**Artículo Original Cuantitativo** 

Expectations versus reality in students when starting the medicine career, at Da Vinci University of Guatemala. January-July 2022

Expectativa versus realidad en estudiantes al iniciar la carrera de medicina, en Universidad Da Vinci de Guatemala. Enero-Julio 2022

Attentes contre réalité chez les étudiants au début de la carrière en médecine, à l'université Da Vinci Du Guatemala. Janvier-Juillet 2022

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#### **ABSTRACT**

**Introduction**: the expectation and reality that medical students have when entering the university. **Objective**: to compare the expectations and reality of students when they start their medical studies at Da Vinci University, from January to July 2022. **Method**: the study is observational, descriptive, cross-sectional; carried out on 475 students; It was carried out in the first to sixth years, in Huehuetenango, Quetzaltenango and Guatemala campuses, of the Faculty of Medical and Life Sciences, of the Da Vinci University. The questionnaire was validated with the modified Moriyama criteria, with 18 questions; applied through the Google form. Research ethics were complied with; the operationalization of variables was carried out, to meet the objectives. Techniques and

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**Results**: the female sex predominated with 52.6%, with the highest participation of the Huehuetenango headquarters represented with 44.0%, only 24% of the first-year students start their career with great expectations, while only 7.9% of the sixth year students show an unexpected reality. **Conclusions**: during their academic training, medical students present different expectations and realities. The results can be divided into two large groups: the first represented by those who have a high or medium expectation at the start of the race, while the second group, at the start of the race, has little expectation, reality is unexpected.

**Keywords**: expectation, reality, medical students

#### RESUMEN

Introducción: la expectativa y realidad que se generan los estudiantes de medicina al ingresar a la universidad, pueden ser coincidentes o no en los diferentes escenarios docentes. **Objetivo**: comparar la expectativa y realidad de los estudiantes cuando inician sus estudios de medicina de la Universidad Da Vinci, enero a julio 2022. **Método**: el estudio es de forma observacional, descriptiva, de corte transversal; realizado en 475 estudiantes. Se ejecutó en todos los estudiantes de primero a sexto, en las sedes Huehuetenango, Quetzaltenango y Guatemala, de la Facultad de Ciencias Médicas y de la Vida, de la Universidad Da Vinci. Se validó el cuestionario con los criterios de Moriyama modificados, con 18 preguntas. Se cumplió con la ética de la investigación y se realizó la operacionalización de variables. Se utilizaron técnicas y procedimientos para la obtención de la información de procesamiento de análisis, discusión y síntesis. Resultados: predominó el sexo femenino con el 52.6%, con mayor participación de la sede de Huehuetenango representado con el 44.0%, sólo el 24% de los estudiantes de primer año inician la carrera con gran expectativa, mientras que solo el 7.9% de los de sexto año manifiestan una realidad poco esperada. Durante la formación académica los estudiantes de medicina presentan expectativas y realidades diferentes. **Conclusiones**: Los resultados se pueden dividir en dos grandes grupos: el primero representado por quienes tienen una gran o mediana expectativa al iniciar la carrera, mientras el segundo grupo, al iniciar la carrera tiene poca expectativa la realidad es inesperada.

Palabras clave: expectativa, realidad, estudiantes de medicina

## RÉSUMÉ

Introduction: l'attente et la réalité qu'ont les étudiants en médecine à leur entrée à l'université. Objectif: comparer les attentes et la réalité des étudiants lorsqu'ils débutent leurs études de médecine à l'Université Da Vinci, de janvier à juillet 2022. Méthode: l'étude est observationnelle, descriptive, transversale; réalisée sur 475 étudiants; Il a été réalisé de la première à la sixième année, dans Les campus de Huehuetenango, Quetzaltenango et Guatemala, de la Faculté des Sciences Médicales et de la Vie de l'Université Da Vinci. Le questionnaire a été validé avec les critères de Moriyama modifiés, avec 18 questions; appliqué via le formulaire Google. L'éthique de la

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recherche a été respectée; l'opérationnalisation des variables a été réalisée, pour atteindre les objectifs. Des techniques et des procédures ont été utilisées pour obtenir des informations pour l'analyse, la discussion et le traitement de synthèse. **Résultats**: le sexe féminin prédomine avec 52,6 %, avec la plus forte participation du siège de Huehuetenango représenté avec 44,0 %, seuls 24 % des étudiants de première année commencent leur carrière avec de grandes attentes, tandis que seulement 7,9 % de la sixième année montrent un inattendu réalité. **Conclusion**: au cours de leur formation académique, les étudiants en médecine présentent des attentes et des réalités différentes. Les résultats peuvent être divisés en deux grands groupes: le premier représenté par ceux qui ont une attente élevée ou moyenne au départ de la course, tandis que le second groupe, au départ de la course, a peu d'attente, la réalité est inattendue.

Mots-clés: attente, réalité, étudiants en médecine

#### **INTRODUCTION**

The university is the high-level academic training institution, in which the student wishes to start his professional training, where he will expand his intellect in a field of study. In making this decision, what am I going to study? a number of factors converge to make this decision. Among some factors are: the psychological conditions of the student, his family, characteristics of his socioeconomic environment, among others. Creating in the student multiple expectations of what his professional future will be and likewise his training process, which will lead him to that goal.

