

THE IMPACT OF MENTAL HEALTH DISORDERS ON UKMPPD OUTCOMES AMONG MEDICAL STUDENTS AT UDAYANA UNIVERSITY

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ABSTRACT

Medical education is highly sought after, yet medical students face heavy academic demands that can impact their mental health. Mental health issues, such as stress, anxiety, and depression, significantly affect well-being and life skills. These issues also influence the results of the Indonesian National Medical Competency Exam (UKMPPD), which includes MCQ and OSCE tests. This study aims to examine the impact of mental health issues on UKMPPD outcomes for medical students at Udayana University. The study employed a cross-sectional method with an analytical design and total sampling technique, involving 215 professional students from the 2016 and 2017 cohorts who had taken the UKMPPD at the Faculty of Medicine, Udayana University. The study variables were UKMPPD scores and DASS-21 scores. Inclusion criteria were students who had taken the UKMPPD and signed consent forms, while exclusion criteria included students with mental disorders or those who did not submit the research questionnaire. Results showed that 50% of students from the 2016 cohort experienced anxiety, and 36% from the 2017 cohort experienced stress, as measured by DASS-21 scores. The UKMPPD pass rate was 91% for the 2016 cohort and 92.17% for the 2017 cohort. The independent non-parametric test for all population groups across cohorts yielded $p > 0.05$, indicating no significant impact of mental health issues on UKMPPD scores. Further research should consider factors beyond mental health issues that may influence UKMPPD scores, such as social conditions, personal issues, and students' quality of life.

Keywords: Medical Doctor Profession Education. Mental Health Disorders, UKMPPD

INTRODUCTION

Medical education is a highly sought-after academic field, attracting a wide range of individuals. The aspiration to succeed as a doctor who can heal communities motivates many to pursue this education. Behind the esteemed image of the profession, however, the journey through medical studies is challenging, requiring medical students to continuously put in diligent and rigorous effort in their educational activities. This burden is compounded by various stressors, such as peer pressure, financial strains, and family expectations, all of which can impact the physical health of medical students. Beyond physical health, these factors also have a significant impact on the mental health of medical students as they pursue their studies.¹

Generally, mental health is a condition in which an individual does not suffer from psychological illness or psychiatric symptoms, maintains harmony among mental functions, and is able to cope with daily life challenges.² Mental health can also be defined as a state where a person has the ability to understand their capacities, manage daily life stress, work productively and effectively, and actively

participate in society.³ There are three classifications of mental health disorders frequently experienced by medical students in their daily learning process: stress, anxiety, and depression.⁴

Stress is the body's reaction to pressures due to demands and obligations that must be fulfilled within a specific timeframe. Anxiety is a condition in which a person feels excessively uneasy, fearful, and worried about the future. Depression is a mental disorder accompanied by decreased energy levels, reduced interest in daily activities, and prolonged feelings of sadness.⁵

The mental health issues experienced by medical students certainly have a substantial impact on their academic activities, particularly in the assessment process or learning evaluation in the form of exams. One such exam, which serves as an exit examination for medical students, is the Medical Professional Program Student Competency Examination (UKMPPD), a key evaluation instrument prior to the doctor's oath-taking and continuation to the next stage of education.⁶ This exam consists of two types of assessments: a multiple-choice question (MCQ) section

conducted via computer (Computer-Based Test) and a clinical examination skills test (Objective Structured Clinical Examination) conducted through direct practice. Preparing for the UKMPPD requires high levels of focus and commitment to study every subject matter that will be tested. Unfortunately, in this preparation process, many medical students experience mental health disorders due to the intense learning demands. This situation impacts their UKMPPD scores, which often fall short of the expected and established average standards.⁷ This study aims to examine the impact of mental health disorders on the UKMPPD scores of Medical Professional Program students at Udayana University.

