

Original article

The resilience competence in medical students. An approach to its diagnosis



La competencia resiliencia en estudiantes de Medicina. Un acercamiento a su diagnóstico

A competência resiliência em estudantes de Medicina. Uma aproximação ao seu diagnóstico

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ABSTRACT

The professional training of medical students, given the complexity of the current social context, the high academic demands and the adverse situations of clinical practice in the doctor-patient relationship, calls for support based on emotional education and the development of competencies, with an emphasis on resilience competence. The objective is to evaluate the state of resilience in third-year students of the Medicine program at the University of Medical Sciences of Camagüey. As methods, the diagnostic study applied participant observation, document analysis, the semi-structured interview, Daniel Alarcón's test, which made it possible to evaluate the students' resilience capacity, and the questionnaire consisting of five domains, which made it possible to evaluate levels of resilience: physical, emotional, cognitive and creative, spiritual, and social and systemic. The study is descriptive and cross-sectional, based on pure non-probabilistic purposive sampling. The main

results lay in the diagnosis, obtained through qualitative and quantitative analysis of the data provided by the instruments, which were synthesized by means of triangulation. It is concluded that the study revealed limited knowledge and emotional management, as well as few resources and ways of coping, elements that should be considered when structuring their development in the training process of medical students, in accordance with the foundations of the competency-based approach.

Keywords: competence; students; training; medicine; resilience.

RESUMEN

La formación profesional de los estudiantes de Medicina a partir de la complejidad del actual contexto social, las altas exigencias académicas y las situaciones adversas de la práctica asistencial, en la relación médico-paciente, demanda del sustento basado en la educación emocional y el desarrollo de competencias, con énfasis en la competencia resiliencia. El objetivo está encaminado a evaluar el estado de la resiliencia en los estudiantes del tercer año de la carrera de Medicina de la Universidad de Ciencias Médicas, Camagüey. Como métodos se utilizaron el estudio diagnóstico realizado, se aplicaron la observación participativa, el análisis documental, la entrevista semiestructurada, el test de Daniel Alarcón que permitió evaluar la capacidad de resiliencia en los estudiantes y el cuestionario que consta de cinco dominios, el cual posibilitó la evaluación de niveles de resiliencia: física, emocional, cognitiva y creativa, espiritual, así como la social y sistémica. El estudio realizado es de tipo descriptivo, de corte transversal, desarrollado a partir de un muestreo intencional puro no probabilístico. Los resultados principales estuvieron en el diagnóstico, obtenido a través del análisis cualitativo y cuantitativo de los datos aportados con la aplicación de los instrumentos, los cuales fueron sintetizados mediante una triangulación. Se concluye que el estudio realizado develó el escaso conocimiento y manejo emocional, así como de recursos y vías para el afrontamiento, elementos que han de tenerse en cuenta para estructurar su formación desde el proceso formativo de los estudiantes de Medicina, conforme a los sustentos del enfoque por competencias.

Palabras clave: competencia; estudiantes; formación; medicina; resiliencia.

RESUMO

A formação profissional dos estudantes de Medicina, a partir da complexidade do atual contexto social, das altas exigências acadêmicas e das situações adversas da prática assistencial na relação médico-paciente, demanda um sustento baseado na educação emocional e no desenvolvimento de competências, com ênfase na competência resiliência. O objetivo é avaliar o estado da resiliência nos estudantes do terceiro ano do curso de Medicina da Universidade de Ciências Médicas de Camagüey. Como métodos, no estudo diagnóstico realizado, foram aplicados a observação participante, a análise documental, a entrevista semiestruturada, o teste de Daniel Alarcón, que permitiu avaliar a capacidade de resiliência dos estudantes, e o questionário composto por cinco domínios, que possibilitou a avaliação dos níveis de resiliência: física, emocional, cognitiva e criativa, espiritual, bem como social e sistêmica. O estudo realizado é do tipo descritivo, de corte transversal, desenvolvido a partir de uma amostragem intencional pura não probabilística. Os principais resultados estiveram no diagnóstico, obtido por meio da análise qualitativa e quantitativa dos dados fornecidos pela aplicação dos instrumentos, os quais foram sintetizados mediante uma triangulação. Conclui-se que o estudo realizado revelou o escasso conhecimento e manejo emocional, assim como de recursos e vias para o enfrentamento, elementos que devem ser considerados para estruturar sua formação no processo formativo dos estudantes de Medicina, de acordo com os fundamentos do enfoque por competências.

Palavras-chave: competência; estudantes; formação; medicina; resiliência.

