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QUALITATIVE STUDY OF ANXIETY FACING BLOCK EXAMINATIONS AMONG MEDICAL STUDENTS AT FACULTY OF MEDICINE, UNIVERSITAS AHMAD DAHLAN

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ABSTRACT

Background: Medical students face examinations more frequently compared to students from other faculties. Examinations are one of the causes of anxiety commonly experienced by medical students, leading to both physical and psychological responses. Effective coping mechanisms in response to stressors are necessary for medical students as a defense mechanism. **Objective:** This research aims to explore the causes of exam anxiety, the contributing factors to anxiety and the coping mechanism used by medical students. **Methods:** The research adopts a qualitative descriptive design, the sample consist of active medical students from Faculty of Medicine, Ahmad Dahlan University who have faced block examinations. Sample selection was done using a test- anxiety inventory, with participants chosen from each academic year and divided into focus group discussion (FGD) sessions. The FGD results were subsequently analyzed using content analysis in the form of research problem categories. **Results:** The discovered data consists of the main research issues, which are student's anxiety when facing block exams, the factors causing anxiety, and student's coping mechanisms. **Conclusion:** The high anxiety group portrays block exams as a subjective matter and tends to lead to anxiety, students in low anxiety group predominantly utilize problem-focused coping mechanism.

Keywords: *Anxiety, Medical Student, Block Examinations, Coping Mechanism*

INTRODUCTION

Anxiety is a part of human life that can be experienced by anyone, it is defined as a state of apprehension of fear that arises due to real external danger or intrapsychic conflict, such as anxiety in facing an examination. This is referred to as normal, adaptive, or realistic anxiety. In contrast, anxiety as an abnormal condition is pathological, maladaptive, and unrealistic in nature.¹

There are two components of anxiety, including awareness of physiological sensations such as a rapid heartbeat, sweating, and conscious feelings of nervousness of fear. Anxiety tends to trigger confusion and distorted or erroneous perceptions.²

Data from the World Health Organizations in 2017 estimated that approximately 264 million people within the adult age range worldwide suffer from anxiety.³The basic health research revealed a prevalence of emotional mental disorders among the age group above 15 years, reaching 6,1% of the total population in Indonesia.⁴

Examinations are one of the causes of anxiety frequently experienced by medical students. Competency exams faced by medical faculty students consist of two types, Multiple Choice Questions (MCQ) or commonly referred to as block

examinations, and clinical skill exams known as Objective Structured Clinical Examinations (OSCE). The test conditions and high assessment standards. Combined with a competitive atmosphere can elevate anxiety levels, leading to confusion and distorted perceptions.

Medical students in block-based education systems experience higher levels of mental fatigue in the form of increased anxiety compared to the general population. The risk of mental health problems worsens during the learning due to dense schedule of medical students, which includes tutorials, skills labs, practicums, and the demand for self-directed learning outside of class hours. As a result, the pressure and workload tend to be more significant, leading to a greater impact on their mental and physical well-being compared to students in other educational programs.⁵

The interview conducted by the researcher on September 16, 2022, with 25 students from the 2019 cohort of the Faculty of Medicine at Ahmad Dahlan University, regarding block exams, revealed that 19 students experienced symptoms such as restlessness, difficulty concentrating during exams, and physical symptoms like stomach ache and dizziness. Some students admitted that these symptoms arose due to



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concern about their block exams outcomes not aligning with the efforts they put into preparing the exams.

The research conducted by Alghifari in 2016 elaborates on the Objective Structure Clinical Examination (OSCE) as an assessment that induces anxiety among medical faculty students. The factors triggering this anxiety are categorized into internal and external factors.⁶

There hasn't been any research conducted yet regarding the qualitative study of anxiety related to block exams as one of the assessment tools for medical faculty students. Therefore, this study is being carried out to delve deeper into the anxiety experienced by students.

METHODS

This research employs a qualitative descriptive approach with the aim of obtaining an overview of the phenomenon of examination anxiety. The study was conducted at the Faculty of Medicine, Ahmad Dahlan University, in March 2023. The research participants were active medical students from Ahmad Dahlan University, comprising the first-year intake in 2019 up to the 2022 intake. The Test Anxiety Inventory German (TAI-G), developed by Hodapp in 1991 was used as the instrument to select participants from the four batches of the Faculty of Medicine at Ahmad Dahlan University, totalling 250 individuals.

