

# THE INFLUENCE OF PSYCHOLOGICAL ASPECTS ON STUDENT SUCCESS IN THE INDONESIAN MEDICAL DOCTOR NATIONAL COMPETENCY EXAMINATION (UKMPPD) AT A MEDICAL FACULTY

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## ABSTRACT

**Background:** The success of medical professional education can be measured by The Indonesian Medical Profession Program Student Competency Test (in Indonesia known as UKMPPD). UKMPPD can also be used as an indicator of clinical year students' success in achieving competence based on the Indonesian Doctor Competency Standards (known as SKDI). The UKMPPD exam involve the cognitive domain, measured by the computer-Based Academic Test (CBT) and the psychomotor domain, measure by the Objective Structured Clinical Examination (OSCE). There are several factors that can affect students' success in UKMPPD, one of which is psychological factors namely optimism, motivation, anxiety, depression and fighting spirit.

**Aims:** This study aimed to measure the influence of psychological aspects on students' success in UKMPPD at the Doctor Professional Education Program (PSPD), Universitas Muhammadiyah Yogyakarta (UMY).

**Case Discussion:** This was an analytic observational with a cross-sectional design. It was conducted at PSPD UMY in 2018. There were 192 students of Universitas Muhammadiyah Yogyakarta (UMY) who underwent the UKMPPD exam in the August 2018 period, became the samples, aged 20-26 years. Students filled out standardized instruments (assessed optimism, motivation, depression, anxiety, fighting spirit).

**Conclusion:** It can be concluded that there is an influence of psychological aspects (optimism, motivation, depression, and anxiety scores) on UKMPPD pass.

**Keywords:** anxiety, depression, fighting spirit, motivation, optimism, UKMPPD

## PRACTICE POINTS

- This research was conducted to find out how important the impact of the psychology aspect in the success of UKMPPD.
- It can be used as the base knowledge in preparing UKMPPD by considering the psychological aspects.
- This can be a way to overcome the psychological aspects that interfere students' success in UKMPPD.

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## INTRODUCTION

The Indonesian Medical Doctor National Competency test (known as UKMPPD) is a nationally standardized medical competency achievement test that must be passed by medical student at the end of the medical professional education phase.<sup>1</sup> After passing the UKMPPD, students can be appointed oath as a doctor or Dentist to complete the doctor or dentist professional program.<sup>2</sup>

Various factors that affect one's success include psychological factors, which have a significant difference between how to process information, active or reflective learning styles and academic achievement.<sup>3</sup> One of the psychological factors that support student academic success is a moderate level of anxiety, which appears to be positively associated with academic achievement. Improving self-confidence, quality of interpersonal relationships and life satisfaction can improve academic ability and achievement, and can reduce the risk of depression.<sup>4</sup> In addition to being able to support academic achievement, psychological factors can hinder student academic success including the incidence of depression associated with a decrease in one's motivation to try so that it can affect a decrease in academic achievement.<sup>5</sup> Thus, both positive and negative psychological aspects can influence in students' success of UKMPPD.

Examination results are strongly influenced by the strength of one's motivation and optimism. Ubaydillah explained that being optimistic means believing in a better life and using that belief to take better actions to achieve better results.<sup>6</sup> High motivation and optimism will support in passing exams.<sup>7-10</sup> Apart from motivation and optimism, one's will also influences one's success. Adz-Dzakiey explained that adversity intelligence is a strong ability in a person in facing various difficulties in life.<sup>11</sup> Someone who has high fighting spirit will always be able to turn obstacles and difficulties into doors to achieve success. Optimism, self-confidence, motivation and high fighting spirit will encourage someone to make every effort to achieve the best results from what they do.<sup>12-14</sup>

On the other hand, psychological aspects such as anxiety and depression affect a person in their activities. Anxiety and depression affect a person in taking exams.<sup>12,15,16</sup> defined anxiety as a state of apprehension or a state of worry that complains that something bad is about to happen. Some characteristics of anxiety include physical characteristics, cognitive characteristics, and behavioral characteristics. Hall and Lindsey define anxiety as tension resulting from threats to security, both real and ordinary imagination.<sup>17</sup> In addition to its effects on motor and visceral functions, anxiety also affects a person's ability to think, perceive and learn. Anxiety tends to produce confusion and distortion of perception, not only of space and time but of people and the meaning of events. These distortions can interfere with learning by reducing the ability to focus attention, reducing memory, and disrupting the ability to connect one thing with another (association).<sup>18</sup> Someone who can manage anxiety before and during the exam can think calmly and do the exam well so that it will give good results.

