

## RESEARCH ARTICLE

## Is Resilience Knowledge Related to the Mental Health of First-Year Medical Students?

Nurul Romadhona,<sup>1</sup> Susan Fitriyana,<sup>1</sup> Ayu Prasetia,<sup>2</sup> Raden Ganang Ibnusantosa,<sup>1</sup> Eka Nurhayati,<sup>1</sup> Titik Respati<sup>1</sup>

<sup>1</sup>Department of Public Health, Faculty of Medicine, Universitas Islam Bandung, Bandung, Indonesia,

<sup>2</sup>Department of Psychiatry, Faculty of Medicine, Universitas Islam Bandung, Bandung, Indonesia

### Abstract

The many demands faced by first-year medical students can impact mental health. For students to function well, resilience is needed. This study aimed to determine the relationship between resilience knowledge and the mental health of first-year medical students. This quantitative study was conducted at the Faculty of Medicine, Universitas Islam Bandung, in October 2022. Respondents were 92 students in the first 2022/2023 academic year—data collection method was by distributing two Google Forms links. The first contains a pre-test regarding resilience knowledge, while the second includes the self-reporting questionnaire-29 (SRQ-29). Univariate analysis used distribution assumptions, frequency distribution (median, mean, standard deviation), and proportion distribution (percentage, 95% CI). Bivariate analysis used the t test, Wilcoxon test, and chi-square test. Most respondents were female, 59% (95% CI=52.62, 72.37). The majority of respondents were 18 years old. The highest order of mental health screening was post-traumatic stress disorder symptoms at 59% (95% CI=48.27, 68.39), mental-emotional disorder (anxiety and depression) symptoms at 37% (95% CI=27.62, 47.37), and psychotic symptoms at 27% (95% CI 18.98, 37.28). No respondents experienced symptoms of narcotic or psychotropic drugs. Respondents who indicated mental health disorders were more significant than those who did not, namely 60% (95% CI=49.35, 69.39). There was no relationship between resilience knowledge and mental health ( $p=0.75$ ). Respondent's understanding of resilience was good, but more indicated mental health disorders.

**Keywords:** Medical students, mental health, resilience

### Introduction

Medical education institutions are places to produce qualified and professional human resources (doctors) to improve the welfare of society, especially in the health sector. However, in the process, students encountered many obstacles.<sup>1</sup> The challenges of medical education are even more pronounced for first-year students. Undergraduates face various demands and problems, including the need for developmental tasks, the role transition process, academic requests, and anxiety.<sup>2</sup>

First-year medical students experience a transition of life from high school to college. As a previous study stated, the transition period experienced by first-year students is more complex than the previous school transition.<sup>3</sup> As college students, adolescents must face various social and academic norms that are different from the social and educational standards that apply when they are still in high school. They have to face the challenge of adjusting to adulthood.<sup>4</sup> Clark states

that first-year students who successfully undergo the transition period are successful.<sup>5</sup>

The most common cause of stress in first-year medical students is academic stress due to the pressure of facing exams, coursework, and busy lecture times.<sup>3</sup> A previous study stated that the challenges expressed by some students, namely the difficulty of following a busy lecture schedule, are quickly disappointed when the plan is different from the expected. Some students also expressed difficulty establishing communication with new people and did not easily adjust to the campus environment and residence.<sup>2</sup>

The diverse academic and non-academic demands that medical school students have to go through can be detrimental to psychological well-being.<sup>6</sup> The psychological stress of medical students is a significant public health concern worldwide.<sup>7</sup> The most prevalent mental problems are depression and anxiety disorders.<sup>1</sup> Medical students often do not seek help for mental health problems.<sup>8</sup> Only 24% of students with mental disorders see a doctor at the university hospital,

Received: 26 January 2021; Revised: 30 April 2023; Accepted: 30 April 2023; Published: 30 April 2023

