%	29	17.37%	58	34.73%	37	22.16%	23	13.77%

Note: point 1 = strongly disagree; point 2 = disagree; point 3 = neutral; point 4 = agree; point 5 = strongly agree

In table 2, it is known that for the students' self-confidence/motivation statement items, the first point which states the ability to face the exam, the majority of students answered very prepared as many as 77 people (46.11%), the second point which asked about confidence in their own performance, the majority of students answered normal. as many as 50 people (29.94%), for the third point that asked the consequences of failing after the exam the majority of students answered ready as many as 60 people (35.93%), and for the fourth point that they felt that today's exam was difficult the majority of students answered normal as many as 58 people (34.73 %).

3.3 The Correlation between physical condition and anxiety

Previous study has found that although some exams related anxiety can improve test-preparing performance, excessive amounts of it can impair student competence (14). This is associated with several things that occur due to anxiety that arises in the facing exams. Ineffective studying through studying all night before exams, lack of review and revising of course material studied are major factors leading to exam related anxiety. Anxiety associated with exams can be characterized by excessive worrying, depression, nervousness, and irrelevant thoughts. Lifestyle problems include inadequate rest, insufficient physical activity, poor nutrition, and poor time management (15). Thus, anxiety can also affect the physical condition of students when they facing exams

Table 3. Students' self-confidence, physical condition and anxiety during OSCE

STATEMENT ITEMS	SCORES (n/%)									
	1		**2**		**3**		**4**		**5**	
1. Annoying thoughts while going to the exam	4	2.40%	7	4.19%	30	17.96%	56	33.53%	70	41.92%
2. Feelings of discomfort (tension/ restlessness/ not concentrating) during the exam	7	4.19%	18	10.78%	45	26.95%	54	32.34%	43	25.75%
3. Feeling shaking/ pounding/ sweating/ shortness of breath/ nausea during the exam	35	20.96%	35	20.96%	32	19.16%	36	21.56%	29	17.37%
4. Feelings of sluggishness/ sadness/ loss of interest due to exam preparation	32	19.16%	41	24.55%	50	29.94%	28	16.77%	16	9.58%

Note: point 1 = strongly disagree; point 2 = disagree; point 3 = neutral; point 4 = agree; point 5 = strongly agree

In table 3, it is known that for physical condition related anxiety statement items, on the first point the disturbing thoughts during the exam the majority of students answered strongly agree as many as 70 people (41.92%), on the second point they asked for uncomfortable feelings such as tense / nervous / not concentrating when the majority of students answered agree that 54 people (32.34%) agreed, for the third point the feeling of shaking/ palpitation/ sweating/ shortness/ nausea during the exam, the majority of students answered agreed as many as 36 people (21.56%), and the fourth point was about feeling lethargic/sad/lost. interest due to exam preparation the majority of students answered normally as many as 50 people (29.94%).

3.4 The Correlation between perceptions of student's readiness and anxiety

One of the things that contribute to students' anxiety is exams. Previous studies have identified several forms of student anxiety when facing exams, which include students having inadequate study strategies and preparation for exams, being aware of these deficiencies, knowing that they are unprepared for exam situations, and worrying about that, or they are already adequate strategies for studying and preparing for exams that they use, but get distracted during the exams, or some students believe they have an adequate strategy, however, they do poorly on the exams, and they wonder why (16). Students' perceptions about their inability to prepare for exams well affect their level of anxiety and can even affect their achievement results (5).

Based on a previous study that found a relationship between perceptions of readiness in facing exams and anxiety, showed that lack of preparation for exams, lack of effective study skills, and inappropriate preparation can lead to poor performance in the preparation process are some reasons that make students have low confidence and even feel anxious in facing exams. However, this study also shows that even though students feel they are well prepared for exams, they still feel high anxiety (16,17). Additionally, students recognize that grades affect their studies and their performance on exams, so they prepare well to get good grades. However, the results showed that students felt anxious even when they had studied and were ready for the exam (16).

Furthermore, other study found that students' perceptions of their ability to learn were correlated with their anxiety in facing exams, so that the presence of anxiety can be a motivating factor for students in preparing for exams well. However, too much can lead to other problems, such as physical and mental health disorders which can ultimately affect student achievement (15)

Table 4. Students' perspective about exam process and anxiety during OSCE

STATEMENT ITEMS	SCORES (n/%)									
	1		**2**		**3**		**4**		**5**	
Exam Process:										
a. Worries about examiner subjectivity	12	7.19%	10	5.99%	26	15.57%	50	29.94%	69	41.32%
b. Worried about technical problems during the exam	21	12.57%	19	11.38%	39	23.35%	59	35.33%	29	17.37%
c. Worries about non-objective scoring rubrics	24	14.37%	23	13.77%	53	31.74%	37	22.16%	30	17.96%

Note: point 1 = strongly disagree; point 2 = disagree; point 3 = neutral; point 4 = agree; point 5 = strongly agrees

In table 4, it is known that for the statement items of the exam process, in the first point, namely the concern for examiners, the majority of students answered strongly agree as many as 69 people (41.32%). on the second point about concerns about technical problems during the exam, the majority of students answered agree as many as 59 people (35.33%), and on the third point, namely concerns about non-objective assessment rubrics, the majority of students answered normally as many as 53 people (31.74%).

4. CONCLUSION

We concluded that the majority of students feels that OSCE is very important, but they didn't feel confidence regarding their own performance. This condition correlated with the majority of students who experience anxiety regarding OSCE that makes them restless before the exam. Besides that, the implementation of hybrid OSCE makes the students feel worry about technical mistakes that could happen during the examination

CONSENT

All authors declare that 'written informed consent was obtained from the patient (or other approved parties) for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editorial office/Chief Editor/Editorial Board members of this journal.

ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

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DEFINITIONS, ACRONYMS, ABBREVIATIONS
OSCE   Objective Structured Clinical Examination
APA   American Psychological Association