Depression with symptoms of decreased interest and pleasure, feelings of guilt and worthlessness, decreased energy and susceptibility to feeling tired, changes in appetite, sleep disturbances and concentration.<sup>19</sup> Depression will also affect a person in carrying out their activities. This will affect the results, where people with depression will experience decreased enthusiasm and fighting spirit, so that it will have an impact on reducing academic achievement and daily performance achievements.<sup>5</sup>

Based on this background, optimism, motivation, fighting spirit, anxiety, depression and personality are factors that can influence UKMPPD to pass exams in medical professional education students. This study aims to measure the effect of the psychological aspect on student success in the Indonesian Doctors National Competency Test (UKMPPD) at the Medical Professional Education Program (PSPD), University of Muhammadiyah Yogyakarta (UMY).

**CASE DESCRIPTION**

This was an analytic observational study with a cross-sectional design. The research was conducted at the PSPD UMY, from July to September 2018. Students who met the inclusion criteria became the respondents. The inclusion criteria were: 1) final semester students of PSPD UMY, 2) aged 20-26 years, 3) taking the UKMPPD test for the period of August 2018; 4) willing to participate in research. The exclusion criteria were: 1) incomplete instrument filling, 2) students were not present when filling out the research instrument. The independent variable is the student's psychological condition (optimism, motivation, fighting spirit, anxiety, depression) which was assessed using standardized instruments. The dependent variable in this study was the graduation of UKMPPD. The instrument used was a psychological assessment instrument to assess aspects of optimism, motivation, depression, anxiety, fighting spirit. Research ethics was issued by the Ethics Committee of FKIK UMY. Research data were analysed as univariate, bivariate and multivariate tests using a computer program.

In this study, 192 respondents were involved from the Doctor Professional Education Program (PSPD), who took the UKMPPD in August 2018. Respondents consisted of 68 men (35.4%) and 124 women (64.6%), with an average age of 24.04 ± 0.5 years. The frequency distribution of the psychological scale can be seen in table 1.

The UKMPPD results conducted in August 2018 showed that more than 80% of students passed the CBT and OSCE tests, as shown in table 2.

The strength of the relationship between each psychological scale with the passing level can be seen in table 3 (CBT) and table 4 (OSCE).

**Table 1. Frequency Distribution of Psychological Aspects of Subject**

No	Psychological Aspects	Number of Students	Percentage (%)
1	Optimism Scale		
	Very High	84	43.8
	High	68	35.4
2	Motivation Scale		
	Average	40	20.8
	Very High	37	19.3
3	Depression Scale		
	High	54	28.1
	Low	101	52,6
4	Anxiety Scale		
	Mood Disorders	1	0.5
	Threshold Value	1	0.5
	Average	86	44.8
5	Fighting Spirit Scale 1 (Favourable)		
	Normal	104	54.2
	Weight	53	27.6
6	Fighting Spirit Scale 2 (Non-Favourable)		
	Average	63	32.8
	Light	76	39.6
7	Fighting Spirit Scale 1 (Favourable)		
	Flat	79	41.1
	Weak	113	58.9
8	Fighting Spirit Scale 2 (Non-Favourable)		
	Flat	94	49.0
	Weak	98	51.0
<b>Total</b>		<b>192</b>	<b>100</b>

**Table 2. The Results of CBT and OSCE**

No	Information	CBT exam	OSCE exam
1	Pass	163 (84.9%)	158 (82.3%)
2	Not pass	29 (15.1%)	34 (17.7%)
		<b>192 (100%)</b>	<b>192 (100%)</b>

**Table 3. Strengths of the Relationship between Each Psychological Aspect and the Success of CBT**

No	Psychological Aspects	r-value (correlation)	p-Value (meaning)	Interpretation
1	Optimism	0.933	0,000	Very strong
2	Motivation	0.558	0,000	Average
3	Depression	-0,586	0,000	Average
4	Anxiety	-0,534	0,000	Average
5	Fighting spirit I	-0.0084	0,406	-
6	Fighting spirit II	-0.0084	0.468	-