**Correspondence:** Nurul Romadhona, dr., M.M.R.S. Department of Public Health, Faculty of Medicine, Universitas Islam Bandung, Jln. Tamansari No.22 Bandung 40116, West Java, Indonesia. E-mail: [nromadhonadr@gmail.com](mailto:nromadhonadr@gmail.com)

and only 2.4% know a psychologist-counselor at the clinic.<sup>9</sup>

Stress that individuals cannot control and overcome will lead to negative cognitive, physiological, and behavioral impacts. Adverse mental effects include difficulty concentrating, remembering lessons, and understanding studies. Those adverse mental effects can result in lower grade point average (GPA) scores.<sup>6</sup> Negative emotional impacts have difficulty motivating oneself, feelings of anxiety, sadness, anger, frustration, and other adverse effects. Adverse physiological effects include health problems, decreased resistance to disease, frequent dizziness, lethargy, weakness, and insomnia. The behavioral effects include procrastination, laziness, consuming junk food, smoking, drug, and alcohol abuse, engaging in excessive pleasure-seeking activities, and the most severe is suicide.<sup>10,11</sup>

Therefore, to continue functioning amidst various stressors, students need the ability to adapt to problems, called resilience.<sup>10</sup> Higher levels of resilience are associated with lower levels of distress ( $p < 0.001$ ).<sup>12</sup> However, research on this resilience knowledge is lacking. This study aimed to determine the relationship between resilience knowledge and the mental health of first-year medical students.

## Methods

This research was a quantitative study. This study was conducted on first-year Faculty of Medicine Universitas Islam Bandung students in the academic year 2022/2023 in October 2022. Sampling was done voluntarily, with 92 respondents.

The data collection method was carried out with a digital questionnaire instrument using the Google Forms platform, distributed via chat Zoom at a community service webinar on mental health. The first Google Form contains a pre-test regarding students' resilience knowledge, which includes ten questions with three answer choices. Students choose one of the correct answers. The second Google Form contained the self-reporting questionnaire-29 (SRQ-29) questionnaire. SRQ-29 is a mental health screening questionnaire that includes 29 questions. This questionnaire deals with mental health issues such as depression, psychoactive substance use, psychotic disorders, and post-traumatic stress disorder (PTSD) that

may have been interfered with in the past 30 days. The World Health Organization developed the questionnaire, adopted by the Ministry of Health's *Sehat Jiwa*.<sup>13</sup> Each question is followed by two answer options, yes and no. Students choose one of the answers that suit them. If there are  $\geq 6$  yes answers to questions 1–20, it falls into the category of mental or emotional disorder symptoms (anxiety and depression). If there is one yes answer to question number 21, it falls into the symptoms of drug use (narcotic, psychotropic drugs). If there is one yes answer to questions 22–24, it is a psychotic symptom. If there is one yes answer to questions 25–29, it falls into the PTSD symptom category.<sup>14</sup>

Univariate analysis used distribution assumptions, frequency distribution (median, mean, standard deviation), and proportion distribution (percentage, 95% CI). Bivariate analysis used the t test, Wilcoxon test, and chi-square test. The tool used for data analysis was Stata MP 16.0. This study has obtained ethical approval from the Health Research Ethics Committee of the Universitas Islam Bandung with number: 208/KEPK-Unisba/VIII/2022.

## Results

Table 1 shows more female than male respondents, 59% (95% CI=52.62, 72.37). Characteristics of respondents based on age; the majority were 18 years old. Table 1 also shows the mental health screening of respondents, namely mental emotional disorder symptoms (anxiety and depression) of 37% (95% CI=27.62, 47.37), psychotic symptoms of 27% (95% CI=18.98, 37.28), and PTSD symptoms of 59% (95% CI=48.27, 68.39). No respondents experienced symptoms of narcotic or psychotropic drugs. Overall, 55% (95% CI=49.35, 69.39) of respondents indicated mental health disorders compared to those who did not indicate mental health disorders.

Table 2 shows a similarity in the mean score of knowledge about resilience between the groups that are not indicated and indicated by mental health disorders. The mean score of knowledge about resilience in the group without mental health disorders is 81.08, while in the group with mental health disorders, it is 80. The knowledge score in the group without mental health disorders is more varied than in the other groups. This study shows no relationship between

**Table 1 Characteristics of Respondents**

Characteristics	n=92	%	95% CI	
Gender				
Female	54	59	52.62	72.37
Male	38	41	27.62	47.38
Mental, emotional disorder (anxiety and depression)	58	63	52.62	72.37
No	34	37	27.62	47.37
Yes				
Psychotic				
No	67	73	62.72	81.02
Yes	25	27	18.98	37.28
PTSD				
No	38	41	31.60	51.73
Yes	54	59	48.27	68.39
Indicated mental health disorder				
No	37	40	30.60	50.64
Yes	55	60	49.35	69.39

**Table 2 Relationship between Resilience Knowledge and Mental Health**

Mental Health Disorders	Median	Mean	SD	p
No indication	90	81.08	17.12	0.75
Indicated	80	80	15.27	

resilience knowledge and respondents' mental health ( $p=0.75$ ).

