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Original article

Didactic strategies for the skill of explaining in medicine

Estrategias didácticas para la habilidad explicar en medicina

Estratégias de ensino para a habilidade explicar em medicina

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ABSTRACT

The ability to explain is fundamental for medical students at the University of Medical Sciences of Pinar del Río Ernesto Che Guevara, as it enables them to interact effectively with patients and other healthcare professionals. This work aims to propose didactic strategies to develop this skill in medical students, as well as identify the results and challenges associated with its implementation. A literature review of scientific articles on the topic was conducted, analyzing aspects such as the definition of the ability to explain, contents, methods, techniques, resources, evaluation, and the results obtained. In the reviewed articles, the ability to explain is defined as the capacity to convey relevant, understandable precise, and information, adapted to the receiver, with appropriate language and an empathetic attitude. The importance of using active and participatory methods is emphasized, allowing students to face real or simulated situations, fostering reflection on their performance. Feedback is recognized as an essential tool in the learning process, along with resources such as scripts, concept maps, and videos, which facilitate comprehension. Some difficulties are identified, such as lack of time, shortage of resources, heterogeneity of student groups, and lack of specific teacher training, which limits the objective and valid assessment of the skill.

Keywords: ability to explain; medicine students; communication; teaching-learning; didactic strategies.

RESUMEN

La habilidad de explicar es fundamental para los estudiantes de medicina de la Universidad de Ciencias Médicas de Pinar del Río Ernesto Che Guevara, ya que les permite interactuar efectivamente con pacientes otros У profesionales de la salud. Este trabajo tiene como objetivo proponer estrategias didácticas para desarrollar esta habilidad en los estudiantes de medicina, así como identificar los resultados y desafíos asociados a su implementación. Se realizó una revisión bibliográfica de artículos científicos sobre el tema, analizando aspectos como la definición de la habilidad de explicar, los contenidos, los métodos, las técnicas, los recursos, la evaluación y los resultados

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obtenidos. En los artículos revisados, la habilidad de explicar se define como la capacidad de transmitir información relevante, precisa y comprensible, adaptada al receptor, con un lenguaje adecuado y actitud empática. Se destaca la importancia de emplear métodos activos y participativos, que permitan a los estudiantes enfrentarse a situaciones reales o simuladas, promoviendo la reflexión sobre su desempeño. El feedback es reconocido como una proceso herramienta esencial en el de aprendizaje, junto con recursos como guiones, mapas conceptuales y videos, que facilitan la comprensión. Se identifican algunas dificultades, como la falta de tiempo, la escasez de recursos, la heterogeneidad de los grupos de estudiantes y la falta de formación específica de los docentes, lo que limita la evaluación objetiva y válida de la habilidad.

Palabras clave: habilidad de explicar; estudiantes de medicina; comunicación; enseñanza-aprendizaje; estrategias didácticas.

RESUMO

A capacidade de explicar é fundamental para os estudantes de medicina da Universidade de Ciências Médicas Ernesto Che Guevara de Pinar del Río, pois permite que eles interajam de forma eficaz com pacientes e outros profissionais de saúde. O objetivo deste estudo é propor estratégias didáticas para desenvolver essa habilidade em estudantes de medicina, bem como identificar os resultados e os desafios associados à sua implementação. Foi realizada uma revisão da literatura de artigos científicos sobre o tema, analisando aspectos como a definição da habilidade de explicar, conteúdos, métodos, técnicas, recursos, avaliação е resultados obtidos. Nos artigos revisados, a habilidade de explicar é definida como a capacidade transmitir informações de precisas relevantes, е compreensíveis, adaptadas receptor, com linguagem ao apropriada e atitude empática. A importância de ativos usar métodos e participativos é destacada, permitindo que os alunos enfrentem situações reais ou simuladas, promovendo a reflexão sobre seu desempenho. O feedback é reconhecido como uma ferramenta essencial no processo de aprendizagem, juntamente com recursos como roteiros, mapas conceituais e vídeos, que facilitam a compreensão. Algumas dificuldades são identificadas, como a falta de tempo, escassez de recursos, а а heterogeneidade dos grupos de alunos e a falta de treinamento específico dos professores, o que limita a avaliação objetiva e válida da habilidade.