INTRODUCTION

Interest in resilience among medical students takes on greater significance in light of their professional practice. It has become especially relevant in recent years because of the growing challenges these professionals must face internationally, shaped by scientific and technological development and by the economic, environmental and humanitarian crisis the world is experiencing, together with the problems associated with it, among them the shortage of medical supplies, natural disasters and pandemics.

In line with the needs of social and professional practice, authors such as Caldera Montes et al. (2016) stand out in this area of medical training; they investigated how certain factors behave in

relation to resilience. Kubrusly et al. (2019) also analyzed resilience factors, in this case sociodemographic and emotional ones, in order to compare them with the students' degree of resilience.

Campuzano and Libien (2019) identified the level of resilience in students of the Surgeon and Nutrition programs. Galarza López et al. (2023), in turn, carried out a theoretical review based on the need to ground medical training in emotional education, and Tuz Sierra et al. (2024) set out to identify possible differences in resilience between men and women.

In Cuba specifically, several studies on resilience in Medicine have been carried out, among them the study by Espinosa Brito (2008), who approaches it from Internal Medicine in the "resilient" search for its identity. Pérez Labrador (2020) analyzes the experiences of the COVID-19 pandemic and urges that what happened be used as an opportunity for a resilient health system. Vives Iglesias et al. (2023) diagnosed resilience in the positive psychological functioning of young people before and during the pandemic.

At the local level, there is the research by Betancourt Gamboa et al. (2021) on resilience levels in Dentistry students, which addressed the development of coping competence in nursing students through a model and an intervention program that is relevant to the present research.

The studies mentioned above are important references to consider in relation to existing problems with the resilience construct, such as the diversity of definitions, different theoretical approaches and the multiplicity of factors that condition it, a situation that makes such research highly complex. In this sense, studies are needed that achieve greater precision in the theoretical foundations underpinning the development of resilience competence in medical students, in which greater attention should be paid to the competency-based approach.

The scientific literature consulted highlights the importance of resilience in medical training and the need for diagnosis as a starting point for educational intervention. Different methods are presented, notably questionnaires and tests, but the proposals are not always supported by a variety of methods that would make it possible to explore the development of this competence in its integrative dimension. In educational practice, shortcomings persist among students because their needs and potential in this regard are not adequately identified.

Based on the authors' expertise and the sources consulted, a preliminary diagnosis was carried out with a view to implementing a psycho-pedagogical program. It revealed the following shortcomings: students' deficiencies in emotional management and in ways of coping with situations of medical practice such as distressing illnesses, stress and death, which has a negative impact on their professional performance; and a low tolerance for frustration, linked to the high demands of teaching and clinical work.

Accordingly, the scientific problem is formulated as follows: shortcomings in the expression and management of emotions in the professional settings of medical students, which limit their ability to overcome adverse situations in the training process. Hence, the objective of this article is to evaluate the initial state of resilience in these students, as theoretical and practical support for the need to develop it in order to cope with the adverse situations that arise in the profession.

MATERIALS AND METHODS

The diagnostic study presented here was conducted at the University of Medical Sciences of Camagüey. It is descriptive and cross-sectional, based on pure non-probabilistic purposive sampling, which made it possible to select a sample of students living in the municipality of Camagüey. The sample consisted of 68 third-year students, representing 35.98% of the population (189). The criteria were that students be in the third year of the program and of similar age (20 to 22 years), so their developmental stage is youth. During this period they spend more time in workplace-based education, completing a minimum of six (6) hours per week or 24 planned hours per month, depending on the characteristics of the settings. In addition, they have already studied the subjects General Psychology, Community Medicine and Introduction to Clinical Practice.

Likewise, 10 teachers were selected who teach subjects in the third academic year, including tutors, coordinators of the teaching process and those responsible for workplace-based education. The research covered the period from February to May 2024.

A variety of educational research methods were applied, such as participant observation, document analysis, the semi-structured interview, the test that made it possible to evaluate the students' resilience capacity, and the questionnaire consisting of five domains, which made it possible to evaluate levels of resilience: physical, emotional, cognitive and creative, spiritual, and social and systemic.

Based on the theoretical references analyzed and the authors' experience in the field, three dimensions were considered, cognitive, affective-motivational and procedural, each with its respective indicators.

1. Cognitive dimension:

1.1 Necessary knowledge of key concepts such as: a) emotions, b) socio-emotional competencies, c) resilience.

1.2 Knowledge of the particular features of resilience for successfully coping with the adverse situations that arise in the Medicine program.

