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Resilience and Psychological Distress among UiTM Medical Students: The transitional gap

Nor Jannah Nasution Raduan [1], Nurul Izzatie Mohamad [1], Azlina Wati Nikmat [1], Emmy Amalia [2]

[1] Department of Psychiatry, Faculty of Medicine, Universiti Teknologi MARA, Malaysia
[2] Faculty of Medicine, Mataram University, Indonesia

jannahraduan@gmail.com, nizzatie97@yahoo.com, azlinawatinikmat@gmail.com, emmy.amalia.ea@gmail.com
Tel: : +60193688683

Abstract
The medical course is known to be demanding and critical. However, the relationship between resilience and medical students' psychological distress is barely known. This study investigated resilience and psychological distress among third-year UiTM medical students. A cross-sectional survey was conducted among 166 medical students in Universiti Teknologi MARA (UiTM) in 2019, assessing resilience and psychological distress. The study found that 38.0% had depressive symptoms, 31.9% reported anxiety, and 70.5% showed stress symptoms. A higher level of resilience was significantly associated with lower psychological distress.

Keywords: resilience, psychological distress, medical students.

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1.0 Introduction

In South Korea, in 2017, 18.6% of young adults (age 18-29) encountered psychological disorders at least once for the past year from 2006 to 2016 (as cited in Dohyun Lee, 2019). Based on a study, the prevalence of psychological distress among young adults is on the rise (37.7%) with a mean age of 22.71 (SD 1.940), showing that university students are prone to get psychological distress (Jia et al., 2018). Financial problems, the stress in achieving the academic target, increased female students' overuse of technology, and culture shock due to abrupt transition from home or high school phase to university or college may have contributed to the rise in psychological distress (Flatt et al., 2013). The prevalence of psychological distress among medical students was higher than in other academic programs in a study conducted in Malaysia (Salam et al., 2013) and in the US and Canada (Dyrbye et al., 2006). Medical students were exposed to many stressful events, especially when they entered their clinical years, also known as medical training. The norm for responding to this adversity is psychological distress. Hence a transition is needed to deal with these challenges using resilience. This study investigates the resilience and prevalence of psychological distress among year three medical students in UiTM. The study aims to identify the relationship between resilience and psychological distress among year three medical students.

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2.0 Literature Review

2.1 Medical student's experience

For year three, medical students, who had just started their clinical years, had to adapt to a lot of new things as they underwent this transition phase from pre-clinical to clinical years (Surmon et al., 2016). Adaptations lead to a high-stress level in clinical year students who have just undergone the transition (Abdalla et al., 2018). There are a lot of new challenges they had to face, such as poor team dynamics, challenging encounters with other staff, dealing with complex patients and death (Houpy et al., 2017). They also had to deal with the new learning environment, burdened with much workload and insufficient study time, causing a rise in psychological distress (Surmon et al., 2016). These challenges faced by medical students made the current research focuses on this group of students who undergo a big transitional gap.

2.1 Psychological Distress

According to World Health Organization (WHO), mental health is a "state of well-being in which a person realises his or her abilities, can cope with the normal stresses of life, can work productively, and can make a contribution to his or her community" (WHO, 2016). WHO defined psychological distress as due to depression, anxiety, and stress, where the two most common mental health disorders in the community are depression and anxiety (WHO, 2016, as cited in IPH, 2017). WHO (2016) described depression as persistent sadness, loss of interest or pleasure, feeling of guilt or low self-worth, sleep disturbance, feelings of tiredness, and poor concentration. On the other hand, anxiety is a feeling of uneasiness and stress as tension in the body and mind caused by physical, emotional, or mental factors. DASS-21 is a 21-item scale used as a screening tool to determine depression, anxiety, and stress. DASS-21 scale has categorised the severity of stress, anxiety and depression based on specific scores. For pressure, a score from 0-9 is considered as 'normal', 10-13 as 'mild', 14-20 as 'moderate', 21-27 as 'severe', and more than 28 as extremely severe. As for anxiety, the 'normal' category is from 0-7, 'mild' from 8-9, 'moderate' from 10-14, 'severe' from 15-19, and 'extremely severe' for scores more than 20. The stress scale starts from 0-14 for 'normal', 15-18 for 'mild', 19-25 for 'moderate', 26-33 for 'severe' and more than 34 as 'extremely severe' (Loviband & Loviband, 1995).