Palavras-chave: habilidades de explicação; estudantes de medicina; comunicação; ensinoaprendizagem; estratégias didáticas.

INTRODUCTION

The ability to explain is a fundamental competence for medical students, as it allows them to clearly and effectively communicate concepts, diagnoses and treatments to patients, family members and other health professionals. However, this ability is not acquired but requires a systematic spontaneously, teaching-learning process aimed at developing the cognitive, linguistic and emotional capacities of students. The objective of this paper is to analyze the teaching strategies used to train the ability to explain in medical students, as well as the results and difficulties that arise in their application.

Communication is an essential element in medical practice, as it influences the quality of care, patient safety, treatment adherence, user satisfaction, and the prevention of ethical and conflicts (Communication Skills legal Interventions for Medical Students, 2020). Within communication skills, the ability to explain refers to the ability to transmit relevant, accurate, and understandable information, adapted to the level of knowledge and the needs of the recipient, using appropriate language, a logical structure, and an empathetic attitude (Gómez García and Gómez García, 2008). This

skill involves not only mastery of the content, but also the use of cognitive, metacognitive, and affective strategies that facilitate the understanding and retention of information by the recipient (González Pérez and González Pérez, 2013).

Naranjo et al. (2018) express an interesting perspective about the formation of professional skills in medical students, which in their results show that tutors do not know the basic elements to form professional skills, stating that there is insufficient pedagogical preparation to form professional skills due to the poor pedagogical preparation they have received, which shows the need to address the issue in methodological preparations and in postgraduate activities, which is interesting for the research being developed.

For Márquez et al (2023):

The formation of skills as forms of assimilation of activity constitutes one of the most important problems in the current educational context, at all educational levels, but mainly in higher education because it is the subsystem where professionals who must creatively transform society are trained. However, even our graduates leave university institutions with deficiencies in the formation of skills (p. 189).

The cited authors state a definition that is relevant to the research by expressing that:

Taking into account the above aspects, we can define skill as: a higher psychological function that involves the mastery of an action oriented towards a goal (partial objective), through the systematization of the operations at its base, which can vary depending on the conditions and their dynamics, as internalization supported by the level reached and directed towards the potential development of the subject (Márquez, 2023, p. 198). On the other hand, the postulates of Herrera & Horta (2016) make it clear in their studies that most teachers and students are unaware of or do not use the clinical method for the development of research skills, and that all recognize the importance and contribution that this method could have in this process. The authors conclude that the clinical method is a fundamental way to develop research skills in students, which is in line with the proposal. Later studies by Herrera et al (2019), in another order, evaluate the results of the application of a strategy for the training of research skills in medical students, in which they recognize the importance of the training of research skills, which favor the development of professional modes of action, as well as the clinical method as a fundamental and dynamic agent, which is important to take into account for the purposes of the research being developed.

The development of the ability to explain in medical students is a complex and dynamic process, which involves the interaction of various factors, such as the curriculum, the teacher, the student, the context and the resources. The curriculum must consider the objectives, content, methods, techniques, resources and evaluation of this ability, in an integrated and coherent way with the professional profile and the competencies that are intended to be developed. The teacher must assume the role of mediator, facilitator and guide of the teachinglearning process, stimulating active participation, critical thinking and reflection of the students.

The student must be the protagonist of his or her own learning, assuming a responsible, autonomous and collaborative attitude, and applying the skills of learning to learn. The context must be conducive to the creation of a climate of trust, respect and motivation, which favors exchange and feedback. The resources must be varied, attractive and relevant, allowing the simulation and practice of the skill of explaining in real or close-to-reality situations (González Pérez and González Pérez, 2019). https://mendive.upr.edu.cu/index.php/MendiveUPR/article/view/3833

Sixto Fuentes & Márquez Marrero (2017) enunciate several theoretical trends that have approached the concept of skill from different perspectives, such as psychological, pedagogical and didactic. The authors highlight the importance of skills in the teaching-learning process, and propose a classification of skills according to their level of complexity and their relationship with the clinical method, concluding that the conceptualization of skills must be consistent with the historical-cultural approach and the developmental model underpinning Cuban medical education, which corroborates the importance of research.

