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Communication skills in value-based medical training. First-semester students' perceptions and their impact on the doctor-patient relationship.

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Abstract

Introduction: Value-based medicine (VBM) prioritizes outcomes that impact patients' lives and demands highly precise clinical communication. These skills are crucial for adherence, shared decision-making, and system efficiency. Despite their importance, they are often neglected in initial training. This study evaluates first-semester medical students' self-perception of their communication skills to identify strengths and areas for improvement necessary for humanized and effective medical practice.

Materials and methods: This was an observational, prospective, cross-sectional study conducted at the University of Guayaquil (July–October 2025). A 15-item questionnaire (Likert scale) was administered to a probabilistic sample of 130 medical students (Cronbach's alpha: 0.83), and five dimensions of clinical communication were assessed. To mitigate bias, expert validation and double data entry were used. Statistical analysis included weighted averages and frequencies in SPSS v.26.0, prioritizing internal consistency and methodological rigor.

Results: A total of 130 people were surveyed. The analysis revealed high perceived performance in terms of message adaptation (4.52), open-mindedness (4.38), and active listening (4.36). However, critical weaknesses were identified in deep listening skills, specifically in response planning during listening (3.56), handling difficult interlocutors (3.78), and objectivity regarding others' opinions (3.72). Most students recognize the importance of communication skills but report deficiencies in their training. The lowest scores were related to the systematic practice of active listening and empathy in clinical settings.

Conclusions: Students have a strong self-perception of their communicative adaptability, but they exhibit critical deficiencies in deep listening and in managing complex situations. Under the value-based medicine model, these gaps limit the achievement of optimal results. It is imperative to integrate communicative competencies as technical and transversal skills in the curriculum. Strengthening active listening and emotional management from the earliest stages will ensure that professionals are capable of leading a more effective, sustainable, and humane healthcare system.

Keywords: Medical communication; interpersonal skills; medical education; empathy; medical students.

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Introduction

Value-based medicine (VBM) is characterized by a paradigm shift in which success is no longer measured by the quantity of services provided but by the outcomes that truly impact patients' lives. In this model, clinical efficiency is not limited to the accuracy of a diagnosis or the success of a surgery but is defined by the system's ability to restore functionality and well-being to the individual at the lowest possible cost [1].

However, for this value equation to be effective, there is an intangible but crucial component: communication. Patient-centered outcomes cannot be achieved without first understanding patients' expectations, fears, and social context. This is where communication skills cease to be a "friendly complement" and become a highly precise clinical tool [2].

The integration of communication skills into MBV is based on three critical pillars: the definition of outcomes, where "value" is subjective. Only through active and empathetic listening can the physician identify which outcome is a priority for the patient (for example, prioritizing mobility over the complete absence of pain). The second pillar is adherence and self-management, in which a patient who understands their condition through clear communication shows higher treatment adherence, reducing complications, hospital readmissions, and, therefore, unnecessary costs. The third pillar is shared decision-making, in which the MBV requires the patient to be an active participant. This requires the physician to master verbal and nonverbal communication to convey complex information clearly, enabling decisions aligned with the patient's values [3].

Several studies have shown that effective clinical communication improves treatment adherence, reduces medical errors, and increases patient and professional satisfaction [3, 4]. However, these skills are not always addressed in sufficient depth in medical curricula, especially in the initial stages of training [5].

This study stems from the need to promote systematic instruction in clinical communication from the beginning of medical school. To this end, a formative assessment is proposed based on first-semester students' self-perceptions, aimed at identifying strengths and areas for improvement in their communication skills.

Materials and methods

Studio design

This is an observational, prospective study. The design is cross-sectional.

Scenery

This study was conducted at the Faculty of Medical Sciences of the University of Guayaquil. The observation period was from July 1, 2025, to October 30, 2025.

Participants

First-semester medical students from the institution were included.

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Variables

A structured questionnaire consisting of 15 statements related to aspects of verbal and nonverbal communication, active listening, empathy, message appropriateness, and emotional control was administered [6].

