ORIGINAL ARTICLE

Evaluating the Resilience Level among Medical and Health Science Lecturers in Higher Education

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ABSTRACT

INTRODUCTION: The use of resilience in higher education involves recognizing and implementing adaptive mechanisms during periods of adversity or transition. The present study aims to conduct an evaluation of the resilience levels of lecturers and investigate the association between socio-demographic factors that are linked to resilience among medical and health science lecturers in Malaysia. **MATERIALS AND METHODS:** A cross-sectional online questionnaire was conducted between October and November 2023. This study employed the validated Medical Professionals Resilience Scale (MeRS) for all lecturers in medical and health science fields at Malaysian institutions, which consists of 37 items designed to assess the resilience level of the lecturers. Socio-demographic data were also collected to identify resilience characteristics. The independent sample T-test, Pearson correlation, and one-way ANOVA were used to analyze the data. **RESULTS:** The study encompassed a collective of 127 lecturers. A mean score of 123.66 and a standard deviation of 16.7 show that the lecturers have a high level of resilience. Resilience was observed more in lecturers with a non-clinical background compared to fellow clinical background (p=0.018). The other socio-demographic factors, including gender, age, marital status, years of experience as an educator, and designation of administration role, were not shown to have a significant impact. **CONCLUSION:** This study has the potential to yield valuable insights and may improve the effectiveness of university management frameworks in supporting lecturers during difficult times; this could be accomplished by advocating for leisure and sports activities and instituting healthy habits.

Keywords
resilience, lecturer, medical, health science, higher education

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INTRODUCTION

Resilience refers to the ability to cope with difficult situations, which involves mental, emotional, and behavioral flexibility and adaptation to internal and external demands.[1] It is a multifaceted process that can focus on the outcome or the process itself.[2] Resilience is dynamic and not a fixed personal attribute.[3] To better understand resilience, we need to recognize its dynamic nature. In their 2020 study, Wadi et al. introduced a resilience model for medical professionals, comprising four domains. Growth domain emphasizes psychological processes enabling positive adaptation, while Control domain involves emotion regulation and self-esteem maintenance. The involvement domain highlights dedication and persistence, and the Resourceful domain underscores leveraging available resources. These domains collectively offer insights into how medical professionals manage adversity, grow, and utilize resources effectively.[4]

Resilience has become an important area of study in education, particularly in understanding how teachers can sustain their effectiveness and well-being despite the many demands and constraints of their jobs.[5] Several studies have examined the level of resilience among medical and health science lecturers, but the results have been inconsistent, especially concerning the impact of socio-demographic factors.[6,7] In Malaysia, few studies have evaluated the resilience level of lecturers and its relationship with socio-demographic factors in general

education and healthcare, but not specifically in medical and healthcare education.[8,9] Resilience is essential in medical and health profession education evaluation since the current process prioritizes objectivity and stakeholder expectations over humanism.[4] Therefore, this study aims to conduct a comprehensive assessment of the resilience levels of lecturers and investigate the association between socio-demographic factors that are linked to resilience among medical and health science lecturers in Malaysia.

MATERIALS AND METHODS

SUBJECT'S REQUIREMENT

It was a cross-sectional study conducted from October to November 2023 among all medical (clinical and non-clinical) and health science lecturers (pharmacy, dental, nursing, allied health, and others) from 10 public universities in Malaysia. The sample size calculation was based on G*Power version 3.1.9.7.[10] The criteria used for sample size calculation are a medium effect size of 0.15,[11] a minimum level of power of 0.8,[12] a significance level of 0.05, and the number of variables was four. According to this G*Power software calculation, a minimum sample size of 85 participants is required for this study. A convenience sampling technique was used to select the lecturers.

DATA COLLECTION

The questionnaire was distributed as an online survey to all participants through Google Forms, with English being the language utilised. The rationale for choosing this method is its ease of use, efficiency in terms of respondent time, and widespread adoption as a platform for both data collection and management. The distribution occurred via email and communication platforms such as WhatsApp. The lecturers who have provided their agreement and consent to participate in the research will be responsible for responding to all inquiries.