2.2 Resilience

Resilience is a trait that enables one to adapt and cope with adversity in life (Ahmad et al., 2018; Connor et al., 2003;). Resilience may affect a person's psychological distress and emotional well-being (Bore et al., 2016). Thus, it is an important quality to be acquired by a medical student, especially for survival in clinical years, as their well-being could be affected negatively as going through complex clinical events (Houpy et al., 2017). The Connor-Davidson Resilience Scale (CD-RISC) is a tool developed in 2003 comprising 25 items to measure resilience. CD-RISC 10 and CD-RISC 2 are the briefer version of CD-RISC 25. Our study utilises CD-RISC 10 to measure our sample's resilience, in which scores range between 0 and 40. The mean score for the general population in a study in the USA is 32.1 (Conner & Davidson, 2003).

3.0 Methodology

This cross-sectional study included third-year students from the five years of the medical course of Universiti of Teknologi MARA (UiTM) in Sungai Buloh, Selangor, Malaysia. This study was conducted from 1st July 2019 to 2nd August 2019. We provided an email link to an electronic survey to all 227 third-year medical students. Students who did not complete the questionnaires answered the questionnaires twice or refused to participate in the study were excluded. Surveys were available for two weeks starting at the end of June. This period encompassed the whole period of the elective clinical programme. The questionnaires were distributed outside exam time and after classes had finished so the students could be assessed at a time nearest their basal state. Participation was voluntary and anonymous. The Medical and Research Ethics Committee and Elective Committee of the Faculty of Medicine, Universiti Teknologi MARA, approved the study.

Surveys were conducted via Google Forms (https://docs.google.com/forms). The self-report questionnaire employed took approximately 5 minutes to answer. The data collected comprised three components. The initial part was socio-demographic details like age, gender, race, religion, the year started, education, marital status and smoking status. Next, we assessed resilience using the 10-item version of the Connor Davidson Resilience Scale (CD-RISC 10). The respondents were required to rate how true (on a scale of 0 to 4) 10 statements were concerning the respondent. Possible scores range from 0 to 40, with 40 representing a more resilient score. The CD-RISC 10 is the briefer version of CD-RISC 25, which assesses resilience (Connor & Davidson, 2003). The scales were the most dominant in measuring the ability to cope with stress and resilience as they have the best psychometric properties (CD-RISC, 2003; Salisu et al., 2018). Finally, DASS-21 measured the pattern of psychological distress. This 21-item scale, the short version of the DASS 42-item questionnaire, was a set of three self-report scales designed to simultaneously measure the negative emotional states of depression, anxiety and stress (DASS, 1995). In Malaysia, the instrument has been validated (Musa et al., 2007) and used for medical students in the local population (Al-Ani et al., 2016; Fadli et al., 2016). The respondents needed to describe their conditions according to four scales; "0-Did not apply to me at all", "1-Applied to me to some degree, or some of the time", "2-Applied to me to a considerable degree or a good part of the time" and "3-Applied to me very much, or most of the time".

The data collected were keyed into Excel for Windows, and Data analyses were performed using IBM SPSS 24.0. Descriptive analysis with measurements of frequency (percentage), mean and standard deviation was used to express socio-demographic variables, including age, gender, years of education, smoking status, and the sample's psychological distress and self-reported resilience measures.

Independent t-tests were conducted to compare and examine the results of any difference in resilience and gender, years started education and smoking status. Bivariate analyses using Spearman Rank Correlation were performed to investigate the associations between psychological distress and self-report resilience. All statistical tests were two-sided; the significance level was set at 0.05, and confidence intervals of 95% were adopted for all analyses.

4.0 Findings

The descriptive analysis of the socio-demographic profile of study participants UiTM 3rd year medical students in Table 1 shows that out of a total of 227 third-year medical students, 166 (73.1%) participated in this study, with 35 (21.1%) being males and 131 (78.9%) were females. The mean age of participants in this study is 22.17 (SD = 0.666). About 83.7% (n=139) of the participants have been enrolled in medical schools for three years, while 10.2% (n=17) have been in medical schools for four years, and the rest 6% (n=10) have been enrolled for five years. Out of the total sample, only 5 (3%) have been reported to be smokers, and the rest, 161 (97%), are non-smokers.

