ORIGINAL ARTICLE

Preparation for admission to the medical career: student satisfaction

Preparación para el ingreso a la carrera de medicina: satisfacción de los estudiantes

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Abstract

Objective. To determine the satisfaction of first-level students with their preparation prior to entering the Medicine career at the Technical University of Manabí. **Materials and methods**. A cross-sectional descriptive study was carried out. A questionnaire validated by expert criteria, with options questions and an open question, was applied to 111 students who were studying the first level of the Medicine career during the period October 2017 to February 2018 and thus know how they valued their previous preparation. at the beginning of their university studies and the leveling semester. In addition, the route of entry and the behavior of failure in that period in the different subjects were analyzed, data that were summarized by using absolute numbers and percentages. **Results**. 44.1% of the students were male and 62 (55.9%) female, of which the average age was 18 years, 84.8% took entrance exams to access the race. Most of the students evaluated their previous preparation as satisfactory, and more than half said they were partially satisfied with their expectations in the preparation during the leveling semester. The contents of Anatomy were the ones that the students expressed the most should have been reinforced in the leveling. **Conclusion**. The preparation received by the students, prior to admission, according to the criteria of a majority, turned out to be satisfactory. The leveling semester partially met the expectations of the students.

Keywords: school performance, exam performance, school results, medical students (Source: DeCS BIREME).

Resumen

Objetivo. Determinar la satisfacción de los estudiantes de primer nivel con su preparación previa al ingreso a la carrera de Medicina de la Universidad Técnica de Manabí. **Materiales y métodos**. Se realizó un estudio descriptivo transversal. Se aplicó un cuestionario validado por criterio de expertos, con preguntas de opciones y una pregunta abierta, a 111 estudiantes que durante el periodo octubre 2017 a febrero 2018 estaban cursando el primer nivel de la carrera de Medicina y así conocer cómo valoraron su preparación previa al inicio de sus estudios universitarios y del semestre de nivelación. Se analizó además la vía de ingreso y el comportamiento de la reprobación en ese periodo en las diferentes las materias, datos que se resumieron mediante la utilización de números absolutos y porcentajes. **Resultados**. Resultó un predominio de los estudiantes del sexo femenino con 62(55,9 %), de los cuales la edad promedio fue de 18 años, un 84,8% rindieron pruebas de ingreso para acceder a la carrera. La mayoría de los estudiantes evaluaron como satisfactoria su preparación previa, y más de la mitad dijo estar parcialmente satisfecho respecto a sus expectativas en la preparación durante el semestre de nivelación. Los contenidos de Anatomía resultaron los que más manifestaron los estudiantes debían haberse reforzado en la nivelación. **Conclusión**. La preparación recibida por los estudiantes, previo al ingreso, según el criterio de una mayoría resultó ser satisfactoria. El semestre de nivelación cumplió parcialmente las expectativas de los estudiantes.

Palabras clave: rendimiento escolar, rendimiento en los exámenes, resultados escolares, estudiantes de medicina (Fuente: DeCS BIREME).

Introducción

Low academic performance and high repetition rates among students is a matter of concern for teachers and authorities in different university educational centers. According to various authors, academic performance is the result of learning arising from the didactic activity of the teacher and produced in the student[1].

On the other hand, repetition is understood as the action of repeatedly taking an academic activity, either due to the student's poor performance or due to reasons outside the academic realm, which in most cases causes academic delay or setback[2].

It has been recognized that these phenomena are more pronounced in the early periods or levels of the degree programs, which can be attributed to various factors, but in many cases and according to many researchers, it could be related to insufficient prior preparation before entering the university[3].

Taking into account these factors, many higher education institutions and responsible departments in different countries have implemented preparatory or leveling programs with the main objective of strengthening and improving the basic knowledge of their new students and providing tools for this new profile of students to successfully pursue their degree[4].

These programs also allow the identification of students with possible academic risk and taking corrective measures such as reinforcement, psycho-pedagogical support, and study techniques that can reduce the percentages of failure and improve the retention of the program[5].

In Ecuador, access to public higher education is carried out through the National System of Leveling and Admission. The system has three components: first, the application of the "national higher education exam," whose score allows access or not to a slot, second, the assignment to the degree program and with it the possibility of taking leveling courses or, in case of passing an exemption exam, promoting to the first level, and third, the approval of leveling and promotion to the first level of the degree program[6].