## Discussion

The characteristics of respondents based on gender in this study, the most are women (59%). This study's results align with previous research, with most respondents being women, with a percentage of 70.3%.<sup>3</sup> This is also in line with previous research at Universitas Udayana, which shows that most students in the faculty of medicine have female gender (71.1%).<sup>15</sup> Female students have a high interest in motivation in learning. This study aligns with previous research, which explains that learning motivation is closely related to learning activities by female students to become health workers.<sup>16</sup>

In this study, the majority of respondents were 18 years old. This study's results align with previous research, namely that mental disorders often have their first onset shortly before or during college with a typical age range, namely 18–24 years.<sup>17</sup> A previous study stated that the age range was three times higher in experiencing

stress compared to different age ranges, and the prevalence of severity of stress levels was more prevalent in that age range.<sup>18</sup> Students are in the intimacy versus self-absorption or isolation stage, where at this stage, there is an urge to socialize, such as having good relations with certain people in the form of cooperation, love, or friendship. So, it is essential for self-adjustment and social adjustment. If there is a failure in self-adjustment, psychosocial conflicts can arise. Psychosocial conflicts can result in mental health disorders.<sup>17</sup>

The mental health screening picture of respondents in this study shows the order of symptoms of mental health disorders from the most experienced by respondents, namely PTSD at 59%, mental and emotional upset (anxiety and depression) at 37%, psychotic at 27%, and as many as 40% who are not indicated by mental health disorders. The results of this study are similar to previous research, which shows that the most psychosocial problems, namely PTSD at 75%, then anxiety and depression at 61.36%, psychotic disorders at 50%, psychoactive substance/drug use at 2.27%, and as many as 22.72% are not

indicated to experience psychosocial problems or mental disorders.<sup>13</sup> PTSD is the most common psychosocial problem found, with a frequency of 32% or 63 respondents (n=196).<sup>19</sup>

According to the American Psychiatric Association, PTSD is a psychiatric disorder that can occur in people who have experienced or witnessed a traumatic event, series of events, or circumstances.<sup>20</sup> Another definition states PTSD is a mental condition in which you experience panic attacks triggered by traumatizing past experiences. PTSD is a mental disorder that can develop after exposure to a highly threatening or terrifying event.<sup>19</sup>

Risk factors for PTSD include the type of trauma, age, gender, low socioeconomic status, education, separation (domestic conflict), prior trauma, general childhood adversity, personal and family psychiatric history, child abuse, poor social support, and initial severity of reaction to trauma.<sup>19,21</sup> Repeated exposure to trauma is said to be protective. PTSD is higher for those with a history of childhood trauma.<sup>21</sup>

Clinical manifestations that appear in an adult must experience the following for at least one month: (1) one symptom of recurrent experience, (2) one symptom of avoidance, (3) one symptom of increased emotional intensity and one symptom of increased reaction, (4) two symptoms of thinking and mood symptoms. The syndrome can be short-term (acute form) or long-term (chronic condition). However, an epidemiological study found that about 25 percent of respondents experienced delayed onset after six months or more.<sup>19</sup>

PTSD symptoms cause clinically significant suffering, functional impairment, and reduced educational prospects.<sup>22</sup> Various impacts can arise from untreated PTSD. Those impacts are the risk of poor physical health, including somatoform, cardiorespiratory, musculoskeletal, gastrointestinal, and immunological disorders. People with PTSD are at higher risk of employment problems, poor social support, and intimate relationship problems, including marital difficulties, than people without PTSD.<sup>19,23</sup> PTSD also triggers the risk of suicide.<sup>19</sup>

