



## Emotional intelligence in medical students of the da Vinci University of Guatemala

### *Inteligencia emocional en estudiantes de Medicina de la Universidad da Vinci de Guatemala*

### *L'intelligence émotionnelle chez les étudiants en médecine Université da Vinci du Guatemala*

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## ABSTRACT

**Introduction:** Emotional intelligence has gained importance today, especially for the medical career due to exposure to stressful factors within their practices, because they must respond to the teaching-learning and clinical area demands that their academic training requires. **Objective:** To describe the level of emotional intelligence in 4th and 6th year medical students of the Da Vinci University of Guatemala in 2022. **Method:** It was carried out through an observational, descriptive cross-sectional study and the level of emotional intelligence was evaluated through the Bar On-Ice

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test. The universe of study was all the fourth and sixth year medical students of Da Vinci University. Informed consent and data confidentiality were complied with. Variables were operationalized and the necessary techniques and procedures were used to achieve the objectives. **Results:** The general average of the level of emotional intelligence is 82.72 points. The stress management and intrapersonal components had an adequate emotional capacity. The scales with the lowest scores were: mood (84.84 points), adaptability (83.33 points) and the interpersonal scale (79.90 points). Both sexes had the same average emotional intelligence (83). The students of 32 years old had a high coefficient (121) for a developed emotional intelligence. **Conclusions:** the fourth and sixth year medical students of the Da Vinci University of Guatemala presented a low level of emotional intelligence on their different scales.

**Keywords:** emotional intelligence, stress, adaptability

## RESUMEN

**Introducción:** la inteligencia emocional ha cobrado importancia en la actualidad, en especial para la carrera de medicina debido a la exposición a factores estresantes dentro de sus prácticas, porque deben responder a las demandas de enseñanza - aprendizaje y área clínica que su formación académica exige. **Objetivo:** describir el nivel de inteligencia emocional en estudiantes de 4to y 6to año de medicina de la Universidad Da Vinci de Guatemala en 2022. **Método:** se realizó a través de un estudio observacional, descriptivo de corte transversal y se evaluó el nivel de inteligencia emocional a través del test Bar On-Ice. El universo de estudio fueron todos los estudiantes de medicina de cuarto y sexto año de medicina de la Universidad Da Vinci. Se cumplió con el consentimiento informado y la confidencialidad de los datos. Se operacionalizaron variables y se utilizaron las técnicas y procedimientos necesarios para dar salida a los objetivos. **Resultados:** la media general del nivel de inteligencia emocional es de 82,72 puntos. Los componentes del manejo estrés e intrapersonales tuvieron una capacidad emocional adecuada. Las escalas de menor puntuación fueron: estado de ánimo (84,84 puntos), adaptabilidad (83,33 puntos) y la escala interpersonal (79,90 puntos). Ambos sexos tuvieron el mismo promedio de inteligencia emocional (83). Los estudiantes de 32 años tuvieron un coeficiente elevado (121) para una inteligencia emocional desarrollada. **Conclusiones:** los estudiantes de cuarto y sexto año de medicina de la Universidad Da Vinci de Guatemala presentaron un bajo nivel en cuanto inteligencia emocional en sus diferentes escalas.

**Palabras clave:** inteligencia emocional, estrés, adaptabilidad

## RÉSUMÉ

**Introduction:** L'intelligence émotionnelle a pris de l'importance aujourd'hui, en particulier pour la carrière médicale en raison de l'exposition à des facteurs de stress au sein de leurs pratiques, car ils doivent répondre aux exigences d'enseignement-apprentissage et de domaine clinique que leur formation universitaire exige. **Objectif:** Décrire le niveau d'intelligence émotionnelle des étudiants