Regarding the leveling semester, several questions arise, first about the content that should be included, the starting point and how far to go, the type of teaching to be applied, and whether the unique curricular proposal per area proposed by SENESCYT is appropriate, viable, and sustainable[7].

In our university, the leveling semester is coordinated by the Center for Promotion and Support for Entry (CPAI)[8], whose mission is "to promote, strengthen, and develop technical mechanisms that contribute to the improvement of the academic level of high school students that allow their entry to the University following the guidelines of the National System of Leveling and Admission."

Most students successfully complete the leveling semester. However, in the Medicine degree program, phenomena such as repetition, failure, and low academic performance have been manifesting, especially during the first academic levels[9]. Therefore, we are interested in exploratorily determining the satisfaction of first-level students with their previous preparation before entering the Medicine degree program, which would serve us to orient ourselves towards where to direct actions for improvement or where to search for new useful and necessary information through future research, which could be replicated in other higher education institutions.

Materials and methods

Study Design

A descriptive cross-sectional study was conducted. Theoretical methods, including analysis-synthesis, inductive-deductive, and a systemic approach, were used. Empirical methods such as documentary analysis and a survey in the form of a questionnaire were used with the students. Statistical mathematical methods were also used to analyze the absolute and relative values.

Study population

The population consisted of 119 students enrolled in the first level of the degree program during the period of October 2017 to February 2018.

Sample and sampling

The survey was sent to all students on the enrollment list via institutional email, obtaining a high response rate with a total of 114, of which 111 were valid due to meeting the criterion of correctly completing all the questions, thus representing a probabilistic sample.

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Variables

The variables under study were age, sex, evaluation of previous preparation before starting university studies, and evaluation of the training received in the career-leveling semester. As a selection criterion, only the completed surveys with all questions answered were considered.

In addition, data on the students' failure rates in the subjects of the first semester were analyzed based on reports from the university's Academic Management System.

Procedures

A questionnaire was designed by the authors and four teachers with years of experience and knowledge on the topic, taking into account the research objectives. A brainstorming session was conducted to form the instrument, which was finally subjected to the evaluation of four independent experts, resulting in corrections that were considered in the final document.

The questionnaire was applied using the Google Forms tool, which allows the construction of various question formats. In addition to general data (age and sex), three questions with several response options were asked to determine how students evaluated their previous preparation before starting university studies, and an open-ended question was asked about their personal evaluation of the contents received in the leveling semester. The link to the questionnaire was shared with the students via email, with the freedom to answer or not.

Data on students' failure rates in the first semester were obtained from reports from the university's Academic Management System.

Data analysis

The applied tool generated a data matrix in Excel format, from which the results were tabulated. The tool generated graphics that were also used. The Excel program from Office was used for tabulation and data processing, using absolute frequencies and percentages, and information was summarized in graphs for presentation.

Ethical aspects

To comply with ethical aspects of studies conducted on humans, this research was approved by the Bioethics Committee of the Faculty of Health Sciences of the Technical University of Manabí, as part of the project "Study on Academic Efficiency and Quality of the Teaching and Learning Process in the Faculty of Health Sciences," with code C1-2018-FCS0023.C1. Before sharing the survey link with the students, the purpose of the research was explained, as well as that their data and responses would be used only for research purposes, and that their participation was completely voluntary and would have no implications on their educational process.

Results

Of the surveyed students, 49 (44.1%) were male and 62 (55.9%) were female, with an average age of 18 years.

Regarding their admission pathway, 95 of these students, representing 84.8%, entered the program based on their results on the admission test. The remaining students entered the program through other pathways, with 4.5% transferring from another university, 3.6% as a second career choice, and only 2 students (1.8%) switching majors within the same institution. Additionally, 4.5% entered through other unspecified pathways.
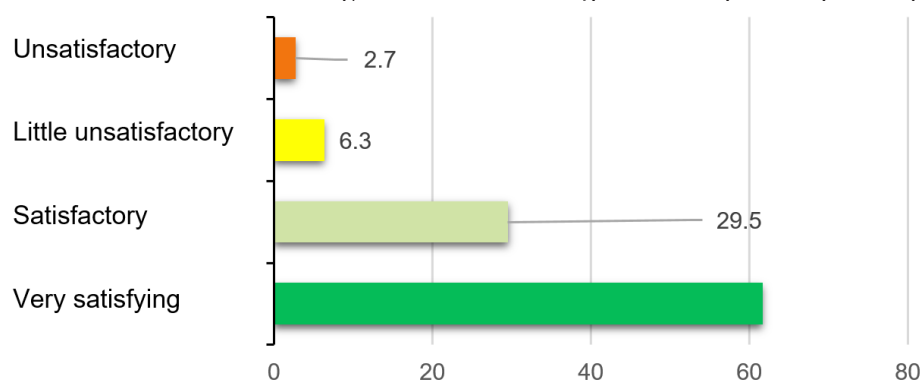