1.3 Understanding of ways and actions that enable students to achieve resilience in the different contexts of action.

2. Affective-motivational dimension:

2.1 Emotional expression in teaching and clinical settings.

2.2 Strengths and limitations in: a) control and management of emotions, b) adaptability, c) coping with complex situations inherent to the training process.

2.3 Attitude taken toward the topic.

3. Procedural dimension:

3.1 Ability to perceive one's own and others' emotions in adverse situations.

3.2 Availability of ways: a) socializing agents, b) conditions for performance, c) personal resources that make it possible to achieve resilience: emotional balance, high self-esteem, positive humor in the face of difficulties and adaptability to adverse situations.

RESULTS

Taking into account the dimensions and indicators described above and the qualitative and quantitative analysis of the data provided by the methods initially described, the main results obtained were as follows:

In the cognitive dimension, indicator 1.1, 44.11% of the students (68) have a limited command of the concept of emotions, while 55.89% cannot refer to it at all, although they consider that emotions have a decisive influence on the doctor's professional practice. A total of 91.18% of the sample offered no arguments about socio-emotional competencies, while 8.82% say they know the concept, although they do not give examples of it.

Of the students, 85.29% do not master, from a theoretical point of view, aspects related to resilience, which markedly prevents them from addressing anything on the subject, let alone the characteristics or factors involved in successfully coping with the adverse situations that may arise in medical work. Meanwhile, 14.71% of the students, according to their own criteria, give examples only of the concept.

Of the students, 85.29% report having no theoretical knowledge at all, nor do they understand the ways and actions that make it possible to achieve resilience, since they do not receive this type of content, it is not given special attention during the training process, and they do not have professionals to guide them in this regard. However, 14.71% refer to the subject Psychology, based on content covered on communication with the patient, psychological stress and coping strategies.

All of the teachers (100%) considered the development of competencies, especially resilience, to be important. However, 70% acknowledged their lack of knowledge about the particular features that distinguish it in medical students, and 30% conceptualized resilience as "the teacher's capacity to face the problems that arise with solutions".

Along the same lines, and in order to determine how teachers guide students from a methodological point of view, class observations showed little use of phrases that stimulate emotions and feelings. Of the teachers, 40% infer conceptualizations based on emotions, socio-emotional competencies and resilience, according to their experience, while 60% are unaware of the basic elements of emotions and related concepts.

It is worth noting that teamwork is used, open and clear questions are asked, and students are encouraged to convey effective messages and to communicate properly according to the context. These aspects help students express feelings, emotions and needs clearly and sincerely. However, the teachers essentially do not know what resilience consists of, and the actions mentioned above are not used for this purpose.

The results related to the second, affective-motivational dimension reveal the real importance attributed to the topic, as well as the opinions and feelings experienced in this regard, expressed in professional and personal performance. It was found that 80% of the students have difficulty managing their emotions in teaching or clinical situations that may arise, and do not know how they might react or what attitude to take. Only 20% consider that they control their emotions, have a good sense of humor and can adapt to their environment, although they have some doubts about the process needed to achieve this. In this regard, a lack of knowledge and difficulties in their ways of acting were found with respect to handling and expressing their emotions.

Regarding the main limitations students perceive for the development of resilience competence, 85.29% report not knowing the topic, while 44.16% state that they have no professionals to guide them and that there is no time for it during school hours.

On the other hand, in the activities they carry out in their professional work, students consider that there is potential for developing it through achieving high self-esteem (53%). In addition, 94% say that in difficult personal situations they solve problems effectively, which contradicts the results of dimension 1, which reveal a lack of knowledge in these areas. Some 97% have a positive sense of humor, while adapting easily to adverse situations (people with terminal illnesses, deceased persons, natural disasters, pandemics, among others) was reported by only 52% of the students.

All of the students (100%) recognize that the topic is important and necessary for their training as future doctors, as seen in their personal assessments of it, expressed in positive emotions and attitudes associated with the study. They also value the possibility that developing resilience competence may help foster a more comprehensive perspective in the program, in line with the professional profile, which aims to train well-rounded doctors with optimal professional performance.

As for the teachers, all of them (10) were able to evaluate their own performance based on the interrelation of demands, the opinions of others and an individual analysis of their results. They

highlighted the importance of preparing the future health professional in controlling emotions and adapting to adverse settings, as well as the need to change the perception held about these settings.