Subsequently, 2-3 representative participants from each batch were chosen using the purposive sampling method, based on their gender and test anxiety scores. Informants with the lowest test anxiety scores were assigned to the low anxiety FGD, comprising 8 individuals. On the other hand, informants with the highest test anxiety scores were included in the high anxiety FGD, consisting of 9 individuals.

Data analysis for this research utilized the Miles and Huberman analysis approach from 1992, which involved data collection, data reduction, data presentation and verification through content analysis. The validity and reliability of the data were ensured through data source triangulation, which involved cross-referencing the results from transcriptions, participant observations, and group observations. Theory triangulation was utilized to compare relevant theoretical perspective.

RESULTS

This study aimed at exploring students anxiety experiences, there were a total of 17 participants, with 8 in the low anxiety FGD group and 9 in the high anxiety FGD group. Among the participants from the 2022 batch, one had the highest test anxiety score compared to the other batches.

Therefore, the number of participants in the high anxiety group differed from the low anxiety group. This participant with the highest test anxiety score was included to investigate any new phenomena related to anxiety experiences. Once appropriate participant criteria were identified, the low anxiety FGD was conducted offline at the Faculty of Medicine, while the high anxiety FGD was conducted online through a Zoom Meeting.

The data collected consisted of categories related to the research problem, including perceptions of block examinations, and coping mechanism employed by the student. The research findings are represented in a table 1-6.

Table 1. Content Analysis of Low Anxiety Group Related to Block Exam

FGD Group	Low Anxiety Group	
	Category	Block exam as evaluation
Code	<ul style="list-style-type: none"> Block examinations serve as measure of understanding Learning evaluation throughout a block A benchmark to asses capabilities 	<ul style="list-style-type: none"> Psychological changes in the form of anxiety and worry

This category generally describes student's perception of block exams. According to them, block exams serve as an evaluation tool for learning during a specific block period.

"... our benchmark to assess our performance during that block is how well we have grasped the material." (FGD B4)

Specific findings among the high-anxiety group reveal that block exam are perceived as pressure-inducing situations. The result of the observation conducted by the facilitator indicate differences in how participants answered the questions.



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Table 2. Content Analysis of High Anxiety Group Related to Block Exam

FGD Group	High Anxiety Group	
Category	Block exam as evaluation	Anxiety over the block exam
Code	<ul style="list-style-type: none"> A means to assess the proficiency of one block Benchmark for knowledge and significant pressure 	<ul style="list-style-type: none"> Psychological changes: panic, anxiety, and worry Physical changes: palpitations, excessive, sweating, tremor, stomach ache

When asked about their perception of block exams, whereas participants from the high-anxiety group directly linked their answers to what they felt during the block exams, including both physical and psychological changes.

“...it’s like it’s always the same, but because we know when the time comes, it’s like the anxiety has been building up for a long time. Then there’s a lot of pressure, especially for me, who is not used to overthinking so much. It’s quite overwhelming, making...making me feel dizzy. But actually, I don’t want to be dizzy, it’s just feeling dizzy on my own.” (FGD A3)

Based on the coding results, the feeling and experiences of participants in facing block exams very significantly. These aspects can be generally generalized as anxiety. Psychological changes are a common finding among the two anxiety groups in the second category.

“Usually, like, beforehand, I used to get really anxious. But once the exam starts, it’s fine.” (FGD B7)

“...besides that, the anxiety sometimes continues after exam, like earlier, I studied this, but it turns out my answers were wrong, like that. I feel anxious after the exam.” (FGD A1)

Physical symptoms, as listed in table 2, were predominantly reported by participants in the high-anxiety group.

“... during exams, you can’t see the anxiety from my expression, but my hands get sweaty. So, when, I’m typing, my hands get all sweaty and I feel a bit panicky if I lose track of the material.” (FGD A3)

“... and then usually, my stomach hurts, and my acid reflux acts up.” (FGD A1)

Table 3. Content Analysis of Low Anxiety Group Regarding Factors Causing Anxiety

FGD Group	Low Anxiety Group			
Category	Factors causing anxiety in facing block examinations			
Sub-Category	Internal Factors	External Factors		
Code	<ul style="list-style-type: none"> Insufficient preparation Low self-confidence Previous experiences 	<ul style="list-style-type: none"> Noisy PERSADA Discrepancy between lecturer’s material and block examination questions Lack of practice questions provided 		

The results regarding the factors causing test anxiety show that students with high levels of anxiety have more contributing factors to their anxiety compared to those with low levels of anxiety. The factor of internal causes of anxiety is defined as factors that originate from within the students themselves. On other hand, the factor of external causes of anxiety is defined as factors that stem from outside the individual or originate from the environment.