LITERATURE REVIEW

Mental Health Disorders

Mental health disorders are conditions in which a person experiences psychological or mental disturbances that disrupt well-being, psychological physiological functions, and the ability to cope with daily life challenges. These disorders can be triggered by various internal and external stressors. Individuals with mental health disorders often endure self-destructive suffering, which negatively impacts their performance and daily activities.²

Generally, there are several primary symptoms associated with mental health disorders. The first symptom is restlessness and excessive mental burden. Individuals experiencing mental health issues tend to feel extremely uncomfortable and internally conflicted throughout the day, often harboring feelings of threat, urgency, and insecurity about hypothetical events. They may feel overwhelmed and burdened by numerous responsibilities, which can lead to resignation, hopelessness, and various abnormal behaviors. One commonly displayed behavior is aggression—excessive anger directed at specific targets in a harsh manner. Another prevalent behavior among these individuals includes self-harm or suicidal ideation, where they perceive these actions as the most effective solution to avoid enduring their distress.³

The second symptom is disorientation and delusions. Disorientation is a condition where a person experiences memory loss regarding fundamental aspects of their life, often forgetting three key elements: location, time, and identity of others. This is demonstrated by forgetting basic information, such as their current location, date and time, and family members. Delusions, on the other hand, are false perceptions and statements about reality, misaligned with facts, logic, and cultural norms, with resistance to correction or input regarding the disclosed facts. Delusions, also known as delusional beliefs, are firmly held convictions disregarding their accuracy. Common types include persecutory, referential, grandiose, guilt, nihilistic, somatic, religious, jealous, sexual, and control delusions.³

The third symptom is emotional and social life disturbances. Emotional disturbances involve thinking and feeling issues triggered by internal or external stimuli,

leading to excessive thoughts and actions. Those with mental health issues often feel surrounded by stressors, leading to exhaustion and irrational behaviors. These mental health issues also significantly disrupt public interactions, manifesting in impaired social life.³

The symptoms exhibited by individuals with mental health disorders are indicators of underlying problems in their lives and mental health. Each symptom can indicate one of three classifications of mental health disorders: stress, anxiety, and depression. These aspects are interconnected and may have long-term effects on sufferers.⁵

The first aspect is stress. Stress is a response generated by the body when encountering external or internal stimuli, resulting in altered organ functions. Stress is the body's nonspecific response to demands and pressures. When the demands are overwhelming, this is known as distress. A major contributor to stress is psychosocial stressors, representing environmental conditions that significantly alter one's internal state, necessitating adjustments to face incoming stimuli. Common psychosocial stressors include marital problems, household issues, interpersonal relationships, work, finances, education, environmental conditions, legal concerns, and chronic illness.⁵

The second aspect is anxiety. Anxiety is a condition where an individual experiences excessive restlessness, fear, and worry about the future, making them fearful of beginning new endeavors or engaging in activities, often preferring to remain inactive. Anxiety affects various aspects of one's life, including difficulty concentrating and motor tension, as well as physical symptoms such as headaches, trembling, sweating, palpitations, and shortness of breath. Generally, anxiety arises from frustration over significant pressures, causing feelings of shock, guilt, helplessness, and severe threat. If prolonged, anxiety may escalate into panic attacks. In daily life, anxiety manifests as hesitation to seize opportunities, fear of trying new things, reluctance to resolve conflicts, fear of public speaking, and anxiety over formative tests.⁵

The third aspect is depression. Depression is an emotional alteration that affects thinking patterns, resulting in prolonged sadness. The main symptoms include depressive affect (persistent sadness and crying), anhedonia (reduced interest and enthusiasm), and anergy (fatigue and passivity). Depression can also lead to associated symptoms, such as eating disorders, sleep disturbances, loss of concentration, low self-esteem, pessimism about the future, guilt, and suicidal thoughts. Individuals with depression often appear gloomy, lacking life enthusiasm, and hopeless without a clear reason. A U.S. study found that suicide due to depression ranks as the sixth leading cause of death.⁵

Medical Professional Program Student Competency Examination (UKMPPD)