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en médecine de 4<sup>e</sup> et 6<sup>e</sup> année de l'Université Da Vinci du Guatemala en 2022. **Méthode:** elle a été réalisée par le biais d'une étude transversale descriptive observationnelle et le niveau d'intelligence émotionnelle a été évalué par le test Bar On-Ice. L'univers d'étude était tous les étudiants en médecine de quatrième et sixième année de l'Université Da Vinci. Le consentement éclairé et la confidentialité des données ont été respectés. Les variables ont été opérationnalisées et les techniques et procédures nécessaires ont été utilisées pour atteindre les objectifs. **Résultats:** La moyenne générale du niveau d'intelligence émotionnelle est de 82,72 points. La gestion du stress et les composantes interpersonnelles avaient une capacité émotionnelle adéquate. Les échelles avec les scores les plus faibles étaient: l'humeur (84,84 points), l'adaptabilité (83,33 points) et l'échelle interpersonnelle (79,90 points). Les deux sexes avaient la même intelligence émotionnelle moyenne (83). Les élèves de 32 ans avaient un coefficient élevé (121) pour une intelligence émotionnelle développée. **Conclusions:** Les étudiants en médecine de quatrième et sixième année de l'Université Da Vinci du Guatemala ont présenté un faible niveau d'intelligence émotionnelle sur leurs différentes échelles.

**Mots-clés:** intelligence émotionnelle, stress, adaptabilité

## INTRODUCTION

Emotional intelligence is a topic that has gained importance today, especially for the medical career, where students in recent years may be affected by their mental health; particularly in their emotional control capacities, when exposed to stressors within their practices, because they must respond to the attention and learning demands that their academic training requires.

Currently it is common to talk about emotional intelligence as a topic related to various human activities. It is usually understood as a skill that the person uses, through the development of their resolution skills and abilities, coping with situations, events, problems and difficulties of daily living, which depend to a large extent on control and emotional well-being.

According to the WHO, " emotional well-being is a state of mind in which a person realizes his or her abilities, can face the pressures of life, can work productively and fruitfully, and is capable of making a contribution to the community." <sup>1</sup>

In this sense, many circumstances can affect the emotional status of people: stress factors, personal, academic or family circumstances; which become generators of symptoms or indicators of some possible psychological pathology. For this reason, it is opportune to carry out a study where the interaction of emotional intelligence in other personal spaces can be detected. This is because according to PAHO/WHO "fear, worry, and stress are normal responses when facing uncertainty, the unknown, or situations of change or crisis." <sup>1</sup>

Therefore, it is possible that in the face of certain stressors (such as the pressure of academic activities, work overload, the adaptation process in a hospital and excessive working hours) students

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may respond with exhaustion, sleep problems, decay, and even emotional poverty; what is evidenced in their own performance in different spheres, personal, academic, work or social. Hence the need to know a little more about emotional intelligence. <sup>23</sup>

When relating emotional intelligence to learning in education, it is noted that moods, beliefs and motivation influence how situations are perceived, and at the same time intervene in the teaching and learning process. There is a relationship between academic training with the projection of life, by highlighting ethics, knowledge, praxis and the relationship with other aspects necessary for the comprehensive training of future professionals. <sup>4</sup>

If emotional intelligence increases, it improves the quality of work life and coping strategies and medical empathy, which is nothing more than the skills to understand the emotional state of people and manage to interact with them in a healthy way. In such a case, the students, while on duty at the hospital, manage to have positive, respectful and understanding attitudes about the health conditions of the patients. <sup>3</sup>

In correspondence with the relevance that emotional intelligence acquires in the field of training students of medical sciences; the objective of this article is to describe the level of emotional intelligence of fourth and sixth year medical students at the Da Vinci University of Guatemala.

**METHOD**

An observational, descriptive, cross-sectional study was carried out in the context of the Faculty of Medical and Life Sciences of the Da Vinci University of Guatemala, between the months of July and September 2022. The study population consisted of the 100 fourth and sixth year students of the Faculty of Medical and Life Sciences of the Da Vinci University of Guatemala.

In order to respond to the objective of the research, the following variables were operationalized: age, sex, academic year of the medical degree, emotional intelligence and emotional intelligence scales; the latter is made up of five components: interpersonal, intrapersonal, stress management, mood, adaptability.

*Bar- On Ice* <sup>5</sup> was used to measure levels of emotional intelligence, which was applied to the students that made up the population. This test made it possible to visualize the emotional quotient of the students, through a group of items, distributed in the five emotional intelligence scales mentioned above, whose results in a general average were summarized in standard scores divided as follows.

Standard scores	Interpretation Guidelines
130 and over	Highly developed emotional capacity: Markedly high. Unusual emotional capacity.

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115 to 129	Developed emotional capacity: High, Good emotional capacity.
86 to 114	Adequate emotional capacity: Average.
70 to 85	Needs improvement: Low. Below average emotional capacity

Said instrument was applied through a *Google Forms* form, where a database was obtained through a format of an automated program of the *Test Bar-On Ice*, applied in *Microsoft Excel*. The average score was calculated on each of the test measurement scales, stratified by age, sex, and academic year.