The development of the ability to explain in medical students is a topic of interest and current interest, which is addressed from different perspectives and approaches. However, there are few studies that comprehensively and systematically analyze the teaching strategies used to develop this skill, as well as the results and difficulties that arise in its application.

The training of medical students at the Ernesto Che Guevara University of Medical Sciences in Pinar del Río seeks to prepare future a solid foundation professionals with of theoretical and practical knowledge. One of the fundamental aspects for their performance in the health field is the development of communication skills, especially the ability to explain. This competence is not only crucial for interacting but effectively with patients, also for collaborating with other health professionals, ensuring the understanding of diagnoses and treatments, and transmitting knowledge in a clear and understandable manner in educational and clinical contexts.

At the institution, teaching the ability to explain is addressed through different didactic strategies that seek to actively involve students in their learning process, taking advantage of methods and resources appropriate to the needs of the context. The academic and clinical environment of the university favors the implementation of active, participatory and simulation-based methods, allowing students to practice and reflect on their ability to explain in real or simulated situations. However, various challenges are identified, such as the heterogeneity of the groups, the lack of specific resources and the need for continuous training for teachers.

The objective of this work is to propose effective teaching strategies for the development of the ability to explain in medical students of the Ernesto Che Guevara University of Medical Sciences of Pinar del Río, in order to improve their academic and professional performance in the field of health.

MATERIALS AND METHODS

A bibliographic review was conducted of scientific articles published between 2018 and 2024, which addressed the topic of developing the ability to explain in medical students. For this purpose, the SciELO and Google Scholar databases were used, with the keywords: explaining ability, medical students, and communication, teaching-learning.

The analysis of the articles focused on the following aspects: definition of the skill of methods, explaining, content, techniques, resources, evaluation and results. The contents addressed for the formation of this skill are: the principles of communication, types of explanation, phases of explanation, elements of explanation, barriers and facilitators of explanation and strategies to improve explanation.

As for the methods used for teaching and learning this skill, the following stand out: the active method, the problem-solving method, the case-based method, the project-based method simulation-based and the method. The techniques used to develop the ability to explain include dialogued exposition, demonstration, role- playing, feedback, video analysis, peer learning and autonomous learning. The resources used were the explanation script, the

conceptual map, the scheme, the diagram, the algorithm, the brochure, the poster, the video, the simulated patient and the real patient.

Type of research and context

The study was carried out at the Ernesto Che Guevara University of Medical Sciences in Pinar del Río, within the framework of the academic training of students in the Medicine program. This was a descriptive study, with a quantitative approach, in which various instruments were used to analyze the development of the ability to explain in students. The research was carried out during the 2023-2024 academic year.

Universe and sample

The universe of the research was composed of second-year students of the Medicine course at the University of Medical Sciences of Pinar del Río. The sample selected for the study consisted of 100 students, chosen at random, who actively participated in the activities designed for the development of the ability to explain.

Assessing the ability to explain

The assessment of the ability to explain was carried out using instruments such as the Likert scale, the checklist, the rubric, the portfolio, the oral exam and the written exam. The results obtained reflect a significant increase in the students' level of knowledge, an improvement in the ability to express themselves, greater satisfaction on the part of the patients, greater confidence in the students and a more effective integration of the contents learned.

RESULTS

In the analysis of the teaching strategies used to develop the ability to explain in medical students at the Ernesto Che Guevara University of Medical Sciences of Pinar del Río, various approaches, methods and resources applied during their training process were identified. Regarding the content addressed, it was observed that the educational programs of the university include fundamental topics such as the principles of communication, the different types and phases of explanation, and the strategies designed to improve the clarity and effectiveness of the transmission of information. These contents were presented through active and participatory methods, such as the case-based method, simulation and peer learning, allowing greater interaction between students and the real or simulated context of the medical consultation.