The study evaluated the participants' level of resilience using an adopted tool, the Medical Professionals' Resilience Level (MeRS).[13] The questionnaire contained 37 items, divided into four domains: control, resourcefulness, involvement, and growth. All 37 items of the MeRS had content validity indexes (CVI) higher than 0.80, indicating a satisfactory level of content validity. To calculate the resilience score, a maximum score of four was assigned to each question, resulting in a total maximum score of 148 for all 37 items per respondent. A higher score on the MeRS indicates a stronger level of resilience, while a lower score suggests the opposite (Table I).

Table I: The total score for MeRS with a corresponding level of resilience competency*

MeRS domain (n item)	Level of resilience competency (total score)		
	Developing (low)	Established (moderate)	Exceptional (high)
Growth (15)	15-27	28-27	48-60
Control (12)	12-21	22-38	39-48
Involvement (6)	6-11	12-18	19-24
Resourceful (4)	4-7	8-12	13-16
Global score (37)	37-66	67-118	119-148

*Reproduced [13]

Sociodemographic details were collected to characterize our sample as well as to explore whether any relationships existed between them and resilience. These included gender, age, marital status, professional background, years of experience as an educator, and designation to an administration position.

Descriptive statistics were employed to provide an overview of the samples, and the normality of the data was assessed. The mean and standard deviation for the MeRS scores of the sample were calculated, along with the mean differences in the resilience level domain, as an indication of the respondents' resilience. Independent sample t-test, a one-way ANOVA, and a Pearson correlation were used to look into the link between the MeRS score and six socio-demographic variables. IBM SPSS Statistics for Windows Version 29.0 was used to conduct the statistical analyses.[14]

RESULTS

The invitations were sent to the medical and health science faculty lecturers of universities in Malaysia. Response rates ranged from 5 to 15 lecturers per university, depending on the institution's size. In this study, three out of four domains in MeRS received high scores while one domain (Involvement) showed a moderate score. As shown in Table II, the mean scores

for the following domains were as follows: growth domain was 53.72 ± 6.57, control (38.75 ± 6.71), involvement (18.49 ± 3.47), and resourceful (12.70 ± 2.61).

Table II: Descriptive statistics of resilience domain scores

	MeRS Score			
Resilience Domain	**Mean**	**Standard deviation**	**Minimum**	**Maximum**
Growth	53.72	6.57	21	60
Control	38.75	6.71	16	48
Involvement	18.49	3.47	8	24
Resourceful	12.70	2.61	4	16

The study involved a total of 127 participants. Most of the participants were women (n=87, 68.5%) with ages 40-49 (n=54, 42.5%). The majority of them were married (n=111, 87.4%), had a professional background as clinicians (n=55, 43.41%), and had 1–5 years of experience as educators (n-32, 25.2%). More than half of the participants had a position in administrative posts (n=64, 50.4%). The mean resilience score of the participants in the study was high (123.66 ± 16.70) (Table III).

Table III: Characteristic respondent and resilience score

Participants (N = 127)	**N (%)**	**Mean ± SD**	***p*-value**	**Post-hoc**
Gender				
Male	40 (31.5)	123.38 ± 17.85	0.896[a]	
Female	87 (68.5)	123.80 ± 16.25		
Age				
20-29	1 (0.8)	114.00 ± -	0.054[b]	
30-39	42 (33.1)	120.14 ± 17.66		
40-49	54 (42.5)	124.15 ± 16.48		
50-59	25 (19.7)	128.64 ± 15.20		
≥ 60	5 (3.9)	125.00 ± 17.03		
Marital Status				
Married	111(87.4)	123.64 ± 16.60	0.969[a]	
Other (widowed/divorced & single)	16 (12.6)	123.81 ± 17.90		
Professional Background				
Medical (Clinical)*	55 (43.31)	119.11 ± 18.31	0.018[c]	0.022*
Medical (Non/ pre-clinical)*	30 (23.62)	129.07 ± 13.77		
Others (Nursing, Pharmacy, Dental, Allied health)	42 (33.07)	125.76 ± 15.09		
Years of Experience as an Educator				
1-5	32 (25.2)	118.81 ± 17.38	0.077[b]	
6-10	29 (22.8)	125.10 ± 17.49		
11-15	24 (18.9)	124.92 ± 16.19		
16-20	26 (20.5)	122.92 ± 16.56		
> 20	16 (12.6)	130.06 ± 13.67		
Designation to Administrative Post				
Yes	63 (49.6)	123.21 ± 17.54	0.762[a]	
No	64 (50.4)	124.11 ± 15.96		
MeRS Total Score (n = 127), Mean = 123.66, Standard Deviation = 16.7				