Table 4. Content Analysis of High Anxiety Group Regarding Factors Causing Anxiety

FGD Group	High Anxiety Group			
Category	Factors causing anxiety in facing block examinations			
Sub-Category	Internal Factors	External Factors		
Code	<ul style="list-style-type: none"> Lack of self-efficacy Cramming study habits Changing credit hours for the block 	<ul style="list-style-type: none"> PERSADA workload Unsupportive friendship environment Being monitored by exam invigilators Observing peers reviewing material they haven’t studied 		

The internal factors causing anxiety that frequently emerged in the FGD transcripts were related to inadequate preparation. Participants were acutely aware that preparation plays a crucial role in reducing anxiety during block exams.



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“For example, I get anxious if I use a cramming study system, you know, the last-minute cramming...” (FGD A1)

“Actually, self confidence is highly correlated with my level of preparedness, usually...” (FGD A4)

Participants from the 2019 batch, who had low anxiety during the focus group discussion, expressed that they were accustomed to facing block exams, resulting in a sense of normalcy regarding the anxiety experienced.

“Because, you know, it’s like following... or getting through block exams several times, so block exams have become quite ordinary to me.” (FGD B1)

The results of the coding indicate that many participants focused more on external factors as the causes of anxiety compared to internal factors. One of the issues that received significant attention from both high-anxiety and low anxiety groups is the exam questions.

“Sometimes, what I have experienced in block exams is that there are questions that were not covered in the material provided by the lecturer. So, I sometimes encounter difficulties because the content by the lecturer’s power point presentation or the one delivered by the lecturer is slightly different from the questions in the block exam...” (FGD B4)

In participants from the 2022 batch, both the high-anxiety and low-anxiety groups expressed complaints or concerns regarding the PERSADA (Pesantren Kiai Haji Ahmad Dahlan) program.

“We’ve been trying hard, and then there’s an additional burden, which is the Persada program. In Persada, we have morning and evening sessions. After finishing the maghrib session, we have to study our college subject first. Then, after the morning session, we have to memorize the hadiths and the Quran. So, from that point on, even though we have managed to get some grades, we still have the study while preparing for block exams, and it’s just exhausting...” (FGD A7)

Another external factor that is present only in the high-anxiety group is the exam invigilators. During block exams, there are usually 2 to 3 administrative staff members who supervise the examination room. Participants expressed that being

monitored by exam invigilators made them feel anxious and nervous.

“... I feel panicked and restless, my hand get sweaty, and I become all nervous. The administrators keep watching, and it makes me feel ever more nervous.” (FGD A3)

Table 5. Content Analysis of Low Anxiety Group Related to Coping Mechanism

FGD Group	Low Anxiety Group	
Category	Coping mechanism of students in facing block examinations	
Sub-Category	Emotion Focused Coping	Problem Focused Coping
Code	<ul style="list-style-type: none"> Sleeping Engaging in other activities Praying and seeking prayers from parents 	<ul style="list-style-type: none"> Reviewing material from power point slides and medical education clubs Maximizing lectures and taking notes of key points Finding comfortable learning methods Studying with study groups

The influence, the atmosphere, and support becomes external factors, one of the participants from the low-anxiety group reported the following.

“So, when we are preparing for the exam, it can get a bit noisy. Now, because we all live in the same dormitory, some friends have already studied. And just because they have studied, they keep coming to the room, disturbing those who are studying. It’s probably because we are in the same social circle with different people, so it’s a bit challenging to find the right place and the moment to study.” (FGD A7)

Table 6. Content Analysis of High Anxiety Group Related to Coping Mechanism

FGD Group	Low Anxiety Group	
Category	Coping mechanism of students in facing block examinations	
Sub-Category	Emotion Focused Coping	Problem Focused Coping
Code	<ul style="list-style-type: none"> Sleeping Accepting fate Surrendering to the exam results Seeking parental blessings 	<ul style="list-style-type: none"> Reviewing material from lecturers’ power point slides Studying using concept-based learning



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The next category pertains to participant's responses to the anxiety experienced during block exams, namely coping mechanisms. The research finding indicate that these responses are divided into two sub-categories: problem focused coping mechanism and emotion focused coping.

