

Association Between Personality Types with Emotional Intelligence among First Grade Medical Students

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ABSTRACT

Introduction: Medical students are expected to possess various competencies and strong clinical skills to become competent and professional doctors. These demands require not only intellectual ability but also high emotional intelligence, which supports mental resilience, positive thinking, and social adaptability. Emotional intelligence is influenced by several internal factors, including personality type, commonly categorized as extroverted or introverted. The purpose of this study was to examine the relationship between extrovert and introvert personality types with the level of emotional intelligence in students of the Faculty of Medicine, Tarumanegara University, class of 2024.

Method: This study employed an observational analytic design with a cross-sectional approach. A total of 194 medical students from the Faculty of Medicine, Tarumanegara University, Class of 2024, were selected using a simple random sampling technique. Data were collected using the Eysenck Personality Inventory (EPI) to assess personality types and the Assessing Emotional Scale (AES) to measure emotional intelligence. Data analysis was conducted using the Chi-Square test.

Results: 57.7% of respondents were extroverts, while 43.3% were introverts. In terms of emotional intelligence, the majority (69.1%) were in the high category. The Chi-Square test showed a P -value of 0.000 ($P < 0.05$), indicating a statistically significant relationship between personality type and emotional intelligence.

Conclusion: There is a significant relationship between personality type and the level of emotional intelligence among medical students. Extroverted students tend to have higher emotional intelligence, suggesting that personality traits may influence students' emotional adaptability and resilience throughout their education.

Keywords: Emotional intelligence, medical students, personality type



Published by:
Universitas Negeri Gorontalo

Mobile number:
+62852 3321 5280

Address:
Jend. Sudirman St. No.6, Gorontalo
City, Gorontalo, Indonesia

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jmhsj@ung.ac.id

Article History:
Received 24 July 2025
Accepted 29 August 2025
Published 31 August 2025

DOI:
<https://doi.org/10.37905/jmhsj.v4i2.33620>

Introduction

Students are members of a higher education institution who must have responsibility and independence to do academic tasks in accordance with the competency standards determined by the university. Especially for medical students, where they must achieve various competencies and good clinical skills to become competent and professional doctors in the future. Therefore, students need to have a positive way of thinking and psychology, good emotional intelligence, and a strong personality and mentality to complete their education. Students with good emotional intelligence will be able to master any difficult problems in their education, have a positive way of thinking and behavior towards themselves and others, and be able to solve the challenges or obstacles faced, as well as never give up on existing circumstances to achieve the expected educational results.

On the other hand, if a person does not have emotional intelligence, it is usually easy to experience psychiatric disorders, lack emotional control and easily dissolve in sadness when faced with failures in their lives. Therefore, emotional intelligence is needed. A person with emotional intelligence will have a high sense of introspection so that he will not be easily angry, not easily desperate, selfish and always have a sense of openness to face various life problems.¹

The ability to control emotions so that high emotional intelligence is achieved affects the success of students in living their college life, because there is a lot of evidence that shows that individuals with good emotional intelligence tend to be more successful in various aspects of life.² It was found that emotional intelligence accounts for 80% of the determining factors of a person's success and the other 20% is determined by intellectual intelligence.

Gupta et al. concluded that first-year medical students with higher emotional intelligence felt less stress or in other words were able to handle stress more effectively.³ Individuals with higher emotional intelligence are also able to manage their emotions more effectively in the workplace, academic, and other situations, so they often achieve optimal success.⁴

Low emotional intelligence appears to be correlated with several psychiatric disorders such as depression and failure in education.⁵ According to World Health Organization (WHO), depression is a common and quite serious mental disorder that is marked by deep feelings of sadness and loss of interest in daily activities for a long period of time. Depression can affect the way a person thinks, feels, and acts, and can also significantly interfere with the quality of life. Basic Health Research (Riskesdas) 2018 shows that more than 19 million people over the age of 15 experience mental and emotional disorders, and more than 12 million people over the age of 15 experience depression.⁶ Chenganakkattil et al. stated that the prevalence rate of

depression among medical students was higher, which was 20.6%, compared to engineering students who had a prevalence of 15.3%.⁷ Meanwhile, research at Tarumanagara University showed a prevalence rate of depression of 39.3%, which is a higher number compared to the prevalence of depression reported by WHO and Riskesdas. Where depression is most experienced by first-year students.⁸