**Table 4. Strengths of the relationship between each psychological aspect and the success of the OSCE**

No	Psychological Aspects	r-value (correlation)	p-Value (meaning)	Interpretation
1	Optimism	0.962	0,000	Very strong
2	Motivation	0.576	0,000	Strong
3	Depression	0.610	0,000	Strong
4	Anxiety	-0.375	0.001	Weak
5	Fighting spirit I	0.071	0.436	-
6	Fighting spirit II	0.023	0.807	-

## DISCUSSIONS

As many as 192 students from the University of Muhammadiyah Yogyakarta (UMY) Medical Profession Education Program (PSPD) who underwent the UKMPPD exam for the August 2018 period became respondents. Respondents were divided into 68 men (35.4%) and 124 women (64.6%). The mean age of the respondents was 24.04 ± 0.5 years. The results showed that most students passed the UKMPPD test, with a pass rate of 84.9% on the CBT exam and 82.3% on the OSCE test.

UKMPPD is a national final exam which is not only a determinant of medical students becoming professional doctors, but is also used as an indicator of the success of the educational process. So it is often one of the stressors that triggers student anxiety. Anxiety can affect motor function and body organs, as well as affect thoughts, perceptions, and abilities in learning.<sup>20</sup> Anxiety that arises when facing exams will affect student performance. Based on the results of the psychological assessment that was carried out, 39% of students experienced mild levels of anxiety, 32.8% experienced moderate levels of anxiety and 27.6% experienced severe levels of anxiety. Anxiety affects the graduation of UKMPPD students ( $p < 0.05$ ). The results of other studies show that the anxiety factor affects the graduation of UKMPPD students ( $p < 0.05$ ). The results of this study are in accordance with the statement that students with low levels of anxiety perform better than students who experience moderate and high levels of anxiety<sup>21</sup> and also state that students who experience anxiety are doing exams better than students with high levels of anxiety.<sup>22</sup> An appropriate level of anxiety positively increases work efficiency, including learning ability,

while a high level of anxiety can negatively impact academic performance.<sup>23,24</sup>

In addition to anxiety, symptoms of depression also affect a person's success in carrying out their duties. Symptoms of depression are 1) dysphoric mood, 2) decreased interest and excitement, 3) decreased energy (tired easily), 4) disturbed sleep patterns, 5) eating disorders, 6) lack of confidence, 7) guilt, 8) pessimism, despair, 9) decreased concentration, 10) thoughts of self-harm/suicide. These depressive symptoms will make a person experience obstacle in completing their tasks.<sup>5</sup> Decreased concentration will interfere with a person's ability to focus on carrying out tasks including taking exams. The results showed that most students (54.2%) were normal (no symptoms of depression), 44.8% of students had moderate depression, and only 1% had a borderline score. Depression affects student graduation in UKMPPD ( $p < 0.05$ ). Previous research has shown the same result that depression affects a person's success. Other studies related to exams also show that exam success is affected by depression.<sup>4,25</sup> Depression causes biological changes that produce symptoms such as feelings of sadness and a persistent loss of interest, often accompanied by physical symptoms such as fatigue, pain or sleep disturbances. The presence of depressive mood sometimes appears as a symptom. The presence of a depressive disorder in a person can affect academic achievement and performance results, where there will be a decrease in achievement and performance due to decreased motivation and morale for sufferers of depression.<sup>24-26</sup>

On the other hand, several psychological aspects that influence a person's success in carrying out tasks are interpersonal relationships, self-esteem, and

life satisfaction.<sup>4</sup> Aspects of motivation, optimism and morale are psychological aspects that support success assessed in this study. The optimism of the research subjects is quite good. The results showed that most students (43.8%) had very high optimism, 35.4% had high optimism and 20.8% had moderate optimism. Optimism affects student graduation at UKMPPD ( $p < 0.05$ ). Seligman stated that optimism provides better resilience in the face of depression in the event of a disaster, higher performance at work, especially in challenging tasks and better physical health.<sup>27</sup> This is in line with previous research, where there is a significant relationship between self-efficacy and optimism with academic achievement. Self-efficacy and optimism play a role in increasing adaptive behavior that has an impact on positive self-development, which helps enhance a satisfying academic experience.<sup>28</sup>