Data sources/measurements

The data source was direct. Each item on the questionnaire was evaluated using a 5-point Likert scale (1 = I do not identify, 5 = I fully identify). The instrument was designed to measure five dimensions: active listening, empathy, verbal expression, nonverbal expression, and establishing a therapeutic relationship. The questionnaire was adapted from existing models in the literature (Silverman and Makoul) and validated through expert review (content validation). The internal consistency of the instrument was adequate, with a Cronbach's alpha coefficient of 0.83. The instrument was self-administered in a printed format during an academic session, ensuring participant confidentiality.

Biases

Observation and selection bias were prevented by applying specific participant selection criteria. The principal investigator consistently managed the data according to the research protocol's guidelines and records to avoid potential interviewer, information, and recall biases. Data collectors were trained on the forms. Two researchers independently analyzed each record twice, and variables were entered into the database after verifying their accuracy.

Study size

The sample was probabilistic. In 2023, 659 students were enrolled in the medical program at the University of Guayaquil. With an expected frequency of 11.9%, a 5% confidence interval, and a 95% confidence level, the sample size was 129 cases. Epi Info Version 7.2.7 (CDC, Atlanta, USA; released March 9, 2025) was used.

Quantitative variables

The results are presented as frequencies and percentages. The variables collected on a scale were not converted into categorical variables.

Statistical analysis

The collected data were organized into absolute and relative frequencies. Weighted averages were calculated for each item and dimension to identify the study group's communicative strengths and weaknesses. The statistical package used was SPSS Statistics for Windows, version 26.0. Armonk, NY: IBM Corp.

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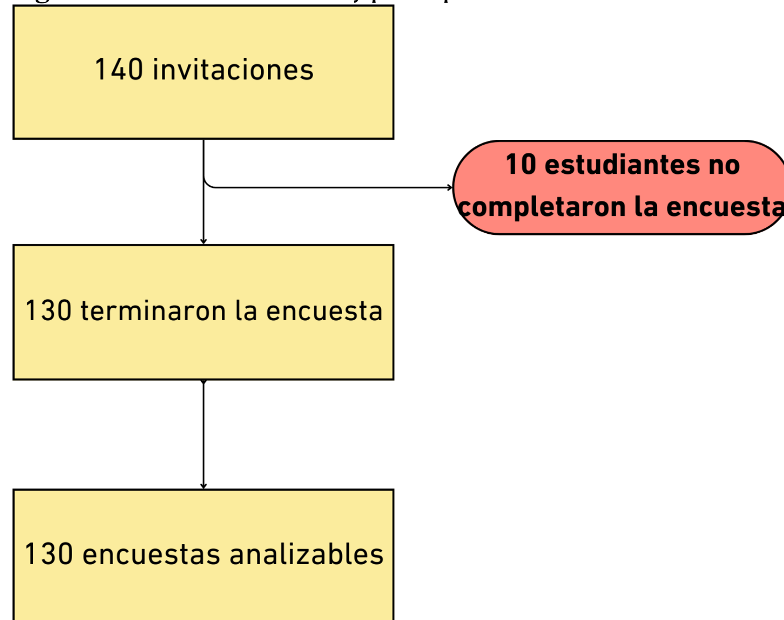
Results

Participants

A total of 130 students participated in the study (Figure 1).

Figure 1. Flowchart of the study participants.



Description of skills

The competencies with the highest average scores were tailoring the message to the listener (4.52), maintaining an open mind toward different opinions (4.38), and actively listening without interruptions (4.36). Other aspects with high scores included preparation before speaking (4.29) and consistency between verbal and body language (4.21). In contrast, the skills with the lowest average scores corresponded to the ability to avoid planning a response while listening (3.56), managing difficult listeners (3.78), and valuing other opinions fairly (3.72) (Table 1).