Personality type is one of the internal factors that can affect a person's emotional intelligence. In personality theory, personality types are often classified into two main categories, including extroverts and introverts.⁹ Individuals with introverted personality types tend to feel uncomfortable in intensive social interactions, overthink without acting, tend to be introverted, have difficulty adjusting to a new atmosphere and have difficulty working with people with different personality types. On the other hand, individuals with extroverted personality types feel uncomfortable if they have to be in silence and tend to like active social interactions and enjoy being in a crowd.²

This difference in personality type has a significant impact, especially for students. Individuals with extroverted personality types are more prone to promiscuity, careless behavior, selfishness, and a lack of willingness to give in. Meanwhile, individuals with introverted personality types tend to be antisocial, less confident, less concerned about the environment, and prone to depression. The purpose of this study was to examine the relationship between extrovert and introvert personality types with the level of emotional intelligence in students of the Faculty of Medicine, Tarumanagara University, class of 2024.

Methods

This study is an observational analytical study with a cross-sectional approach, which aims to assess the relationship between two variables at the same time. The research was carried out from February to April 2025 at the Faculty of Medicine, Tarumanagara University. The researcher has obtained permission and ethical approval contained in the research ethical feasibility document, with letter number, Number: 503/KEPK/FK UNTAR/XII/2024 in Jakarta, December 3, 2024.

The subject in this study is a student of the Faculty of Medicine, Tarumanagara University class of 2024. The sampling technique was carried out using the simple random sampling method and obtained a total sample of 194 people. The calculation of the number of samples was carried out based on a two-proportion formula using $Z\alpha = 1.96$ and $Z\beta = 0.84$, as well as the proportion of introverted and extroverted students who had low emotional intelligence of 60% and 40%, respectively. Based on this calculation, the minimum number of

samples was obtained of 194 people.

The inclusion criteria in this study are students of the class of 2024, aged 17–25 years, and willing to become respondents. This study does not use medical record data, but primary data obtained directly from respondents through filling out an online questionnaire using the Google Forms platform. Before filling out, each respondent was given informed consent to guarantee the ethical principles of the research.

The independent variable in this study was personality type (extrovert and introvert) and the dependent variable was emotional intelligence. The operational definition of each variable has been clearly defined, and the grouping of variables based on the measuring tool has been widely validated in various previous studies.

The research instrument used consisted of two types of questionnaires, namely the Eysenck Personality Inventory (EPI) to measure personality type and the Emotional Intelligence Scale (EIS) to measure emotional intelligence. The EPI consists of 24 items that measure the extroversion-introversion dimension, with a scale of Yes/No answers. A score of ≥ 12 is categorized as extroverted, while a score of ≤ 11 is categorized as an introvert. Scoring is carried out by giving a score of 1 for the appropriate answer (*favourable*) and 0 for the unfavourable, and vice versa for the unfavourable item. Meanwhile, the EIS consists of 33 questions covering four dimensions: *emotional perception*, *emotional assimilation*, *emotional understanding*, and *emotional management*, with a Likert scale of 5 points (1 = strongly disagree, up to 5 = strongly agree). Emotional intelligence is categorized into two, namely high (score 100–165) and low (score 33–99).

Data analysis was conducted bivariately to describe the demographic characteristics of respondents and used the Chi-Square test to see a significant difference between the emotional intelligence levels of introverted and extroverted students. The entire process of data collection and analysis is carried out in accordance with scientific principles and research ethics standards using SPSS (IBM, USA) and Excel (Microsoft, USA).

Result

This research was carried out from February to March 2025 by involving 194 student respondents of the Faculty of Medicine, Tarumanagara University class of 2024 who met the inclusion criteria. After giving informed consent, research was conducted and data on name, age, gender and data on the relationship between extroverted and introverted personality types and emotional intelligence.