Note: [a] Independent samples T-Test. [b] Pearson correlation, [c] One-way ANOVA test, $p<0.05$ taken as the level of significance. Normality and equal assumptions were met
*Tukey HSD test

The study discovered no significant difference in resilience level between gender, administrative roles, marital status, age, and years of experience as educators, as given by the *p*-values of 0.896, 0.762, 0.969, 0.054, and 0.077 respectively (Table III). However, it is worth noting that there was a significant difference in the resilience level for professional backgrounds (p= 0.018). The mean score for medical (clinical) background differed significantly from that for medical (non-pre-clinical) background, as determined by post hoc comparisons with the Tukey HSD test (p=0.022).

DISCUSSION

RESILIENCE LEVEL

This study was conducted based on the consideration of the lecturer's humanity to reach a quality standard of medical education which is rarely emphasized in conjunction with the current methodology employed in medical and health profession education. The study revealed that medical and health science lecturers in Malaysia exhibit a high level of resilience. Almost all domains of resilience were high among medical and health science lecturers, suggesting a well-rounded ability of the lecturers to navigate life's challenges, maintain well-being, and bounce back from adversity. This finding is consistent with other studies on medical educators in the United Kingdom in 2019 and a study conducted on faculty members at Malaysia's training institutes.[6,8]

Medical lecturers have numerous challenges in their employment within the field of medical education due to the intricate nature of the subject matter, the requirements of medical education, and the ever-changing healthcare environment. One of the difficulties is that medical lecturers are not only responsible for teaching in a classroom context but also for overseeing clinical teaching. This includes tasks such as organizing clinical placements, ensuring that students have enough opportunities to interact with patients, and creating valuable learning experiences in actual healthcare environments. In addition, they are required to engage in research, clinical practice, and administrative responsibilities. One potential reason for the strong resilience displayed by medical and health science

lecturers is their adeptness at handling the various challenges associated with teaching intricate subjects, managing a wide range of responsibilities, adapting to frequent changes in the medical field, and sustaining a sense of purpose in their positions.

Another crucial factor that influences the high level of lecturers' resilience is the association between coping strategies and level of education. People with lower educational attainment exhibit lower resilience and are more likely to use maladaptive coping mechanisms.[15] Prior studies suggest that higher levels of education are associated with higher resilience.[16,17] Typically, lecturers in the field of medical and health science in Malaysia are required to possess a minimum of a master's degree, with a significant number of them holding doctoral (PhD) degrees. However, it is crucial to recognize that one's level of educational achievement does not solely determine resilience. Personal characteristics, strategies for dealing with stress, past events, and sources of assistance from others also have important influences.

SOCIO-DEMOGRAPHIC

In our study, we found that gender, age, marital status, years of experience as educators, and administrative position did not influence the resilience level of lecturers. In relation to gender, this is consistent with a previous study conducted in the UK for medical educators[6] and also a study in the US for physicians,[18] despite using a different measurement instrument (CD-RISC-25), gender did not significantly impact the mean score. Such gender differences across studies vary among different populations and are inconsistent. Lecturers of different genders possess distinct talents, strengths, needs, and vulnerabilities, all of which might influence their resilience. Several studies have identified a greater level of resilience in men compared to women.[9,19,20] Some discovered that women exhibited greater resilience.[17] Nevertheless, both male and female lecturers face similar challenges related to teaching, research, professional development, and institutional dynamics. The academic environment's demands and stressors can affect individuals in comparable ways, regardless of gender.

No correlation was found between age and level of resilience. This finding aligns with studies in several Malaysia hospitals for healthcare workers,[9] Malaysia lecturers from training institutes,[8] and a study in Germany.[17] This finding highlight that among medical and health science lecturers in Malaysia, resilience tends to remain consistent regardless of age. One possible explanation for why there is no significant link between age and resilience in this study is due to a combination of individuals such as intrinsic motivation; driven by a passion for teaching and contributing to medical education, which can enhance resilience. Additionally, environmental and developmental factors may also play a role.