The UKMPPD is a summative exit exam for medical professional program students conducted nationwide. This exam aims to assess the quality of students' attitudes, skills, and knowledge based on the Indonesian Doctor Competency Standards (SKDI). The exam prepares graduates for the ASEAN economic community, provides learning feedback to medical faculties, evaluates educational quality across medical institutions, assesses values in attitude, skills, knowledge, scientific discipline, and professional ethics as the foundation of medical practice, and ensures qualified, competent graduates who meet national standards.⁶

In its implementation, all UKMPPD regulations are set by the Indonesian Medical Council (KKI), emphasizing students' attitudes, knowledge, and skills in addressing each given case. There are seven foundational aspects that form the blueprint for this competency exam, which include the following.⁸

Table 1. Seven Foundations Blue Print

Review Category	Aspect of Review		
Review 1	Doctoral Standards	Competency	
Review 2	Cognitive, Affective	Psychomotor,	
Review 3	Recall & Application		
Review 4	Disease Progression		
Review 5	Organ System/Structure		
Review 6	Health Service Performed	Actions	
Review 7	Level of Health Provided	Service	

UKMPPD comprises two exams: multiple choice questions (MCQ) conducted on computers (Computer-Based Test) and the Objective Structured Clinical Examination (OSCE) with hands-on practice. These exams are held about a week apart.⁷

Multiple choice questions (MCQ) are a test format in which students are instructed to select the single best answer from multiple provided options that accurately addresses the question. In the MCQ format, each question often presents a clinical case scenario, followed by five answer choices, with one being the most appropriate answer for the given case. This type of test is considered practical due to its objective nature and ease of computerized answer analysis. Furthermore, MCQs are a transparent testing format, providing students with accurate information. However, a drawback of MCQs is the limited answer choices, which may restrict students from expressing their individual reasoning. The main focus of MCQs is to evaluate students' understanding of patient management concepts necessary for medical practice.⁷

The Objective Structured Clinical Examination (OSCE) is a competency test conducted in an objective and structured manner through timed rotations across various

stations. This examination is termed objective as all students receive identical test scenarios, evaluated using a structured assessment form. During the exam, each student is assigned a rotation number and proceeds through each station sequentially. At each station, students are presented with questions and cases to address, all while being evaluated and supervised by examiners. Additionally, specialized equipment and mannequins are provided, allowing students to demonstrate skills as if in a real medical practice setting. The cases presented at each station test the students' reasoning abilities with respect to the given data.⁷

The UKMPPD passing standard is determined using the Angoff method. This method requires assessors to review each test item and estimate, for each one, the proportion of students who would answer correctly. These estimates are then aggregated across all items to calculate the minimum passing score. In establishing the passing threshold, each panelist estimates the minimal level of competency distinguishing passing from failing students. Practically, panelists estimate the proportion of 100 examinees expected to answer all questions correctly. The cumulative probability from each item forms what is termed the Minimum Passing Standard (KKM) by the panelist. The average MPS from all panelists establishes the official, standardized passing score for the exam.⁶

The Impact of Mental Health Disorders on UKMPPD Results

Mental health disorders such as stress, anxiety, and depression, stemming from daily life stressors, significantly impact the learning outcomes of medical professional program students, including UKMPPD exit exam results. Achieving high UKMPPD scores is a common goal for all students, which requires optimal preparation through effective study strategies and efficient time and self-management. Such preparation demands physical and mental health. Poor mental health can hinder students' ability to analyze study materials.⁹

Beyond everyday life stressors that can lead to mental health issues, preparation for the UKMPPD exam also stands as a significant contributor to stress, anxiety, and depression among students. This phenomenon identifies UKMPPD not only as a catalyst for exacerbating mental health issues but also as a common stressor that triggers such issues in the first place. One primary source of students' stress, anxiety, and depression before taking the UKMPPD is the passing standard. Students' efforts and hard work are channeled into a vision of achieving the highest possible scores, aiming to exceed the Minimum Passing Standard (KKM). A frequent concern among students is the tendency to overthink their own abilities when facing the exam, leading to worry and fear about the final outcome. Many students even undermine their own potential before the exam, thinking they will likely fail. This shifts the intended purpose of exam scores as a measure of success in their education into a stressor that threatens their well-being.⁷