Table 1 shows the baseline characteristics of study samples. Regarding gender

characteristics, 143 respondents were female (73.7%) and 51 (26.3%) respondents were male. This indicates that most respondents were female. According to the data, most respondents in this study were 18 years old, namely 101 people (52.1%). Respondents aged 19 years were 68 people (35.1%), 20 years old were 12 people (6.2%), 17 years old were 8 people (4.1%), and 21 years old were 2 people (1.0%). Meanwhile, respondents aged between 22 and 24 years were 3 people (1.5%).

Table 1. Baseline characteristics of study samples (N=194).

Respondent Characteristics	Category	Quantity (n)	Percentage
Gender	Man	51	26.3%
	Woman	143	73.7%
Age	17 years	8	4.1%
	18 years	101	52.1%
	19 years	68	35.1%
	20 years	12	6.2%
	21 years	2	1.0%
	22 years	1	0.5%
	23 years	1	0.5%
	24 years	1	0.5%

Table 2 shows the frequency distribution of personality types of study samples. Most of the students of the Faculty of Medicine, Tarumanagara University Class of 2024 have an extroverted personality (57.7%) and another 43.3% have an Introverted personality.

Table 3 reveals the descriptive analysis of emotional intelligence of study samples. A clear distinction in emotional intelligence scores between introverted and extroverted individuals. Extroverts not only outnumber introverts in the sample, but they also demonstrate substantially higher emotional intelligence on average. The mean, median, and mode scores for extroverts consistently surpass those of introverts, indicating a general trend rather than an outlier effect. While the spread of scores (as shown by the standard deviation) is nearly identical in both groups, extroverts show a notably higher baseline—illustrated by their minimum score being above the introverts' average. This highlighted that emotional intelligence tends to be stronger in individuals with extroverted personality traits.

Table 2. Frequency distribution of personality types (extroverts and introverts).

Respondent Characteristics		Quantity (n)	Percentage (%)
Personality Type	Introvert	82	43.3%
	Extrovert	112	57.7%
Total		194	100%

Table 3. Descriptive analysis of emotional intelligence (N=194).

		Frequency (n)	Percentage (%)
Emotional intelligence level	Low	60	30.9
	High	134	69.1
Emotional intelligence score	Introvert		
	Mean ± SD	103.52 ± 14.90	
	Median (Min-Max)	99.00 (50.00-153.00)	
	Extrovert		
	Mean ± SD	132.64 ± 14.93	
	Median (Min-Max)	131.50 (100.00-165.00)	

SD: Standard deviation

The difference in the level of emotional intelligence between introverted personality students and extroverted personality types

The difference in the level of emotional intelligence between students with introverted personalities and students with extroverted personality types was analyzed using the Chi-Square test (Table 4). All Chi-Square test assumptions are met, with no expected values below 5. The Continuity Correction was used due to the 2x2 table format. The test yielded a *P*-value of 0.000, which is less than the significance level of 0.05, indicating a statistically significant result. Therefore, it can be concluded that personality type significantly influences students' emotional intelligence.

Table 4. Distribution of emotional intelligence levels based on student personality type (introverted and extroverted). Data was analyzed using Chi-square test.

		Emotional Intelligence		Total	<i>P</i> -value
		Low	High		
Personality Type	Introvert	60	22	82	0.000
	Extrovert	0	112	112	
Total		60	134	194	

Discussion

Subject characteristics

Based on the research data that has been obtained, it is known that most of the 143 (73.7%) respondents in this study are female and a total of 51 (26.3%) respondents are male. This is in line with the research conducted by Claudia which examines the influence of personality and emotional intelligence. In the study, respondents were dominated by women by 55%.¹⁰ Another alignment study was conducted by Azzahra. In his research on medical students in Jakarta, it was found that the majority of respondents were female.¹¹

The characteristics of respondents based on age were known to be mostly 101 (52.1%) respondents aged 18 years, as many as 68 (35.1%) respondents were at the age of 19 years, a total of 12 (6.2%) respondents were 20 years old, a total of 8 (4.1%) respondents were 17 years old, and a total of 2 (1.0%) respondents were 21 years old, and a total of 3 (1.5%) respondents were 22-24 years old. The results of this study are different from the research conducted by Margolang¹², which examines the relationship between personality type and emotional intelligence in medical students. In the study, most respondents were in the age range of 20-21 years.