The results of this study showed that more respondents indicated mental health disorders than not, 60% (95% CI=49.35, 69.39). This aligns with previous research, where 77.28% of respondents (medical students) indicated mental disorders.<sup>13</sup> Research conducted on medical

students at the University of Michigan showed that 53% experienced high depressive symptoms. In Indonesia, of 217 respondents, 12% showed high anxiety symptoms. Students interact with various elements in the learning environment, including the learning process, teachers, academic achievement or load, learning atmosphere, and social environment. In this process, medical students face different demands that can cause stress. One's transition from high school to college student can cause stress, especially in the first year of college. Stress experienced by students harms physical and psychological conditions.<sup>24</sup>

The most common cause of stress in first-year medical students is academic stress due to the pressure of facing exams, coursework, and busy lecture times. A study on medical students in Iraq stated that the most common causes of academic stress were the demands of exams and hectic study times.<sup>25</sup> Other literature says that some of the factors that cause stress in first-year students are an adaptation from the school environment to the university environment, living away from parents, and a poor environment.<sup>26</sup>

The process of adaptation is needed when a person enters a new environment. Adaptation happens to first-year university students, which requires adapting to learning and changes from the school environment to the university environment, such as coursework, tutorials, laboratory activities, and clinical skill labs. Adaptation to learning is a process of mental response and individual behavior or reaction to demands from oneself and academic tasks. In the faculty of medicine, problem-based learning (PBL) is the learning method where students must be active and responsible for their learning.<sup>18</sup>

Problems and difficulties related to the academic field are things that students cannot avoid. Each student has a different reaction to problems. Students who experience problems solving problems have negative emotions and tend to think shortly, so these stressful conditions will more easily trigger stress and can lead to mental health disorders. Students need to understand their inner capacity and find ways to solve problems in addressing their academic responsibilities and be able to assume their responsibilities. In this case, students need resilience.<sup>27</sup>

Resilience refers to negotiating, managing, and adapting to significant sources of stress and trauma.<sup>7</sup> Gatt et al. argue that resilience is

an individual's capacity to rise from adversity, conflict, confusion, and failure and the ability to make positive changes.<sup>28</sup>

High resilience is associated with a healthier lifestyle, good physical performance, increased optimism and mental well-being, and good mental health. Low resilience is associated with self-blame and high levels of anxiety and depression. High resilience can protect against stress so that resilient individuals can adapt and deal with the challenges experienced.<sup>10</sup>

Seven aspects form resilience: (1) Emotion regulation is the ability to manage oneself to continue to live life effectively despite the pressure. Resilient individuals have a series of skills to control their emotions, attention, and behavior; (2) Impulse control is the ability to regulate behavior. Resilient individuals can delay their pleasure to do something better; (3) Ability to analyze problems, which is the ability to accurately diagnose the causes of issues. Resilient individuals can think out of habit to find various potential causes of a problem; (4) Self-efficacy is the belief that one can control the situation and solve the issues. Resilient individuals have confidence in themselves and can build the trust of other individuals, so they have a greater chance of success; (5) Optimism, which is the ability to think positively about their future and have realistic plans to make it happen; (6) Empathy, which is the ability to read the behavioral cues of other individuals and understand their psychological conditions. Resilient individuals can build good relationships with others; (7) Achievement is the ability to improve the positive aspects of their lives and accept new challenges.<sup>10</sup>

In facing academic demands, students specifically need academic resilience. Academic resilience is a person's resilience in dealing with various academic tasks in an educational environment. An academically resilient student will not easily despair in the face of academic difficulties. Four factors determine academic resilience, namely (1) self-belief, belief, and confidence in their ability to understand; (2) control, the ability when they are sure about how to do a good job; (3) composure (low anxiety), anxiety; and (4) commitment or persistence is the ability to continue trying to complete the answer. Three factors influence resilience, external factors (social support), internal factors (self-esteem, spirituality, and altruism), and social skills (overcoming conflict and communication