Figure 1. Preparation of students prior to admission to the University
Source: Questionnaire

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A 61.6% of the surveyed students reported very satisfactory previous preparation, 29.5% considered it satisfactory, and the rest rated it as somewhat satisfactory or unsatisfactory (Figure 1).

Regarding the question about the fulfillment of their expectations regarding the preparation received during the leveling semester, taking into account the content received in the subjects of the first level of the career that had just concluded, the majority agreed that it was partially satisfactory, with 47.3% (Figure 2).
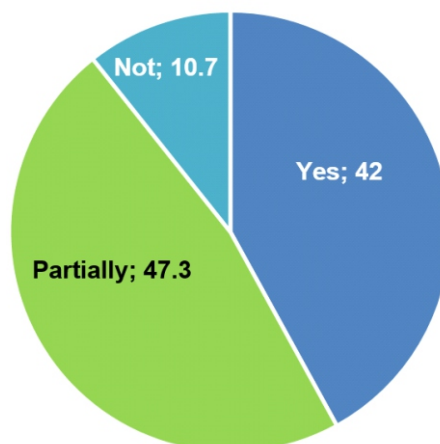

Figure 2. Fulfillment of students' expectations regarding the leveling semester

Source: Questionnaire

And finally, they were asked to briefly describe their opinion on which contents taught during the leveling semester needed to be further deepened or which others should have been included or deepened, taking into account the contents of the subjects they received in the first semester of the career. Regarding this, 45 students, representing 40.5%, expressed in different ways that the contents of the Anatomy subject should have been more in-depth and practical. Additionally, 17 (15.3%) students were dissatisfied with what they received in the Biology subject. Other contents that did not meet the expectations of the respondents were those of Chemistry, and 13 students preferred that contents be included that would allow them to better understand the Histology subject of the first semester.

The knowledge of Anatomy is indisputably the basis of medicine, as the study of physiology, pathology, semiology, and therapeutics require its knowledge and the correct use of anatomical language[15]. Therefore, teaching this discipline is essential for medical students, although many of its traditional teaching methods are still used today, its teaching has evolved especially alongside new technologies, always relying on the interaction of the study of theoretical contents with anatomical observation and exploration in practice[16].

In order to determine the extent to which students' opinions corresponded to their results achieved during the first semester of the career, the data on the failure rates recorded in the university's Academic Management System during the period from October 2017 to February 2018 were consulted (Figure 3).
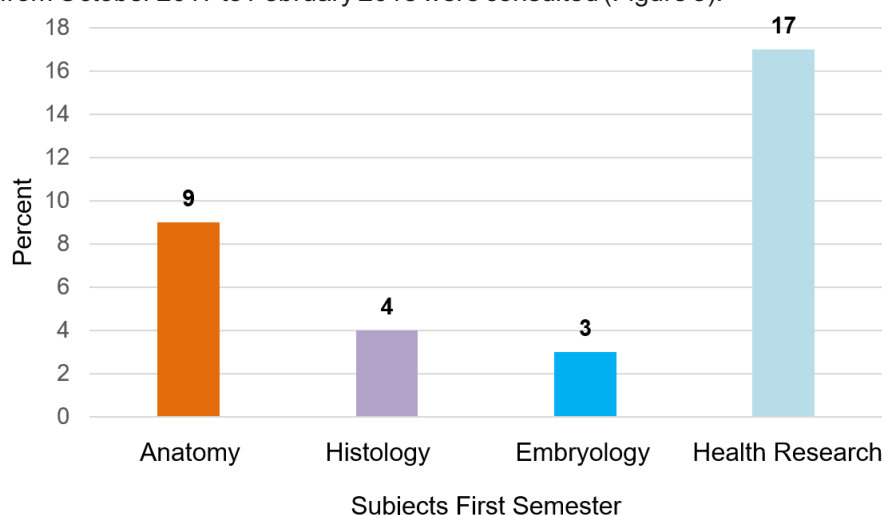

Figure 3. Failure rates in the first semester of the career by subjects

Source: Academic Management System.