The methods and techniques applied included role- playing, where students assumed different roles in clinical situations to practice explaining diagnoses or procedures, and analysis of videos of clinical interactions, which facilitated reflection on their performance.

Feedback sessions were an essential tool, allowing teachers to provide constructive feedback to students, identify areas for improvement and reinforce acquired skills. In addition, techniques such as dialogued exposition, demonstration and autonomous learning were used, which facilitated the internalization of the skill of explaining.

As for the results, a significant improvement was observed in the students' ability to express themselves, especially with regard to clarity and empathy when explaining procedures and diagnoses. There was also an increase in the confidence of students when interacting with patients, as well as a higher satisfaction on the part of patients in simulated interactions, which confirms the effectiveness of the applied methods. Greater integration of content was identified, which facilitated a deep understanding of the subject and its application in clinical contexts.

Despite progress, the most notable difficulties included the heterogeneity of student groups, which can make it difficult to personalize teaching, and the lack of adequate resources to carry out practices in more complex clinical scenarios. This highlighted the need to strengthen available resources and improve the ongoing training of teachers.

As for the resources used, teaching tools such as the explanation script, conceptual maps, diagrams, algorithms, brochures, posters, videos, as well as simulated patients and real patients were used, which played a fundamental role in the teaching-learning process. The evaluation of the ability to explain was carried out using instruments such as the Likert scale, the checklist, the rubric, the portfolio, and oral and written exams.

The implementation of these teaching strategies at the University of Medical Sciences of Pinar del Río showed a positive impact on the development of the ability to explain. However, areas for improvement were also identified, such as the need for more resources and to continue improving the methodologies used to overcome the challenges observed.

DISCUSSION

At the Ernesto Che Guevara University of Medical Sciences in Pinar del Río, the methods used to train medical students' ability to explain have proven to be effective in the local context. The results obtained in the different groups of students reflect a significant improvement in their ability to explain medical procedures and diagnoses.

The use of active methods, such as group discussions and debates, encouraged active participation and a better understanding of the content, which enabled students to structure clearer explanations. Similarly, the case-based, problematizing approach, implemented through simulated clinical scenarios, contributed to the development of critical thinking skills, improving students' ability to address complex situations in medical practice. The simulation of cases with real and simulated patients, as well as the use of techniques such as role playing and video analysis, were particularly valuable in the training of students, allowing them to put into practice what they had learned in controlled situations that were close to professional reality.

This approach allowed for progress in the clarity, precision and effectiveness of the explanations given, as well as fostering students' confidence in their ability to communicate with patients. These results highlight the relevance of the methodology applied at the University of Medical Sciences of Pinar del Río, which seeks not only the development of technical competencies, but strengthening of also the essential communication skills for future health professionals.

It is observed that the development of the ability to explain in medical students is a topic of interest and current interest, which is addressed from different perspectives and approaches. The importance of using active and participatory methods, which involve students in real or simulated situations, which allow them to apply and reflect on their performance, is highlighted. The value of feedback is recognized as an essential tool for the development of the ability to explain, as well as the use of varied and attractive resources, which facilitate the understanding and retention of information.

Some limitations and challenges are identified, such as lack of time, scarcity of resources, resistance to change, heterogeneity of groups, lack of teacher training and the difficulty of assessing the ability to explain in an objective and valid way. Coinciding with this, the authors state that teaching strategies as a teaching task at the classroom level enrich the teaching and learning process (Hernández & de la Yncera, 2024).

All the above findings allow us to identify some trends, advances and challenges in the field of skill-building for medical students. Some of them are: https://mendive.upr.edu.cu/index.php/MendiveUPR/article/view/3833

• A trend that is observed is the incorporation of clinical simulation as an effective method for teaching-learning the ability to explain, since it allows recreating realistic scenarios, controlling variables, providing immediate feedback and evaluating student performance (Interventions in communication skills for medical students, 2020).