The stressors arising from both the UKMPPD and surrounding environment become problematic for students preparing for the exam. When a student feels stressed, they focus all nonspecific burdens in their mind, perceiving those concerns as the sole focus at that time. This concentration of stress leads to poor focus and disorganized study habits, preventing thorough understanding of all the material. Students become more focused on future fears than on the material they should be preparing. The stress they experience also induces anxiety. Fear and worry during preparation diminish their ability to grasp each context they need to learn. Anxiety often leads individuals to repeatedly review a single worrisome topic instead of systematically reviewing the entire syllabus. This anxiety can eventually evolve into depression, which becomes a significant concern during exam preparation. When a student experiences depression, thoughts are dominated by feelings of exhaustion, incapacity, hopelessness, and a desire to escape it all. Such emotions lead students to feel demoralized, preventing them from effectively preparing for the UKMPPD.⁶

Research Roadmap

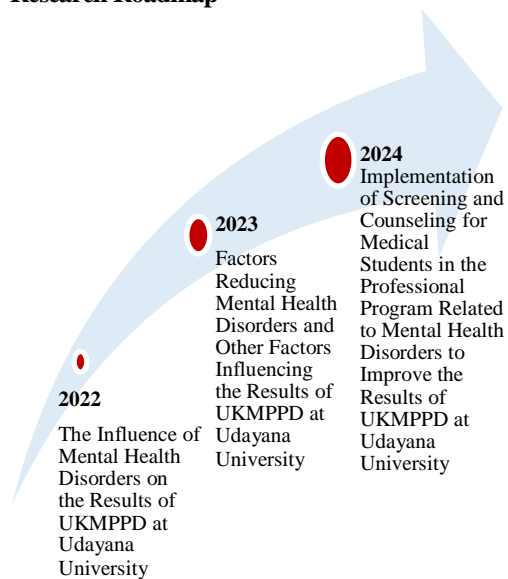


Figure 1. Research Roadmap

MATERIALS AND METHODS

This study utilized a cross-sectional method with an analytical research design. The sampling technique was total sampling, involving 215 professional students who had undertaken the Indonesian Medical Professional Competency Examination (UKMPPD) at the Medical Professional Program, Faculty of Medicine, Udayana University, specifically from the 2016 and 2017 cohorts. Inclusion criteria comprised medical professional students who had taken the UKMPPD and consented to participate in the study, while exclusion criteria included students with mental disorders and those who did not complete the research questionnaire.

The study took place at the Faculty of Medicine, Udayana University, and the Prof. Dr. I Goesti Ngoerah Gde Ngoerah General Hospital from December 2022 to December 2023. Data were collected by distributing a questionnaire to respondents, followed by structured interviews. The questionnaire consisted of two parts: the first section recorded the UKMPPD results of respondents, and the second contained statements related to mental health disorders, measured using the Depression Anxiety Stress Scales (DASS-21), with a total score ranging from 0-63, classified into several categories. Data processing and analysis were conducted using the Statistical Package for Social Sciences (SPSS) version 22.0, with stages including editing, coding, data input, and data analysis.

RESULTS

Subject Characteristics

The research was conducted at the Faculty of Medicine, Universitas Udayana, and the Prof. Dr. I Goesti Ngoerah Gde Ngoerah General Hospital, involving medical professional program students as respondents who had taken the Medical Professional Competency Test (UKMPPD) and were aware of their accuracy results. All respondents have agreed to the informed consent and were willing to complete the entire research questionnaire. The use of the accuracy results from the UKMPPD for research purposes has also been approved.

Out of the total population of 215 students, all met the inclusion criteria to be included as research subjects. In terms of distribution, 100 (46.5%) were from the 2016 cohort, and 115 (53.5%) were from the 2017 cohort. The distribution of the study population involved can be seen in Figure 2, Table 2, and Table 3.