Table 1 Descriptive analysis of the socio-demographic profile of study participants (UiTM 3rd year medical students)

Variable (n=166)	n	(%)	Mean (±SD)
Age			22.17 ± 0.666
Gender			
Male	35	21.1	
Female	131	78.9	
Years in Medical School			
3	139	83.7	
4	17	10.2	
5	10	6	
Smoking Status			
Yes	5	3	
No	161	97	

The descriptive analysis of measures outcome of psychological distress (DASS-21) and self-reported resilience (CD-RISC-10), as demonstrated in Table 2, shows that the mean score of CD-RISC-10 for UiTM medical students' resilience was 26.6. About the prevalence of depression, anxiety, and stress, as assessed by the DASS-21, 38.0% had depressive symptomatology (13.3% severe or extremely severe), 31.9% had anxiety symptoms (10.8% severe or extremely severe), and 70.5% had stress symptoms (39.8% severe or extremely severe). An independent t-test was done to compare the demographic data's resilience score. The results showed no significant association between resilience level with years in medical school and smoking status.

Table 2 Descriptive analysis of measures outcome of psychological distress (DASS) and self-reported resilience (CD-RISC)

Outcome Variables	n	%	Mean (±SD)
Resilience			26.60 ± 6.48
DASS (Stress)			
Normal	49	29.52	
Mild	11	6.63	
Moderate	38	22.89	
Severe	24	14.46	
Very Severe	44	26.51	
DASS (Anxiety)			
Normal	113	68.07	
Mild	16	9.64	

Moderate	19	11.45
Severe	13	7.83
Very Severe	5	3.01
DASS (Depression)		
Normal	103	62.05
Mild	12	7.23
Moderate	29	17.47
Severe	11	6.63
Very Severe	11	6.63

Based on the T-test comparison of resilience and gender in Table 3, there is a significant difference in the mean resilience score between male and female students ($t = -2.049$, $df = 164$, $p < 0.05$). Male students had higher resilience scores as compared to female students.

Table 3 T-test comparison of resilience and gender

	Gender										
	Male			Female							
	N	Mean	SD	N	Mean	SD	95% CI	F	t	df	Sig
Resilience	35	28.57	6.060	131	26.07	6.509	-4.914, -0.091	0.622	-2.049	164	0.042

Non-parametric correlation between psychological distress (depression, anxiety and stress) and resilience presented in Table 4 suggested that resilience and psychological distress had significant correlations. There was a significant negative correlation between total psychological distress and total resilience (r=-0.455, P=0.001). Resilience was moderately negatively correlated with all DASS-21 components with depression (r=-0.459, P=0.001), stress (r=-0.452, P=0.001), and anxiety (r=-0.362, P=0.001). However, psychological distress shows a strong positive relationship between its variables (r=>0.7, P=0.001).

Table 4 Relationship between Psychological Distress (Depression, Anxiety and Stress) and Resilience

	Variable	1	2	3	4	5
1	Total Resilience	-				
2	Depression	-.459*	-			
3	Stress	-.452*	.819*	-		
4	Anxiety	-.362*	.724*	.808*	-	
5	Total DASS	-.455*	.902*	.952*	.912*	-

Correlation between variables were measured using Spearman Rank Correlation Coefficient (r) *Correlation is significant at the 0.01 level (2-tailed)

5.0 Discussion

5.1 Resilience

UiTM third-year medical students showed a lower mean (SD) resilience score of 26.60 (6.48) as compared to the resilience score of the general population in the United States of America, which is 32.1 (5.8) (Connor & Davidson, 2003). Furthermore, our resilience score falls into the lowest 25% of the population. The difference in study location might explain this contrary result, ethnicity, cultural influences, and nature of the sample (Davidson, 2019 Houpy et al., 2017). However, as compared to studies with similar examples of nursing students in India (Mathad, 2017) and China (Chow et al., 2018), which had mean scores of 26.3 (6.3) and 24.0 (5.7), our sample has a slightly higher mean.

To the best of our knowledge, this is the first study in Malaysia which use CD RISC 10-item to measure resilience. Thus, an extensive comparison with this study's sample population cannot be made. However, a local research using different resilience measuring tools showed that medical undergraduates had higher mean resilience than undergraduates from applied science and pure science (Ahmad et al., 2018). Further study in this field needs to be done. This study found that resilience scores are higher in males than females. This is

supported by the studies done in Finland (Hänninen & Aro, 1996), Turkey (Erdogan et al., 2015) and Canada (Rahimi, 2014). However, the results were not as consistent as those opposed by a local study (Ahmadet al., 2018) and the studies in Brazil (Tempski et al., 2015) and India (Somaiya et al., 2015), which those studies showed the same mean resilience for both genders. The higher resilience score in males compared to females may be explained by the difference in coping styles between females and males. Hanninen & Aro (1996) demonstrated that women tend to use a dysfunctional coping style more than men, in which a dysfunctional coping style is negatively correlated to resilience.