skills).<sup>27</sup>

This study result shows no relationship between knowledge about resilience and mental health in this study ( $p=0.75$ ). There has been no research on this matter. In this study, respondents' knowledge about resilience was good, but more respondents indicated mental health disorders. Efforts to improve respondents' resilience are no longer targeting their expertise level but building positive attitudes and actions. In the first-year student's age range, what often appears is the level of autonomy. Support is sought from peers, not from family. Perceived social support from friends is a stronger predictor of resilience than from family.<sup>4,8</sup> Peer counselors can be used as one of the solutions to improve student academic resilience. This solution aligns with the results of Mufidah's<sup>29</sup> research, which states that social support correlates with student resilience. These results also align with Sari and Indrawati's<sup>30</sup> research, which says that there is a significant positive relationship between peer social support and academic resilience, which means that the higher the social support of peers, the higher the academic resilience of students. Peer social support provides an effective contribution of 22% to academic resilience. In line with the Islamic view in Surah Al Maidah verse 2, which means: "Help each other in (doing) virtue and piety, and do not help each other in sin and enmity. Fear Allah, verily Allah is very severe in His punishment."

## Conclusions

There was no relationship between knowledge of resilience and mental health in respondents. In this study, respondents' knowledge of resilience was good, but more respondents indicated mental health disorders. One way to increase academic resilience is with peer counselors.

## Conflict of Interest

The authors declare no conflict of interest.

## Acknowledgment

We acknowledge the Research and Community Service Unit of the Faculty of Medicine of the Universitas Islam Bandung and all respondents who have participated in this research.

## References

- Sari AN, Oktarlina RZ, Septa T. Masalah kesehatan jiwa pada mahasiswa kedokteran. *MEDULA*. 2017;7(4):82–7.
- Amelia S, Asni E, Chairilisyah D. Gambaran ketangguhan diri (resiliensi) pada mahasiswa tahun pertama Fakultas Kedokteran Universitas Riau. *JOM FK Unri*. 2014;1(2):1–9.
- Saputra IMRA, Suarya LMKS. Peran stres akademik dan hardiness terhadap kecenderungan gangguan psikofisiologis pada mahasiswa kedokteran tahun pertama. *J Psikol Udayana*. 2019;6(1):31–43.
- Narayanan SS, Onn ACW. The influence of perceived social support and self-efficacy on resilience among first year Malaysian students. *Kaji Malays*. 2016;34(2):1–23.
- Clark MR. Negotiating the freshman year: challenges and strategies among first-year college students. *J Coll Stud Dev*. 2005;46(3):296–316.
- Muhlisa N, Nur'aeni. Hubungan antara strategi coping dengan resiliensi akademik pada mahasiswa fakultas kedokteran. *PSIMPHONI*. 2021;2(1):75–84.
- Shi M, Liu L, Wang ZY, Wang L. The mediating role of resilience in the relationship between big five personality and anxiety among Chinese medical students: a cross-sectional study. *PLoS One*. 2015;10(3):e0119916.
- Thompson G, McBride RB, Hosford CC, Halaas G. Resilience among medical students: the role of coping style and social support. *Teach Learn Med*. 2016;28(2):174–82.
- Sanyoto DV, Iskandar S, Agustian D. Masalah kesehatan jiwa pada mahasiswa baru di sebuah universitas di Jakarta. *eJKI*. 2017;5(1):27–33.
- Tanamal NA. Hubungan religiusitas dan resiliensi dalam mempengaruhi kesehatan mental masyarakat terhadap pandemic Covid 19. *Jagaddhita*. 2021;1(1):25–39.
- Sutjiato M, Kandou GD, Tucunan AAT. Hubungan faktor internal dan eksternal dengan tingkat stress pada mahasiswa Fakultas Kedokteran Universitas Sam Ratulangi Manado. *JIKMU*. 2015;5(1):30–42.
- Bacchi S, Licinio J. Resilience and psychological distress in psychology and medical students. *Acad Psychiatry*. 2016;41(2):185–8.
- Desvita WR, Awisarita RW, Fikri M, Akrom, Nurani LH, Sikumbang IM. Skrining kesehatan jiwa, religiusitas, dan kualitas hidup mahasiswa farmasi dan kedokteran pada pandemi COVID-19. *Med Sains*. 2022;7(2):293–300.
- Rifat K, Rina K, Cindy G, Cindy P, Witriastika S. Mental health empowering for health cadets by using mobile screening tools. *QJSSH*. 2022;3(5):85–93.
- Suranadi IW. Tingkat pengetahuan tentang bantuan hidup dasar (BHD) mahasiswa Fakultas Kedokteran Universitas Udayana [Internet]. Denpasar: Universitas Udayana; 2017 [cited 2022 November 10]. Available from: [https://simdos.unud.ac.id/uploads/file\\_penelitian\\_1\\_dir/973304fec3de838114b0870bf7dbfb40.pdf](https://simdos.unud.ac.id/uploads/file_penelitian_1_dir/973304fec3de838114b0870bf7dbfb40.pdf).
- Rahmawati WD, Sukmaningtyas W, Muti RT. Hubungan antara jenis kelamin dan program studi dalam mempengaruhi pengetahuan bantuan hidup dasar pada mahasiswa. *BNJ*. 2022;4(1):18–24.
- Palempung H, Kandow LFJ, Kairupan BHR. Profil supplementary scales Minnesota multiphasic personality inventory-2 (MMPI-2) adaptasi Indonesia pada mahasiswa semester 1 tahun akademik 2013/2014 Fakultas Kedokteran Universitas Sam Ratulangi Manado. *eCl*. 2014;2(2):5098.
- Wiguna F, Budiman, Nilapsari R. Perbedaan tingkat stres berdasarkan PSS pada mahasiswa tingkat 1 dengan tingkat 3 tahun ajaran 2020–2021 Fakultas Kedokteran Unisba selama pembelajaran di masa pandemi Covid-19. *BCSMS*. 2022;2(1):360–6.
- Arini L, Syarli S. Deteksi dini gangguan jiwa dan masalah psikososial dengan menggunakan self reporting questioner (SRQ-29). *J Keperawatan Muhammadiyah*. 2020;5(1):167–72.
- American Psychiatric Association. What is posttraumatic stress disorder (PTSD)? [Internet]. Washington: American Psychiatric Association; 2022 November [cited 2022 November 13]. Available from: <https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd>.
- Lăzărescu H, Kozma A, Iliuță A, Gabriela M. Psychological intervention and physical treatment of patients with post traumatic