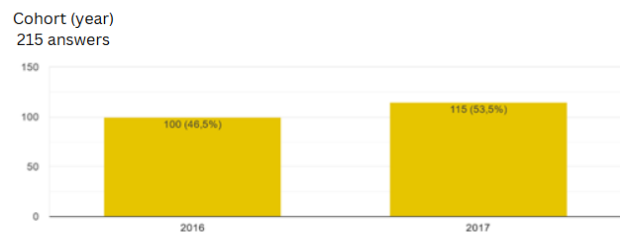


Figure 2. Distribution of the Cohort Year of the Research Population

Table 2. Distribution of the Degree of Mental Disorders in the 2016 Cohort Medical Professional Program Students

Degree of Mental Disorder	2016 (n(%))		
	Stres	Cemas	Depresi
Normal	11 (11)	5 (5)	11 (11)
Mild	8 (8)	2 (2)	24 (24)
Moderate	19 (19)	14 (14)	30 (30)
Moderate severe	29 (29)	29 (29)	29 (29)
Severe	33 (33)	50 (50)	6 (6)

Table 3. Distribution of the Degree of Mental Disorders in the 2017 Cohort Medical Professional Program Students

Degree of Mental Disorder	2017 (n(%))		
	Stres	Cemas	Depresi
Normal	36 (31,3)	22 (19,1)	31 (26,9)
Mild	18 (15,6)	10 (8,69)	18 (15,6)
Moderate	14 (12,1)	32 (27,8)	16 (13,9)
Moderate severe	23 (20)	25 (21,7)	23 (20)
Severe	24 (20,8)	26 (22,6)	27 (23,4)

UKMPPD Score Variable

Of the total population, 197 (91.9%) students successfully passed the UKMPPD, while 18 (8.1%) students did not pass. The cohort of 2016 had a lower passing percentage compared to the cohort of 2017, with a percentage difference of 1.1%. Meanwhile, the percentage of students failing the UKMPPD in the cohort of 2017 was lower compared to the cohort of 2016, with a percentage difference of 1.1%. The graduation data can be seen in **Table 4.**

How are your UKMPPD passing results?
215 answers

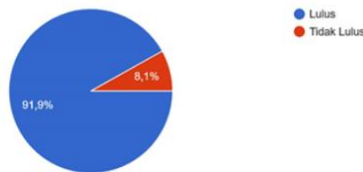


Figure 3. UKMPPD Graduation Data for 2016 and 2017 Cohort Students at the Professional Level

Table 4. UKMPPD Passing Result for 2016 and 2017 Cohort Students at the Professional Level

Cohort	UKMPPD Passing Result	Passing Percentage (%)	Failure Percentage (%)
2016	Lulus	91	9
	Tidak Lulus	9	91
2017	Lulus	106	7,83
	Tidak Lulus	9	92,17

DASS-21 Score Variable

Of the total population, the cohort of 2016 had a higher percentage of stress-related mental disorders <http://ojs.unud.ac.id/index.php/eum>
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compared to the cohort of 2017, with a percentage difference of 20.3%. Meanwhile, the cohort of 2016 also had a higher percentage of anxiety-related mental disorders compared to the cohort of 2017, with a percentage difference of 14.1%. Regarding depression-related mental disorders, the cohort of 2016 exhibited a higher percentage of depression compared to the cohort of 2017, with a percentage difference of 15.9%.

Bivariate Analysis

Table 5 shows that the results of the non-parametric independent sample test for all population groups across all cohorts have a p-value > 0.05. Therefore, it can be concluded that there is no significant effect between mental health disorders and the UKMPPD scores of medical professional students.