5.2 Psychological distress

Our data for psychological distress show that the prevalence of anxiety among third-year medical students was lower (31.9%) than in the previous local study, which was 62.9% (Fadli et al., 2016). However, the prevalence of depression (38.0%) and stress (70.5%) among third-year medical students were higher than in the previous local study, which was 30.8% and 34.9%, respectively (Fadli et al., 2016). Our results were comparable to studies done in Brazil (Moutinho et al., 2016) and Pakistan (Kumar et al., 2016). Our data showed that anxiety was lower while depression and stress were higher. The prevalence of depression also was higher compared to the general population (1.8%) (Ministry of Health [MOH], 2016). The level of depression, anxiety and stress is worrisome. The possible explanations for these conditions among medical students were high expectations from others, information overload within a short period, living far from family and living in a competitive environment (Taneja et al., 2018).

5.3 Relationship between resilience and psychological distress

Regarding the correlation between resilience and psychological distress, there was a significant inverse relationship between the two variables, consistent with the previous study done in Australia (McGillivray & Pidgeon, 2015) and China (Zhang et al., 2018). This indicates that low resilience was associated with high psychological distress and vice versa. High emotional resilience is critical in managing psychological distress and enhancing well-being (Bore et al., 2016). This is true as people with high resilience can cope with and adapt better to stressful situations (Macía et al., 2020; Wu et al., 2020). The gap in the relationship between resilience and psychological distress can be improved further by promoting better coping skills and stress management strategies. These include the practice of mindfulness, positive emotions, and gratitude journaling. Improving the level of resilience will help in increasing self-efficacy and confidence, which will reduce psychological distress among students. Therefore, the transitional gap would be educating students on improving their resilience while coping with challenges.

Our findings revealed that the medical students' resilience was slightly higher than the other nursing student samples in China and India. However, our students reported that mean CD RISC 10 scores showed they were well below the norms for USA general population. The gender factor influenced medical students' resilience, with male students appearing to possess significantly higher strength than females. This study also demonstrated a high prevalence of depressive and anxiety symptomatology in medical students, with markedly higher stress levels. Among them, lower psychological distress was closely associated with higher resilience. The inverse correlation between both measures was significant. Our results suggest a necessity to foster their resilience at an early stage by integrating approaches to develop muscular strength into the medical curriculum using innovative techniques, to prepare their minds for the inevitable psychological burdens and raise their odds of surviving medical studies.

6.0 Conclusion and Recommendation

This study should be cautiously interpreted as it is subjected to several important limitations. Although the collected data demonstrate statistically significant associations, the nature of our study is cross-sectional, and it does not provide adequate information to outline the causality between resilience and psychological distress. Hence, it does not reflect the proper direction of the relationship between study measures, and the causal relationships cannot be established. Furthermore, the mean of resilience and prevalence of anxiety and stress in the general population of Malaysia is not available. As self-reported instruments are used as our study tool, the survey was susceptible to socially desirable response bias. We measured the levels of stress and resilience, but we did not include coping skill measures in our study, which unfortunately affects our comprehension between resilience and psychological distress.

Understanding our current variables is also restricted by the lack of information regarding the students' perceived underlying reasons for their psychological pain and limited demographic details. The study was conducted on a particular sample at a single medical school by recruiting students with a specific year of study. Even though the response rate was relatively high (73.1%), students with mental health-related issues may have decided not to participate in the study. Moreover, compared with many medical students in Malaysia, this study sample size is relatively small. These factors limit the possibility for our findings to be generalised to other medical students and general populations. We maintained participants' anonymity as we were bound to the study confidentiality clause.

For future studies, we recommend adding coping skill measures as it plays a crucial role in understanding the intricate relationship between resilience and psychological distress. The coping skill outcome shall provide a chance to interpret the present study variables from another angle. The key to stable mental health is early diagnosis and immediate management of mental health-related problems by introducing awareness of common psychological distress signs and symptoms in daily life and encouraging the students to seek early help from faculty counsellors, clinical psychologists or psychiatrists.

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Paper Contribution to Related Field of Study

This paper contributes to the health and well-being of medical students in the medical fraternity.

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