Based on the explanation and considering the coding results in this category of emotion focused coping, the responses of the participants facing block exam anxiety include praying, seeking blessings from parents, and surrendering to fate.

"For instance, before the exam, I always tell my parents because it's essential to seek their blessings. I believe in the power of prayers, the heavenly path. It can help ease anxiety when facing exams." (FGD A5)

The findings from both the low-anxiety and high-anxiety group indicate the presence of avoidance as coping mechanism to deal with stressors. Participants in both groups tend to avoid other issues as a way to cope with the stress they experience. In the high-anxiety group, one of the forms of emotion-focused coping observed is surrendering to the block exams, repeatedly mentioned in response to each question.

"Even though I try to study for the block exams while managing other things, when the results come out, I become indifferent. I have surrendered because I feel exhausted, and I no longer care about the grades." (FGD A7)

Problem focused coping is a coping strategy that focuses on addressing the problem-directly. It involves taking action or steps to solve a problem or assisting in problem-solving through information-seeking. A specific finding in the low anxiety group is that participants mentioned a problem solving approach of escaping from the dormitory when approaching block exam time. They do this to feel focused and comfortable while preparing the exams.

"So, when it's time for block exams, I choose study at home. I often escape to my boarding house (kos) when I have block exams. I block all my contacts, so no one can reach me in case of any emergencies." (FGD B8).

DISCUSSION

The research findings indicate that the participants perceive block exams as assessments of their learning comprehension during one block. This

aligns with the definitions of block exam, which are multiple choice questions assessments used to evaluate students knowledge in medical education.

The block system is a structured framework designed to organize daily schedules, create time units for classes, group materials, and facilitate more effective learning and scheduling. Students in the block-based learning system experience more stressors due to its demands for increased self-directed learning, a more packed lecture schedule, a higher number of practical and clinical skills sessions, and exam held every three weeks.⁷

Exams are stressors or sources of pressure, and anxiety is what students face when dealing with block exams. This is supported by the symptoms of anxiety experienced by students during block exams. This is supported by the symptoms of anxiety experienced by students during block exams, such as psychological changes like worry, panic, and nervousness. Physical changes include digestive disturbances, excessive sweating, trembling, and rapid heartbeat.⁸

Exam anxiety is a widely spread phenomenon where extreme nervousness arises from exam situations that trigger anxiety. Exam anxiety is a multidimensional construct encompassing worries, emotions, disruptions, fear of failure, self-esteem issues, and lack of self-confidence.⁹

The results of this study indicate that the causes of anxiety experienced by participants while facing block exams are divided into two factors: internal factors and external factors. Insufficient preparation is one of the causes of internal factor anxiety as reported by the participants. This is consistent with the research conducted by Duraku, where undergraduates students mentioned lack of preparation as a factor related to exam anxiety.¹⁰

Lack of self-confidence also serves as a factor contributing to anxiety when facing block exams. Anxiety becomes one of the inhibiting factors that prevent individuals from presenting themselves with confidence. The higher an individual's self confidence level, the lower their anxiety tends to be. This is related to self-efficacy, which is defined as an individual's belief in their ability to perform tasks or actions to achieve desired outcomes.¹¹

Internal factors contributing to anxiety in the low anxiety FGD are related to individual experiences. An individual's response to anxiety can



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be influenced by their past experiences, which serve as lessons in facing challenges.¹² Experience can be influenced by age and education level, where individuals with greater age and higher education tend to have an easier time absorbing information and exhibiting wise behavior due to having undergone block exams multiple times.