Table 1. Communication skills

Item	Description	Average	%
3	Adapting the message to the listener	4.52	90.4%
1	Open-mindedness and willingness to change your mind	4.38	87.6%
4	Listen without interrupting.	4.36	87.2%
2	Preparation before communicating	4.29	85.8%
13	Consistency between verbal and body language	4.21	84.2%
15	Stay calm when speaking, even when you are upset.	4.18	83.6%
12	Intervene only with valuable contributions	4.15	83.0%
14	Understand other people's body language	4.08	81.6%
7	Confidence in speaking and clarity	4.03	80.6%
8	Clarity in expressing ideas	4.02	80.4%
9	Concentration while listening	4.02	80.4%
5	Appropriate eye contact	3.99	79.8%
6	Safety when dealing with difficult people	3.78	75.6%
1 1	Do not consider your own opinion to be the most important thing.	3.72	74.4%

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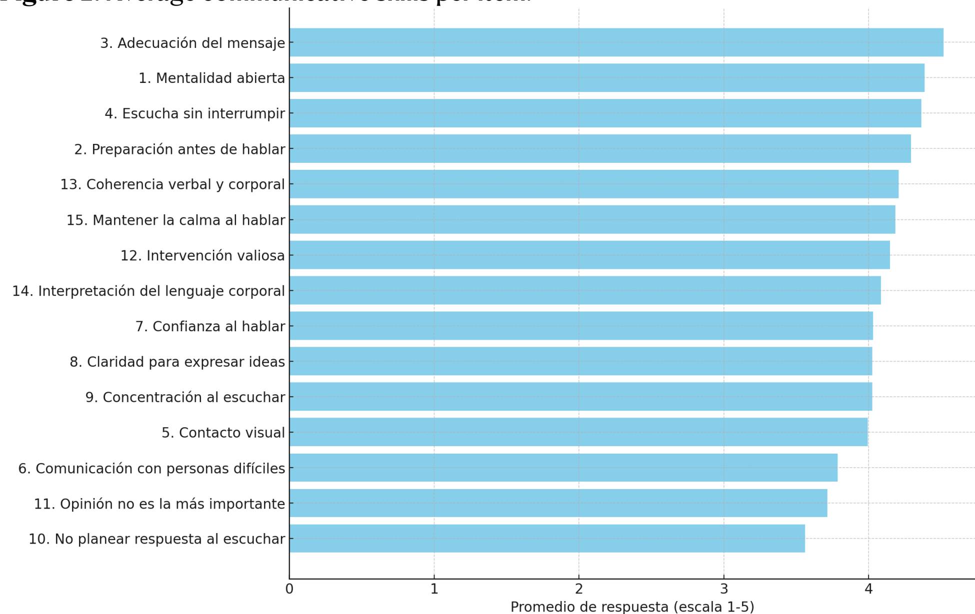
10	Do not plan your response while the other person is speaking.	3.56	71.2%

The highest-scoring results in the survey reveal a competency profile that aligns directly with the goals of value-based medicine. These items can be grouped into three key dimensions that ensure that healthcare is effective and has a low emotional and financial cost (Figure 2).

Figure 2. Average communicative skills per item.



Discussion

Key findings

The findings of this study, derived from a sample of 130 medical students, reveal a profile of communicative competencies with a marked inclination toward adaptability and relational openness, which are fundamental elements within the framework of value-based medicine. The participants demonstrated high perceived performance in critical dimensions, such as the appropriateness of the message to the interlocutor (4.52) and the coherence between verbal and body language (4.21), suggesting a solid foundation for establishing the necessary trust in the doctor–patient relationship. This communicative attunement is the primary vehicle for identifying the "outcomes that matter to the patient," the core of VBM. Similarly, the high scores for uninterrupted listening (4.36) and open-mindedness (4.38) indicate a favorable disposition toward shared decision-making. However, the results also revealed a significant cognitive gap: the lowest score was recorded for the ability to avoid planning a response while listening (3.56). This deficiency in "deep listening", added to the difficulties reported in handling difficult interlocutors (3.78), suggests that, although the student values communication, he still faces challenges in maintaining objectivity and full presence in high-pressure or conflict clinical scenarios.