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Discussion

Considering that the majority of students accessed the career through entrance exams, we can say that some authors have found evidence that entrance exams are a good predictor of overall performance and particular performance, although they suggest that this only happens in some subjects[6].

Céspedes et al.[17] observed a higher number of passes among first-year medical students who have good results on entrance exams in a study that related entrance characteristics and academic outcomes.

Regarding the assessment of students' preparation prior to university entry, although the majority of students reported satisfactory previous preparation (Figure 1), we can say that this is one of the recognized factors that could be related to poor academic outcomes in university[9].

In a study on factors that could hinder academic performance, Pérez[10] revealed that 51% of young people mentioned not having sufficient knowledge, as they did not learn everything necessary for their new educational stage in their previous educational institution.

Similarly, Acevedo et al.[11] in a study of 80 students conducted in Colombia where they identified and analyzed factors associated with repeating courses and delaying graduation in engineering programs at the University of Cartagena, only 7.8% of the participants indicated not having had very rigorous preparation since high school.

The knowledge that higher education institutions have about the profile of their incoming students provides relevant information to make possible the design of timely and pertinent interventions tailored to their needs and potentialities[12]. This should be added to a detailed analysis of academic trajectory and sociodemographic characteristics[13].

Regarding students' performance during the leveling semester, taking into account the content received in the subjects of the first level of the career that had just concluded, the majority agreed that the teaching received was partially satisfactory.

The National Secretariat of Higher Education, Science and Technology[14] of Ecuador states that access to public higher education is carried out through the National Leveling and Admission System in the framework of gratuity established in the Constitution of 2008, which must be preceded, among other requirements, by the approval of the leveling and promotion to the first level of the career.

This requirement has been analyzed considering that it is questioned whether students who access the leveling courses obtain greater benefit compared to those who access directly.

During the first semester of the career, several subjects are taught, among which the subject of Anatomy I turned out to be one of the subjects where more students failed with 9, only surpassed by Health Research with 17, demonstrating that Anatomy is considered the most complex basic subject by students and the one that demands the most dedication from them.

Anatomy, like the rest of the subjects, demands greater effort from the teachers who teach it to achieve better results, which could be achieved, in addition to the use of traditional methods, with the use of appropriate teaching methodologies and didactics of Anatomy, which could include new information and communication technologies in the leveling semester and the first semester of the career[18-20]. In the case of our institution, the career has been equipped with digital equipment and simulators to support the teaching of human morphology and other basic subjects. However, teachers still do not fully exploit these tools at their disposal to achieve significant learning, according to the criterion of students expressed in the open question.

On the other hand, the proper implementation of a comprehensive tutoring model, which involves greater involvement of the teaching staff and the entire university institution, could improve the academic performance of students, especially in these early stages of admission to this educational level[20].

Another thing that this work also shows is the need to articulate the programs of the career leveling courses with the programs of the subjects that the student will receive in the first semesters of their career, and to maintain feedback between the teachers of both programs, which in most cases is not achieved, and a valuable space is lost where the student truly trains for the university life that is just beginning.

Regarding the limitations of this study, its descriptive nature is a limitation because it was not possible to individually relate the preparation of the students to their academic performance in the first semester of the career, which would allow identifying more specifically where those difficulties would be and take the necessary actions for their improvement.

Conclusions

The preparation received by the students before admission, according to their own criteria, turned out to be mostly satisfactory.

Regarding the leveling semester, it partially fulfilled the students' expectations, taking into account the usefulness and depth of the content received.

Anatomy content turned out to be the one that must be reinforced the most, an element to take into account for the improvement of the quality of teaching in the leveling semester.

Authors' contributions

1. Conceived the idea of the manuscript: Izaguirre-Bordelois
2. Methodology: Izaguirre-Bordelois, López
3. Data collection: Izaguirre-Bordelois, Betancourt, López
4. Conducted the study analyses: Izaguirre-Bordelois, Betancourt, Torres-Izaguirre
5. Wrote the first draft of the article: Izaguirre-Bordelois
6. Critically edited the article: Izaguirre-Bordelois, Betancourt
7. Approved the final content of the article: Izaguirre-Bordelois, Betancourt, López, Torres-Izaguirre
8. Approved the version for publication: Izaguirre-Bordelois, Betancourt, López, Torres-Izaguirre

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