Although there were differences in the age range of the respondents, this did not have much effect on studies related to personality type. This is reinforced by a study conducted by Bleidorn et al. which explains that personality types can indeed change over time, but the possibility of personality type changes is small and tends to be stable in early adulthood.¹³ According to Kuang et al., the age of 18 years is already included in the adult age category. Based on the journal, it is stated that the adult age range is from 18 to 29 years old.¹⁴

Most students of the Faculty of Medicine, Tarumanagara University Class of 2024 have an Extroverted personality (57.7%) and another 43.3% have an Introverted personality. This is in accordance with the research conducted by Delendra et al. where the research subject has an extroverted personality type.¹⁵ However, the results of this study are different from the findings made by Azzahra.¹¹ In her research related to personality type towards Burnout System conducted on medical students, most respondents were introverted personality types (55.2%).

The relationship of emotional intelligence levels between introverted personality students and students with extroverted personality types

The average score of emotional intelligence of the introverted personality type in this study was found to be 103.5 while the average score of the emotional intelligence of the extroverted personality type was 132.6. The minimum score for the emotional intelligence

score of the introverted personality type is 50 and the maximum is 153, while the minimum score for the emotional intelligence of the extroverted personality type is 100 and the maximum score is 165. Based on the results of the Chi-Square test, it is known that H_0 is rejected. This means that there is an influence between personality types on emotional intelligence. This means that extroverted personalities have higher emotional intelligence values compared to introverted personality types.

Emotional intelligence is the ability to recognize, manage, understand, and accept emotions.¹⁶ A person who has good emotional intelligence will be able to cooperate well with others, be able to manage work pressure, have good leadership, and so on. Based on this study, it was found that people who have extroverted personalities have an influence on their emotional intelligence, where the emotional intelligence possessed by extroverts is better than that of introverted types.

Extroverted personalities have high social skills, for example related to fostering social relationships with others. In addition, extroverts get positive energy from the social environment, which strengthens emotional regulation making them have higher emotional intelligence.¹⁷ Therefore, based on their personality traits, extroverted individuals have a greater chance of developing emotional intelligence than introverted individuals.

One of the studies that supports these findings is the study conducted by Antiniene.¹⁸ Individuals with extroverted personalities have a tendency to be highly empathetic, which is one of the signs of a person's emotional intelligence. Research conducted by Subtinanda and Yuliana shows that a person with an extroverted personality also tends to be more responsive to others, so this indicates that the extroverted personality type is more socially sensitive, which also indicates higher emotional intelligence.¹⁹

The relationship between personality types and emotional intelligence can be seen from research conducted by Cahyaningsih and Firdaus.²⁰ In the study, it was found that nurses who had a lower extroverted personality experienced burnout while working. This shows that the emotional regulation possessed by the respondents is very good, reinforcing the finding that personality type affects emotional intelligence.

Research limitations

This study examines the scope of students of the Faculty of Medicine, Tarumanagara University 2024 so that the generalization area is limited. In addition, the limitations of other factors also make this research further develop, for example environmental factors such as family background and so on which can also contribute to the formation of emotional intelligence from the students' studies.

Conclusion

This study shows that there is a significant relationship between extroverted and introverted personality types and the level of emotional intelligence possessed by students of the Faculty of Medicine, Tarumanagara University class of 2024. These findings suggest that personality characteristics play an important role in an individual's ability to recognize, understand, and manage emotions, both toward oneself and others. Based on these results, it is recommended that students of the Faculty of Medicine, Tarumanagara University class of 2024 can better recognize their respective personality characteristics and develop aspects of emotional intelligence, such as emotion management and self-reflection. This is important considering that the medical profession requires the ability to serve the community well, which requires high emotional intelligence. In addition, the researcher is expected to examine other variables that affect emotional intelligence, such as academic stress or environmental factors, as well as consider other personality types outside of extroverts and introverts to gain a more comprehensive understanding.

Conflicts of Interest

Nothing to declare.

Funding sources

Nothing to declare.

Acknowledgment

Nothing to declare.

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