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Interpretations

The findings show a generally positive view of communication skills among first-semester students, which is consistent with the findings of earlier studies emphasizing the importance of these abilities in the doctor–patient relationship[7, 8]. In particular, the high valuation of active listening and message adaptation indicates an initial awareness of effective communication as a clinical tool.

However, lower scores in areas such as communicative planning during listening and handling difficult situations reveal common limitations early in training. These weaknesses match the findings of Ha and Longnecker [4], who emphasize that fully listening without anticipating responses is a skill that requires targeted training. The literature indicates that these skills can be improved through active methods, such as simulations with standardized patients, reflective feedback, and clinical case analysis [5, 6, 9]. Furthermore, the work of Neumann et al. [7] highlights the relationship between empathy and communication as protective factors against emotional burnout during medical training.

Interpreting these findings through the lens of value-based medicine suggests that while students have a solid ethical foundation, they still face significant barriers to optimizing health outcomes. A high message adaptation score (4.52) indicates strong health literacy, which is crucial for reducing medication errors and unnecessary tests caused by misunderstandings. However, the weakness observed in response planning during listening (3.56) risks undermining value creation: fragmented listening prevents the capture of patient-reported outcome measures (PROMs), such as symptoms or functional limitations that the patient considers priorities. In Porter's model, value is diminished when physicians assume treatment goals without proper validation. Consequently, difficulties in managing challenging interlocutors (3.78) and self-referentiality in opinions (3.72) may lead to fragmented, less coordinated care, increasing emotional costs for the patient and operational costs for the institution by failing to establish a fully effective therapeutic alliance.

Practical implications

The practical implications of these findings highlight the urgent need to shift from theoretical communication instruction to high-quality skills training. Since the lowest score was for the ability to "not plan one's response while the other person is speaking" (3.56), the curriculum should incorporate mindfulness and generative listening techniques into clinical rotations. It is not enough for students to know "what to say" (where they scored high, 4.52); the challenge for educators is teaching "how to be present". To implement value-based medicine effectively, medical schools should incorporate simulations with standardized patients who portray "difficult interlocutors," enabling students to make mistakes and learn from them in a safe environment before facing real healthcare pressures. Additionally, assessing these skills should not be a one-time event but a continuous process through OSCEs (objective structured clinical examinations), where premature interruption is penalized and eliciting patient preferences is rewarded. Only through ongoing training in these "areas of weakness" can future physicians be equipped to reduce diagnostic waste and maximize therapeutic value in every interaction.

Contrast with the scientific literature

When these results are compared with previous scientific evidence, a common trend emerges that confirms a gap between self-perceived communication skills and actual technical

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performance. Studies indicate that although medical students score highly on theoretical empathy and message appropriateness—similar to the 4.52 obtained in this study—they face significant challenges in "deep listening" and handling highly emotional situations (difficult interlocutors, 3.78). Classic research, such as Makoul's (2001) [3] and contemporary models based on the Kalamazoo consensus, emphasize that early patient interruption ("failure to plan the response," which scored low here at 3.56) typically occurs within 20 seconds of the beginning of the consultation, compromising the collection of key data for value-based medicine.

Furthermore, the high rating of verbal and nonverbal coherence (4.21) in this study aligns with the findings of Silverman et al. (2016) in the Calgary–Cambridge model [1], which establishes that nonverbal communication is the strongest predictor of patient satisfaction and a reduction in malpractice litigation. However, authors such as Epstein and Gramling (2013) [10] caution that the "open-mindedness" reported by students tends to decline as they progress to clinical years because of the "hidden curriculum" and empathic exhaustion. Therefore, the results from this Ecuadorian university support the argument that training in transversal skills must be continuous because a high initial self-assessment does not ensure sustained competence given the complexity of the real healthcare system.