The participants in the study were made aware of everything related to the importance of the research and its objective. Through their informed consent, the students participated individually, voluntarily and anonymously; whose data was used for research purposes, respecting the confidentiality of their answers and results. The criteria of the II Declaration of Helsinki for scientific research with human beings were met.

For the variables measured on a quantitative scale, the averages were used. The results were presented in tables to facilitate communication and understanding of the results.

## RESULTS

The general average of the level of emotional intelligence is 82.72 points, which indicates a low emotional capacity in the students. It is considered that they must improve this capacity for the performance of the activities in general that they must perform.

According to the results of the *Bar-On Ice Test*, it was observed that the stress management and intrapersonal components had an adequate emotional capacity. Therefore, the ability to tolerate different stressors and adverse events, the ability to work under pressure, assertiveness and visualization of oneself, and the ability to understand oneself emotionally are adequate. (See Table 1)

The scales with the lowest average score were: mood (84.84 points), adaptability (83.33 points) and the interpersonal scale (79.90 points). This indicates that they should improve their mood, problem-solving skills, and empathy in their interpersonal relationships. (See Table 1)

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**Table 1.** Mean score of the scales of the Bar-On Ice Test in the medical students of the Da Vinci University of Guatemala.

Emotional intelligence scales	Half	Classification
Components of mood	84.84	Low
Components of stress management	85.60	Average
Adaptability components	83.33	Low
Interpersonal components	79.90	Low
Intrapersonal components	85.87	Average

Regarding the distribution by sex, in general the same average was presented for both sexes (83 points), which was low. The female sex presented a higher mean in the mood and intrapersonal components. Female students have better happiness, optimism and objective appreciation of things; they have better self-understanding, assertiveness and the ability to visualize themselves in a positive way. (Table 2).

On the other hand, the male sex reached a higher average score in the stress management and intrapersonal components. This is evidence of adequate stress tolerance and impulse control, as well as an adequate response to stressful events. (Table 2).

**Table 2.** Distribution of the mean score of the emotional intelligence scales according to sex.

Emotional intelligence scales	Sex	
	Female	Male
Mood	85	84
Stress management	83	89
Adaptability	83	83
Interpersonal	82	77
Intrapersonal	89	87
Grand Total	83	83

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In reference to the most relevant scores of the emotional quotient, the students with a higher average in all the Emotional Intelligence scales are those of 23, 25, 26, and 32 years of age, which indicates good emotional control and good development of the different emotional abilities, which allow them to maintain adequate interpersonal relationships, are functional under pressure, adapt adequately to changes, have good self-understanding and motivation, empathy skills, and social responsibility. In contrast, the students of 22, 24 and 28 years, reached a lower average score of emotional intelligence. (Table 3).

**Table 3.** Average distribution of the scores of the emotional intelligence scales according to age.

Age	Emotional intelligence scales according to the Bar On-Ice Test					
	Mood	Stress management	Adaptability	Interpersonal	Intrapersonal	Emotional Intelligence Grand Total
<b>21</b>	83.0	82.0	85.0	79.5	91.0	83.0
<b>22</b>	83.3	77.8	74.8	77.0	76.5	72.3
<b>23</b>	89.8	97.0	90.5	86.0	97.3	91.3
<b>24</b>	78.9	77.2	77.6	70.3	82.6	74.4
<b>25</b>	90.7	90.3	91.3	89.3	97.3	91.3
<b>26</b>	99.0	90.0	107.0	90.0	107.0	100.0
<b>28</b>	76.5	82.5	78.0	75.0	80.0	75.0
<b>29</b>	89.0	98.0	79.0	83.5	88.0	87.5
<b>30</b>	84.7	94.7	79.3	79.3	90.7	88.0
<b>32</b>	125.0	121.0	120.0	105.0	122.0	121.0

The students of both academic years presented low averages of the emotional intelligence quotient. The intrapersonal scale was the one with the highest value for both groups of students. Fourth-year students were less assertive on the stress management scale, and sixth-year students on the interpersonal scale. (Table 4).

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**Table 4.** Average distribution of the scores of the emotional intelligence scales according to the academic year of the degree.