Table 5. Results of the Non-Parametric Independent Sample Test

Variable	p value
Cohort 2016	
Stress	0,11
Anxiety	0,74
Depression	0,56
Cohort 2017	
Stress	0,37
Anxiety	0,60
Depression	0,14

DISCUSSION

Mental health disorders are not significantly related to the UKMPPD scores of the 2016 and 2017 cohorts of medical professional students. This finding is in line with a study conducted by Lallo in 2013. Although the students in his study experienced mild anxiety due to the intense daily learning load, this actually had a positive impact on their exam results.¹⁰ Research by Bakhtiar in 2020 also showed that academic stress had no significant relationship with the academic performance of medical students.¹¹ A study at the Faculty of Medicine, Sam Ratulangi University, in the 2012/2013 academic year also found no significant relationship between students' anxiety and their final exam results.¹⁰ There are three main factors contributing to the lack of relationship between these two variables, including students' coping strategies, their perspectives on the UKMPPD, and a conducive learning environment.¹²

Coping strategies are steps taken to solve the problems that cause stress in an individual. They are ways to address mental health issues by reducing pressure and tension.¹⁰ Effective coping strategies can reduce stress levels and protect students from its negative effects. Conversely, stress levels tend to increase if not addressed with optimal coping strategies. In this case, the lack of a relationship between mental health disorders and UKMPPD results could be due to the 2016 and 2017 cohorts of medical professional students effectively implementing good coping strategies. As a result, the stress, anxiety, or depression they

experienced did not impact their UKMPPD scores. Stress coping can be done through problem- and emotion-focused coping, which focuses on addressing the problems and emotions causing stress. This can be achieved by seeking solutions to the problems being faced or rationalizing them.¹¹

The perspective of students towards the UKMPPD is another factor contributing to the lack of relationship between mental health disorders and UKMPPD scores. A person's response to an issue significantly impacts their mental state. If the UKMPPD is seen as a motivating challenge, students tend to have stronger resilience, which can reduce mental health disturbances. However, if the UKMPPD is viewed as a threatening setback, mental health issues are likely to increase. In this study, it is estimated that the medical professional students have a positive and motivating outlook on the UKMPPD. This perspective enables them to maintain their enthusiasm and not let the mental health disturbances caused by the heavy learning load affect their motivation or exam results. With a good perspective in preparing for the UKMPPD, students become more enthusiastic and motivated to achieve the best possible scores.¹²

Another factor contributing to the lack of negative impact of mental health disorders on UKMPPD scores is a conducive learning environment.¹³ The learning environment has a significant impact on the quality of learning and the outcomes that students aim to achieve. A conducive environment can enhance students' motivation, concentration, and interest in learning. It also reduces feelings of boredom and laziness in students. A conducive learning environment is one that provides an enjoyable atmosphere for students, enabling them to understand the material optimally.¹⁴

Group discussions and collaborative work are among the methods to create a lively and engaging learning atmosphere. Despite the anxiety everyone experiences, when studying together, students can share knowledge they have already learned and discuss any confusion they face. This encourages critical thinking and a deeper understanding in preparing for the UKMPPD.¹⁵ A conducive learning environment is also linked to learning styles that suit each student. Generally, there are three main learning styles among students preparing for the UKMPPD: visual, auditory, and kinesthetic. Visual learners focus on observation, auditory learners focus on listening and speaking, and kinesthetic learners focus on physical movement and practice. Selecting the appropriate learning style can accelerate understanding, allowing students to achieve the best possible UKMPPD scores.¹⁶

CONCLUSION AND SUGGESTIONS

For the entire population of students in this study, the average UKMPPD scores of the 2017 cohort were higher than those of the 2016 cohort. This study shows that the percentage of mental health disorders related to stress,

anxiety, and depression was higher in the 2016 cohort compared to the 2017 cohort. The mental health disorders experienced by the students in this study were not significantly related to their UKMPPD results, which may be attributed to coping strategies, perspectives on the UKMPPD, and a conducive learning environment. For further development, it is necessary to consider other factors beyond mental health disorders that may potentially influence UKMPPD scores, such as social conditions, personal problems, and students' quality of life.

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ETHICAL ASPECTS

This study adhered to ethical research standards by maintaining participant data confidentiality.

CONFLICT OF INTEREST

The authors declare no conflicts of interest related to this work.

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