Limitations

Despite the importance of these findings, this research has limitations that should be considered when the results are interpreted. First, the methodology depends solely on students' self-perceptions, which may introduce social desirability bias—the tendency of participants to appear more competent than they truly are. This issue is common in medical education, where there is a known gap between what students believe they know and their actual performance under clinical stress. Second, the cross-sectional, single-center design limits how well the results can be applied to other academic or geographic settings and does not allow for tracking how these skills develop over time or after intensive clinical rotations. Finally, the sample size (n=130), while representative of the institution, might not reflect the variability in experience among students at different training levels. Future research should incorporate hybrid methods, such as direct observation assessments (OSCEs) or video recordings, to triangulate self-perception with actual clinical competence, aligning with more objective standards in value-based medicine.

Future research

The results provide a clear roadmap for future research focused on establishing value-based medicine from the training stage forward. A key research area involves conducting longitudinal studies that follow the same students from their early years through their clinical rotations. This helps researchers identify the exact point in the curriculum when skills such as "deep listening" or "objectivity in the face of others' opinions" begin to diminish. Additionally, it is essential to develop studies that link self-perceived communication skills with objective health outcomes—such as patient satisfaction, treatment adherence, and readmission rates—to measure the economic and clinical effects of poor communication within the healthcare system. Moreover, this presents an opportunity to examine the effectiveness of disruptive teaching methods, such as using artificial intelligence in virtual patient simulations or mindfulness-based coaching programs, to determine whether these tools can reduce students' tendency to prematurely "plan responses". Finally, future studies should investigate how

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interculturality affects medical communication, especially in diverse settings such as Ecuador, to understand how message adaptation affects equitable access to healthcare and the perceived value of healthcare among vulnerable populations.

Conclusion

This study revealed that medical students have a strong conceptual foundation and a positive self-view of their adaptability and communication skills; however, significant gaps remain in deep listening and managing complex clinical situations. In the context of value-based medicine, these gaps hinder achieving the best health outcomes because surface-level communication prevents patients from understanding their true needs and reduces system efficiency. Therefore, recognizing the importance of the doctor–patient relationship is not enough; it is crucial to develop an educational model that teaches communication skills as technical, measurable, and cross-disciplinary clinical competencies.

Abbreviations
MBV: value-based medicine.
OSCE: Objective Structured Clinical Examination.

Supplementary information
The supplementary materials have not been provided.

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Not declared.

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Martha Verónica Placencia-Ibadango: Conceptualization, data curation, research, methodology, visualization, original draft writing.
Ramón Miguel Vargas-Vera: Conceptualization, data curation, research, project management, and writing of the original draft.
Silvia Maribel Placencia-Ibadango: Conceptualization, formal analysis, software, validation, visualization, writing–review and editing.
Carmen Elizabeth Lucero Novillo: Conceptualization, data curation, research, project management, and writing of the original draft.
Kalid Stefano Vargas-Silva: Conceptualization, data curation, research, project management, and writing of the original draft.
All the authors read and approved the final version of the manuscript.

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The study was approved by the Ethics Committee of the Faculty of Medicine of the University of Guayaquil, Ecuador.

Consent for publication
This does not apply when specific patient images, radiographs, or photographs are not published.

Conflicts of interest
The authors declare that they have no conflicts of interest.

Use of generative AI
The authors declare that they used generative AI responsibly in the “Discussion” section, without replacing the authors’ critical thinking, expertise, and judgment. AI was used under supervision and control to develop the discussion section. The use of the AI tool maintains the privacy and confidentiality of data and contributions, including published and unpublished manuscripts, as well as any personally identifiable information. The journal's policies, which permit the use of generative AI only in the introduction and discussion sections, have been followed. Only limited rights are granted to the AI to provide a service. The accuracy, integrity, and fairness of all AI-generated outputs were carefully reviewed and verified to ensure that the manuscript reflects an authentic and original contribution.

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