The motivational aspect shows that most students (52.6%) have low motivation, 28.1% have high motivation and 19.3% have very high motivation. Motivation influences student graduation in UKMPPD ( $p < 0.05$ ). Motivation is a dynamic and complex structure that manifests in personal and professional life that determines a person's behavior to meet his needs or desires to achieve certain goals.<sup>29-31</sup> This study is in accordance with the results of research examining the relationship between personality, motivation and academic achievement of medical students in Romania which resulted in the conclusion that motivation has an important role in academic achievement by noting that persistent motivation, as well as engagement motivation are related to the dimensions of conscientiousness and conscientiousness. results achieved.<sup>32</sup>

The fighting spirit aspect shows that most students (58.9%) have a weak fighting power. In this study, student struggles did not affect student graduation at UKMPPD ( $p > 0.05$ ). Fighting spirit is a person's ability to take action and effort to progress optimally and overcome all difficulties to achieve certain goals.<sup>33</sup> The results of this study are different from previous studies which stated that fighting spirit has a close relationship with good performance, because good fighting spirit make a positive contribution to learning outcomes, high self-confidence, good

understanding of learning objectives, and morale. A high level can make a person believe that every small step will pay off and lead to future progress.<sup>34</sup>

The results showed that optimism, motivation, depression and anxiety had an effect on UKMPPD success, both on the CBT and OSCE exams. Aspects of motivation have a strong correlation in supporting the success of the CBT exam, while the aspect of optimism has a moderate level of correlation. Depression and anxiety have a moderate correlation in their effect on passing CBT. Aspects of motivation have a very strong correlation in supporting the success of the OSCE test, while the aspect of optimism has a moderate level of correlation. Depression has a moderate correlation in its effect on passing OSCE, whereas anxiety has a weak correlation. The relationship between optimism and passing the UKMPPD exam has the strongest relationship with an r value of 0.9 and a p value of 0.000.

In addition to psychological factors, many other factors play a role in passing the final competency test, namely adequate preparation, learning style, academic facilities, one's activeness, learning focus, clinical experience, understanding of the exam grid.<sup>35</sup> These factors are confounding factors, but not investigated in this study. The weakness of this study is that it only analyzes the psychological aspects that affect student graduation at UKMPPD, while other factors that affect graduation are not examined. In the future, there is a need for research that comprehensively analyzes factors other than psychological aspects.

## CONCLUSION

The conclusion of the study is:

1. The aspect of optimism has a positive effect on the subject's graduation in UKMPPD (CBT) with a very strong correlation level
2. The aspect of motivation has a positive effect on the subject's graduation in UKMPPD (CBT) with a moderate level of correlation
3. Aspects of depression and anxiety have a negative effect on the subject's graduation in UKMPPD (CBT) with a moderate level of correlation

4. The aspect of optimism has a positive effect on the subject's graduation in UKMPPD (OSCE) with a very strong correlation level
5. The motivational aspect has a positive effect on the subject's graduation in UKMPPD (OSCE) with a moderate level of correlation
6. Aspects of depression have a negative effect on the subject's graduation in UKMPPD (OSCE) with a moderate level of correlation
7. Anxiety aspects have a negative effect on the subject's graduation in UKMPPD (OSCE) with a weak correlation level
8. The aspect of fighting spirit has no effect on the subject's graduation in UKMPPD (CBT and OSCE)

### RECOMMENDATION

Activities to improve the psychological aspects of students need to be carried out by medical educational institutions, to support success in passing UKMPPD. Further research needs to be done to get the best practice of intervention in improving the psychological aspects of students.

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### COMPETING INTEREST

The authors declare that there are no competing interests related to the study.

### LIST OF ABBREVIATIONS

UKMPPD:	Uji Kompetensi Mahasiswa Program Profesi Dokter (Indonesian Medical Doctor National Competency Examination)
PSPD	: Program Studi Profesi Dokter (the Doctor Professional Education Program)
SKDI	: Standar Kompetensi Dokter Indonesia (the Indonesian Doctor Competency Standards)
CBT	: Computer-Based Academic Test

OSCE : Objective Structured Clinical Examination

### AUTHORS' CONTRIBUTION

**Nur Shani Meida** – developing research proposal, collecting data, data analysis, and publication manuscript

**Warih Andan Puspitosari** – developing research proposal and collecting data

**Ana Majdawati** – developing research proposal and collecting data

**Muhammad Arif Rizki** – data analysis and publication manuscript

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