They point out that the subjects taken during training that are related to the topic (Psychology, Introduction to Clinical Practice, Community Medicine, among others) do not explicitly address resilience, ways of acting in adverse situations or the attitudes these students need to develop, which they believe leaves a gap in preparation that later becomes evident in professional performance.

The existing shortcomings from a theoretical and methodological point of view, which hinder the development of this competence, were clearly identified. It was also confirmed that the socio-emotional issues these students need from the training process are not clear, nor have they been an explicit objective in curricula, programs or the professional profile.

In this regard, both students and teachers confirm their willingness to receive training on the subject. The importance of resilience competence for the comprehensive training of these students is recognized, as is dissatisfaction with the work done so far. Consequently, they expressed willingness to collaborate in the research and its implementation.

With respect to the third, procedural dimension, indicator 3.1, 64% have difficulty perceiving their own and others' emotions in adverse situations. Only 36% showed greater preparation in this respect and in how to control their emotional reactions and help manage other people's emotions whenever the situation calls for it. Observations of teaching activities confirmed the difficulties students have in correctly identifying their own and others' emotions and in understanding how they, their peers and their teachers feel in difficult interpersonal situations in the classroom or in unpleasant emotional experiences such as frustration, insecurity, pessimism and dejection, among others.

The instruments related to this third dimension showed that physical resilience was recognized by 65%, emotional resilience by 54%, cognitive and creative resilience by 54%, spiritual resilience by 53%, and social and systemic resilience by 51%. Physical resilience was therefore considered a strength, although the figures are still of limited significance, while the remaining types were considered weaknesses, indicating that these are areas needing greater attention to improve resilience. In terms of resilience levels, 17.64% were at a high level and attached great importance to it for their training as future medical professionals, while 82.35% were at a medium level owing to a lack of knowledge of the subject.

Of the students, 85.29% report that they do not know the possible ways and resources for coping with adverse situations and generating positive emotions, especially in situations that occur in the clinical context. These results greatly limit their ability to cope with adverse situations. Nevertheless, they identified the potential that may exist in their professional performance, although they do not master the resources or know how to use them. In this sense, the ways centered on socializing agents and the performance environment should be strengthened, along with coping strategies that emphasize social support, mentoring in life events and support groups.

All of the teachers agreed that this is a little-known area for both them and the students, which makes it difficult to master ways and resources for developing resilience. It was also stressed that the curriculum refers to the development of technical skills without giving importance to emotional education, so socio-emotional skills in medical students are neither identified nor addressed.

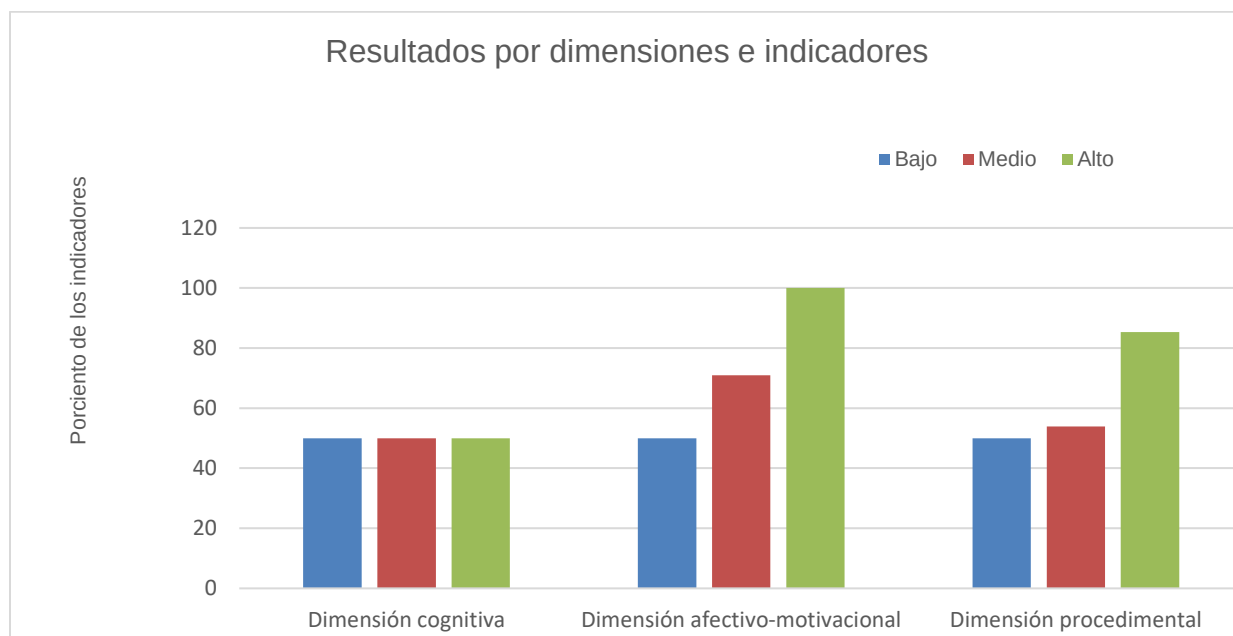


Figure 1. Results by dimensions and indicators

In summary, the diagnosis revealed the following strengths and weaknesses:

Strengths:

- Students and teachers recognize the need to acquire knowledge on the subject.

- Willingness and motivation of both teachers and students regarding the development of resilience competence.

Weaknesses:

- Lack of knowledge about the development of socio-emotional competencies.
- Little attention to the topic in the curriculum and in the programs of related subjects.
- Insufficient theoretical and methodological treatment of this problem in the training process.
- Poor command of ways, actions and personal resources for achieving resilience.

DISCUSSION

The most recent studies on resilience in Medicine emphasize Positive Psychology as a factor of protection and health, which opens new paths and challenges for professionals, particularly those in mental health. The authors believe that, as the results of the diagnosis show, more attention should be paid to this in the students' training process, by providing them with ways and personal resources that, grounded in Positive Psychology, offer a salutogenic approach of promotion and prevention to the problems these students face both academically and in clinical practice. However, the treatment of this competence with this approach is not deliberately pursued in curricula and study programs.

Although the strategy adopted by the universities of Medical Sciences in Cuba during the COVID-19 pandemic revealed potential for resilience in many students, who played a leading role in health screening and health education in the communities, now that the crisis has been overcome for several years, the present study reveals shortcomings in identifying one's own and others' emotions in adverse situations and in emotional control and management, which call for work on the experiences and cognitive elements related to them.

This demand is a challenge given the subjective and complex nature of people's affective world, which is evident in the students studied through contradictory data: 94% say that in difficult personal situations they solve problems effectively, yet a high percentage, 85.29%, show a lack of knowledge of the possible ways and resources for coping with adverse situations. This contradiction confirms the lack of unity between the affective and the cognitive-instrumental aspects that should be integrated in resilience during its development.

Therefore, planning training actions from the teachers' role requires a new outlook and educational practices different from what is currently happening, given that 70% of the teachers acknowledged their lack of knowledge about the particular features of resilience in medical students and how it is developed. As a result, teaching activities do not address the aspects that are necessary in this regard. However, it is positive for the intervention program to be able to draw on strengths such as the interest and awareness of students and teachers regarding the need to develop this competence for personal growth and professional performance, in response to the high risk of adversity present in the academic and clinical components of the Medicine program.

One challenge in this process concerns the unity of educational actions across the training components, academic, clinical practice, research and outreach, so as to stimulate protective resilience factors through work in cooperative groups, projects and workshops, as well as the use of technology, through innovative experiences that make it possible to model simulated adverse situations drawn from reality and to practice possible coping strategies in each of them.

The initial diagnosis, carried out on the basis of the dimensions and indicators established according to the authors' teaching experience, document analysis and the sources consulted, made it possible to reveal the manifestations of resilience in medical students. It showed little use of phrases related to emotions and feelings, and a lack of knowledge of basic elements and related concepts. Furthermore, the subjects taken during training that are related to the topic (Psychology, Introduction to Clinical Practice, Community Medicine, among others) do not explicitly address resilience, ways of acting in adverse situations or the attitudes these students need to develop.

In addition, the teachers agreed that this is a little-known area for both them and the students, which makes it difficult to master ways and resources for developing resilience. Shortcomings were found from a theoretical and methodological point of view, since it has not been an explicit objective in curricula, programs or the professional profile and has not been given the necessary importance in the training process; therefore, the socio-emotional aspects these students should develop are not clear.

The study has confirmed that there is an understanding of the need to develop resilience competence for the health, well-being and successful performance of students at different educational levels, including university students, students of Medical Sciences and of Medicine, given the rigor of learning

and the high demands of professional practice, in order to cope with situations that carry a risk of emotional imbalance.

Although there are studies on resilience as a competence, its theoretical and methodological foundations have not been soundly systematized from the integrative approach that competencies require.

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Conflict of interest

The authors declare no conflicts of interest.

Author contributions

The authors participated in the design and writing of the article, and in the search for and analysis of the information contained in the bibliography consulted.



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