- syndrome disorder. *IOSR JDMS*. 2019;18(10 Ser 13):14–8.
22. Nwoga CN, Audu MD, Obembe A. Prevalence and correlates of posttraumatic stress disorder among medical students in the University of Jos, Nigeria. *Niger J Clin Pract*. 2016;19(5):595–9.
  23. Rustam MZA, Nurlela L. Gangguan kecemasan dengan menggunakan self reporting questionnaire (SRQ-29) di Kota Surabaya. *JKMM*. 2021;3(1):39–47.
  24. Astuti DWP, Kairupan BHR, Elim C. Profil content scales minnesota multiphasic personality inventory-2 (MMPI-2) adaptasi Indonesia pada mahasiswa semester 5 TA 2012/2013 Fakultas Kedokteran Universitas Sam Ratulangi Manado. *JBM*. 2013;5(1 Suppl):S111–8.
  25. Wahyudi R, Bebasari E, Nazriati E. Gambaran tingkat stres pada mahasiswa Fakultas Kedokteran Universitas Riau tahun pertama. *JIK*. 2015;9(2):107–13.
  26. Agusmar AY, Vani AT, Wahyuni S. Perbandingan tingkat stres pada mahasiswa angkatan 2018 dengan angkatan 2015 Fakultas Kedokteran Universitas Baiturrahmah. *Health Med J*. 2019;1(2):34–8.
  27. Sholichah IF, Paulana AN, Fitriya P. Self-esteem dan resiliensi akademik mahasiswa. *Proc Natl Conf Psikol UMG*. 2019;1(1):191–7.
  28. Gatt JM, Alexander R, Emond A, Foster K, Hadfield K, Mason-Jones A, et al. Trauma, resilience, and mental health in migrant and non-migrant youth: an international cross-sectional study across six countries. *Front Psychiatry*. 2020;10:997.
  29. Mufidah AC. Hubungan antara dukungan sosial dan resiliensi dengan locus of control sebagai moderator pada mahasiswa bidikmisi. *Persona*. 2017;16(2):121–30.
  30. Sari PKP, Indrawati ES. Hubungan antara dukungan sosial teman sebaya dengan resiliensi akademik pada mahasiswa tingkat akhir jurusan x Fakultas Teknik Universitas Diponegoro. *J Empati*. 2016;5(2):177–82.