External factors that contribute to anxiety stem from an environment called PERSADA, which is not conducive and thus uncomfortable for learning. PERSADA, being a religious-based dormitory, is a novel experience for some individuals, necessitating a deeper adaptation process to navigate it successfully. If an individual's adaptability is limited, it can lead to anxiety.¹³

The 2022 cohort, being the most junior, certainly required a greater degree of adaptation compared to the more senior cohorts. Referring to the findings of the low anxiety focus group, PERSADA is a mandatory one-year dormitory program that requires higher levels of adaptation and self adjustment. Research by Purwono indicates that poor adjustment to dormitory life can result in anxiety.¹⁴

The learning environment is a part of the interconnected framework between learning and teaching activities that can influence students. It surrounds students and plays a role in the learning process. Another external factor that can affect a student is the non-social environment, consisting of three components; the natural environment, instrumental factors, and subject matter factors.¹⁵

In the high and low anxiety groups, differences between the content delivered by instructors and the questions appearing in exams are highlighted as one of the external factors contributing to anxiety when facing block exams. This forms a component of both instrumental factors and subject matter factors, which can impact students.

In the high anxiety group, it is revealed that an unsupportive social environment for studying adds to student's anxiety. This can influence their performance during exams due to the lack of motivation from their surroundings.¹⁶

Cramming with last minute study sessions is an external factor contributing to anxiety. Previous research has indicated that pushing the brain to think beyond its usual capacity can create an imbalance between the right and left hemispheres of the brains.

As a result, concentration diminishes, compounded by poor sleep quality which leads to feeling of fatigue, excessive drowsiness, and heightened anxiety.¹⁷

A specific findings among participants in the high anxiety group pertains to the external factor of being monitored by exam proctor, which leads to anxiety during exams. Factors influencing anxiety during competency tests include exam proctors and the testing environment.¹⁶

Students further elaborate that the absence of practice questions makes them unable to envision the potential content of exam questions. This lack of practical exposure is perceived to heighten anxiety among students, as relying solely on the material presented by instructors is considered insufficient for effective study.

Another external factor identified within the low anxiety group is the absence of practice questions provided by the faculty for study material. However, in some universities, they offer question sets from previous years as study material. Learning necessitates practice as a vital part of the learning process, there exists an influence between the intensity of practicing questions and the outcomes achieved.¹⁸

Within the high anxiety group, it's noted that observing friends reviewing material that hasn't been studied beforehand leads to distraction and anxiety. This can be related to factors that influence academics. According to previous research, factors influencing student's academics encompass teaching material, tools, student themselves, instructors, the environment. Student interaction with the material, and interactions among students.¹⁹ In this case, observing friends reviewing materials represents an interaction among students.

Block exams, considered as stressors, will elicit a response from an individual. One of these responses comes in the form of coping mechanisms, which are defined as a sequential mental and behavioral process employed by individuals to manage the stressor.²⁰ Participant's responses to anxiety when facing block exams are divided into two subcategories: emotion focused coping and problem focused coping.

Lazarus and Folkman further elaborate on problem focused coping strategies, including planful problem solving; involves making specific effort,



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confrontative coping; tackles problems in ways that go against established norms, and seeking social support; entails seeking assistance in the form of information, physical aid, and non-physical assistance.²¹

Previous research has revealed that medical student generally employ problem focused coping when facing the stressors they encounter. The study also identified a relationship between problem focused coping and the level of awareness as well as the type of learning approach.²²

Emotion focused coping involves individuals regulating their emotional responses to stress without addressing the source of the problem. Students who tend to employ emotional focused coping are those who perceive problems as difficult to control. Therefore, in managing stress, they regulate their emotional responses to adapt to high-pressure situations.²³

In medical school students, the emotional focused coping strategy is found to be effective when dealing with issues like losing interest in coursework, struggling to concentrate, facing difficulty in remembering and comprehending course materials, and engaging in excessive pleasure-seeking activities.²⁴

The factors determining which strategy is used more frequently or often depend greatly on a person's personality and the level of stress they experience from a situation or problem. People tend to employ problem focused coping when dealing with issues they perceive as controllable, such as those related to school or work. Conversely, they tend to resort to emotion focused coping strategies when confronted with problems they find challenging to control.²⁵

CONCLUSION

Generally, anxiety occurs in the majority of students when facing block exams. The subjective portrayal of block exams is conveyed by the high anxiety group as characteristic of anxiety. The triggering factors for this anxiety can be categorized into internal and external factors. Both groups perceive internal and external factors of anxiety when facing block exams. When dealing with the stressor of block exams, students with low anxiety tend to employ problem focused coping strategies more, while students with high anxiety level

predominantly utilize emotion focused coping strategies.

ETHICAL APPROVAL

This study was registered and approved by the Research Ethics Committee of Universitas Ahmad Dahlan (No. 012303018).

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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