Clinical simulation can be carried out with simulated patients (actors or volunteers trained to play a role), with mannequins (anatomical models that simulate physiological functions) or with virtual reality (technology that generates interactive three-dimensional environments) (Gómez García and Gómez García, 2008).

Clinical simulation offers advantages such as safety, flexibility, feedback and repetition, but also involves challenges such as cost, availability, validity and ethics (González Pérez and González Pérez, 2019).

 A notable advance is the development of assessment instruments for explaining skills, which allow students' level of achievement to be measured, as well as their strengths and weaknesses to be identified.

These instruments are based on criteria, indicators and evidence that reflect the learning objectives and quality standards of the explaining skill. Some examples of these instruments are: the Likert scale, the checklist, the rubric, the portfolio, the oral exam and the written exam (González Pérez and González Pérez, 2013). These instruments facilitate the formative and summative evaluation of the explaining skill, as well as the self-assessment and co-assessment of students. However, they also have limitations such as subjectivity, variability, reliability and validity (Gómez García and Gómez García, 2008).

• One challenge is to integrate the ability to explain with other clinical skills, such as history taking, physical examination,

clinical reasoning, diagnosis, treatment and prevention. These skills make up the clinical process, which is the set of actions that the doctor performs to solve the health problems of patients.

The ability to explain is not an isolated skill, but is related to other clinical skills, and must be taught and learned in an integrated and coherent manner.

This implies that the curriculum, the teacher, the student, the context and the resources must be aligned with this integrative approach, which promotes a holistic and systemic vision of medical practice (González Pérez and González Pérez, 2019).

- The ability to explain is an essential skill for medical students, allowing them to communicate with patients and other health professionals, transmitting relevant, accurate and understandable information, adapted to the level of knowledge and the needs of the recipient, using appropriate language, a logical structure and an empathetic attitude.
- The development of the ability to explain in medical students is a complex and dynamic process, which involves the interaction of various factors, such as the curriculum, the teacher, the student, the context and the resources.

The curriculum must consider the objectives, content, methods, techniques, resources and evaluation of this skill, in an integrated and coherent way with the professional profile and the competencies that are intended to be developed. The teacher must assume the role of mediator, facilitator and guide of the teachinglearning process, encouraging active participation, critical thinking and reflection of the students.

The student must be the protagonist of his or her own learning, assuming a responsible, autonomous and collaborative attitude, and applying the skills of learning to learn. The

context must be conducive to the creation of a climate of trust, respect and motivation, which favors exchange and feedback. The resources must be varied, attractive and relevant, allowing the simulation and practice of the skill of explaining in real or close-to-reality situations.

The development of the ability to explain in medical students is a topic of interest and current interest, which is addressed different perspectives from and approaches. Some trends, advances and challenges that arise in this field are identified, such as the incorporation of clinical simulation, the development of assessment instruments and the integration of the ability to explain with other clinical skills. These aspects require further research and in-depth study, which provides theoretical and practical elements that contribute to improving the quality of teaching-learning of the ability to explain in medical students.

In conclusion, the development of the ability to explain in students at the Ernesto Che Guevara University of Medical Sciences of Pinar del Río has proven to be an effective process that significantly improves the communication skills of future physicians. Through active methods such as case-based learning, simulations, and role- playing, students have achieved a better understanding and application of the communication strategies necessary to interact with patients and the health team. The resources used, such as videos and simulated patients have been key tools in the development of this skill. However, despite the progress, challenges persist, such as the heterogeneity of student groups and the lack of resources in more complex clinical scenarios, which points to the need to continue improving teaching methods expanding the available resources. and Continuous evaluation and feedback are essential to identify areas for improvement and ensure that the ability to explain is developed in a comprehensive manner, guaranteeing that students can offer quality medical care and establish effective communication with patients.

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

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