Academic year	Emotional intelligence scales according to the <i>Bar On-Ice Test</i>					
	Mood	Stress management	Adaptability	Interpersonal	Intrapersonal	Grand Total
Room	81.4	81.3	81.6	81.4	87.9	80.7
Sixth	85.7	86.7	84.2	77.6	88.1	82.7

## DISCUSSION

The general average of the level of emotional intelligence indicates a low emotional capacity in the students. It is considered that they must improve this capacity for the performance of the activities in general that they must perform.

In the study carried out by Hernández *et al.*,<sup>2</sup> 54.84% of the students present difficulties in the ability to feel and express their own emotions correctly, which prevents them from recognizing their state of mind. According to the indicators, they observe that the school promotes emotional intelligence and the objective is to educate young people capable of recognizing and managing their emotions.

These figures when compared with the present investigation, show that there is a certain similarity in the results, when appreciating a low level of the emotional quotient of the students. This requires an improvement for the relevant development of students in the activities of the different areas where they operate.

Compared with other groups of university students, the present study had more encouraging results. Páez-Cala *et al.*,<sup>3</sup> found that the mean emotional capacity was low in 65% of the population studied, then located at a very low level of emotional quotient. They also consider that emotional intelligence is a social competence in any profession, also in the health sciences, whose professionals interact in situations of crisis, pain, suffering and death, which requires an adequate, agile, empathetic and proactive attitude.

The results of this study showed that, although they have a low level of emotional quotient, the students showed strengths on the intrapersonal scale and stress management. The Barona<sup>6</sup> study showed that students know their feelings to act in situations in which they are faced, however, they have been affected by situations where their emotions were frustrated by not being able to express them fully, although their mood is positive or negative.

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It has been considered by the literature that the COVID-19 pandemic had a significant impact on the construction of a developed emotional capacity. The aforementioned study refers to the pandemic as a factor that influenced obtaining a low emotional quotient in 46% of the students investigated, while only 12% reached the highest scores.<sup>6</sup>

Samaniego<sup>7</sup> with the study of emotional intelligence and depression in the context of confinement, evaluated students enrolled in courses in the virtual modality, and obtained high results in the intrapersonal component; sign of a good relationship with feelings, optimism towards studies and life, ability to express feelings, stability and independence. A smaller part of the students obtained opposite results with the presence of depression.

Torres<sup>8</sup> in his study reflects that of the students who participated in the research, 84 obtained a medium result, 35 a high result and six a low result of emotional intelligence. In addition, he concluded that there is a close relationship between performance and emotional intelligence. For fourth and sixth year medical students, specifically, the majority had a medium level, as in Torres' research.

The research background regarding emotional intelligence according to sex presents similarities with the results of the present study. Camarena<sup>9</sup> describes that stress management among females presents a low emotional capacity, with higher averages on the mood and intrapersonal scales. However, on the stress management scale, male students are the ones that obtained the best average.

The importance of the balance between rational and emotional is evident. In the same way, Al-Ezzi *et al*<sup>10</sup> mentions it and Contreras-Escobar,<sup>11</sup> emotionally intelligent people are more likely to predict uncertainty in the work environment, adapt to changes in the environment, solve problems, and show creative ways of dealing with colleagues and clients. Referring to workers in the hospital environment, doctors.

In the investigations where the population was integrated by health professionals,<sup>12-14</sup> the results of emotional intelligence are better than in the students of the present investigation. The authors consider that it is necessary to emphasize the emotional aspect during the permanence in the career, to guarantee adequate and developed emotional capacities when arriving at the work stage.

In his results, Carranza<sup>15</sup> found that students do not effectively handle the different situations in their student life, due to the lack of maturity in their emotions when they are in the university stage. When presenting ups and downs, problems can be manifested in relation to their expectations and their academic achievements.

It is important and opportune that universities integrate into their study programs for medical students elective learning modules on emotional intelligence, based on personal, emotional and attitudinal competencies. In this way, the student's profile will be more efficient in their academic

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and care performance, so that upon graduation they will be professionals with greater empathy and adequate emotional management.

## CONCLUSIONS

The fourth and sixth year medical students of the Da Vinci University of Guatemala presented a low level of emotional intelligence on their different scales, with no marked differences between these two years.

## FINANCING

No funding was received for the development of this study.

## CONFLICTS OF INTEREST

No conflicts of interest are declared.

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