There was no significant difference found in the association between marital status and resilience. This conclusion aligns with findings from research carried out in the United Kingdom and the United States.[6,20] However, other studies have found that married people are more resilient than single or divorced people.[16,17] Social support from a spouse may help people overcome problems and grow. A study discovered that the loss of a spouse can decrease mental well-being but does not affect resilience.[17] The lack of a significant association between marital status and resilience in lecturers could be attributed to various factors that influence resilience. The presence of larger support systems beyond marriage partnerships often has a significant impact on resilience, such as supportive friendships, professional networks, including receiving the level of support from colleagues, and the satisfaction derived from professional accomplishments, as well as family relationships. These factors have the potential to outweigh the influence of married status alone.

Our study revealed no significant correlations between the level of resilience and the number of years of teaching experience. This finding is consistent with prior research.[6,8] The study's findings suggest that while years of teaching experience may increase resilience due to exposure and adaptability to the profession, this relationship may not be linear. Personal circumstances, occupational obstacles, and other factors can affect resilience over time.

There was no statistically significant difference regarding the designation of individuals to administrative positions. This finding is consistent with other studies undertaken.[8] The level of work satisfaction and sense of purpose that one feels at work can have a significant impact on their resilience. Some lecturers seek and succeed in administrative posts, harmonizing their professional ambitions. Finding their jobs personally enjoyable and meaningful may help them overcome problems. Others may prefer teaching and research, where resilience is more related to success.

An interesting finding of our study was that, although all lecturers exhibited high resilience levels, there was a significant difference between clinical and pre-clinical lecturers, with pre-clinical lecturers displaying higher resilience. This finding is consistent with another study that assessed the resilience of hospital-based doctors in clinical and pre-clinical departments, revealing that pre-clinical doctors demonstrate greater resilience compared to clinical doctors which is associated with more compassion satisfaction.[21] Resilience had a positive correlation with elevated levels of compassion satisfaction, reduced burnout, and an increased capacity to tolerate both general and clinical ambiguity. A study done in Malaysia examined the levels of burnout among clinical and non-clinical lecturers, where clinical lecturers reported significantly higher burnout compared to fellow non-clinical lecturers.[22] This study supports previous study's findings that clinical lecturers experienced a notable increase in burnout where the primary cause of this burnout was their involvement with administration, as they viewed administrative tasks to be the least important part of their work.[23,24] Even before the pandemic, clinical lecturers had been observed facing this issue.[25] During the COVID-19 pandemic, clinical lecturers faced challenges in delivering medical education and clinical teaching. This required them to acquire additional skills, put in more effort, and make greater commitments.[26] There is no significant difference in the level of resilience between medical lecturers (both clinical and non-clinical) and lecturers from other disciplines such as nursing, dentistry, pharmacy, or allied health.

LIMITATION

While the findings of this study provide valuable insights into the resilience among medical and health science lecturers in Malaysia, several limitations must be acknowledged regarding the generalizability of the results. First, due to the uncertain generalizability of convenience samples, the estimates obtained from such samples are frequently biased. This means that the sample estimates do not accurately reflect the true effects within the target population, as the sample poorly represents the target population. Second, utilising email (assuming that the email provided on the official university website is their most up-to-date official email address) and WhatsApp for data collection may not guarantee equitable gender representation. Although the survey is distributed to both genders, the rates at which they respond may vary. Hence, it is crucial to carefully assess the generality of the findings for all medical and health science lecturers in Malaysian educational institutions. Finally, this study has a cross-sectional design, providing a short-term perspective on a constantly changing phenomenon. Therefore, definitive conclusions about the cause-and-effect connection between each aspect cannot be drawn.

CONCLUSION

This study investigated the resilience of medical and health science lecturers at Malaysian higher institutions. The study found that lecturers exhibited a high level of resilience with individuals possessing non/pre-clinical backgrounds demonstrating higher resilience compared to those with clinical backgrounds. Meanwhile, the other group (Nursing, Pharmacy, Dental, and Allied Health) did not have significant differences compared to medical lecturers (clinical and non/pre-clinical). Moreover, socio-demographic parameters such as gender, age, marital status, years of experience as an educator, and designation of administration position didn't influence the level of resilience. Identifying less resilient groups and traits could help university management systems to have better support for lecturers. While this study might provide insights into policy-specific domains that require interventions, to ascertain the efficacy of solutions and

assess their impact on enhancing the resilience of lecturers, more extensive and interventional study is necessary.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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