Ruiz mentions <sup>1</sup>, the role throughout the history of the university in society has gone through multiple processes and stages, ranging from ancient models where the Catholic Church was in charge of higher education and used a theocentric teaching pattern, based on an ecclesiastical model, in order to train young people in the clerical professions, theology, law and medicine, all of which were considered major faculties, there were minor faculties such as arts or philosophy, the basis of all possible wisdom according to the Greeks.

The university student seeks knowledge, from his alma mater; all the necessary information to be able to be the quality professional that society expects. Therefore, as defined by expectation as: "the reasonable possibility that an event will happen." While the definition of reality as: "an exhibition project which revolves around the concept of representation." That is why it is so important to know what students think.

The fact that the student with a diversified level of training begins a university process, where he is unaware of the courses to come, the new study partners, his professors, makes all this universe of variables and new experiences create thoughts and feelings of stress, nervousness or even anxiety. It is very common for medical students to feel this type of perception, because they are subjected to academic, physical, mental and emotional pressure.

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On the other hand: depression, anxiety and stress, associated with the group of university students, especially medical students in their different years, negatively affects their emotional self-perception. The emotional resources available to handle the negative effects generated by the academic overload that the degree imposes on its students deteriorate the physical, personal, social and even family well-being of each student. In this sense, there is research that an adequate perception of emotional intelligence could act as a protective factor of negative emotional charge, particularly in students of the health area. <sup>4</sup>

Castillo <sup>5</sup> and his team affirm that in Guatemala, fourth, fifth, and sixth year medical students and residents of medical specialties work approximately 10 hours daily. They start their daily shift at 6:30 am and end at 4:00 pm from Monday to Friday. Once or twice a week they are assigned a mixed shift, which means an evening and night shift, from 4:00 pm to 8:00 am with a duration of 16 hours. Mixed shifts often occur twice a week, resulting in a continuous work shift up to 36 hours. There are no established schedules for personal hygiene and food, in most cases failing to comply with the general regulations for external, internal and resident students.

In Guatemala, there are currently few or no studies on the medical career student, and there is no information on their opinion about the expectation of their training process when starting the career, nor is there information on the reality to which students face during their academic training process. For this reason, it is important to provide information based on different experiences, anecdotes, learning and opportunities. Each experience, moment and experience must be enjoyed, because the training process of a doctor is a world full of many learning and experiences.

Considering the above, the concern arises: What is the expectation versus reality in students when starting the medical career, at the Da Vinci University of Guatemala from January to July 2022?

## **METHOD**

- Context and classification of the investigation
   The research was of an observational, descriptive, cross-sectional type, in a single evaluation, in students of the Da Vinci University of Guatemala, during the time from January to July 2022.
- Universe or population, and sample
   The universe was constituted by all the students of the medical career, in the Faculty of
   Medical and Life Sciences, of the Da Vinci University of Guatemala, in the different locations
   of Huehuetenango, Quetzaltenango, Guatemala. No sample was extracted because the entire
   universe was used.

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## Variables and data collection

| Variable                    | Туре                            | Scale                        | Description                                      | Indicators                                    |
|-----------------------------|---------------------------------|------------------------------|--|---|
| Age                         | Quantitative<br>Continuous      | Age presented by respondents | Lifetime from birth to the present.              | Absolute and relative frequency distribution. |
| Sex                         | Qualitative Nominal Dichotomous | Female<br>Male               | According to the biological sex of the students. | Absolute and relative frequency distribution. |
| Campus                      | Qualitative                     | Huehuetenango                | Place where                                      | Absolute and                                  |
|                             | Nominal                         | Quetzaltenango               | medical<br>students are                          | relative<br>frequency                         |
|                             | Polytomic                       | Guatemala                    | currently<br>enrolled.                           | distribution.                                 |
| Year of the                 | Quantitative                    | First                        | Year the   | Absolute and                                  |
| medical degree.             | Continuous                      | Second                       | student is studying.                             | relative<br>frequency                         |
|                             |                                 | Third                        |  | distribution.                                 |
|                             |                                 | Fourth                       |  |   |
|                             |                                 | Fifth                        |  |   |
|                             |                                 | Sixth                        |  |   |
| It is possible to           | Qualitative                     | Never                        | The possibility                                  | Absolute and                                  |
| study for a medical degree. | Ordinal                         | Hardly ever                  | of passing the degree.                           | relative<br>frequency                         |
|                             |                                 | Sometimes                    |  | distribution.                                 |
|                             |                                 | Almost always                |  |   |
|                             |                                 | Always                       |  |   |
| In six years, the necessary | Qualitative                     | Never                        | Years in acquiring all                           | Absolute and relative                         |

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| knowledge in the medical career is acquired to work properly.  The subjects are                               | Ordinal  Qualitative   | Hardly ever Sometimes Almost always Always Never | the necessary information.  | frequency<br>distribution.                | and |
|---|------------------------|--|---|---|-----|
| essential for academic training in medicine.  | Ordinal                | Hardly ever Sometimes Almost always Always       | courses to acquire knowledge.   | relative<br>frequency<br>distribution.    | anu |
| In medicine, annual updates are necessary to improve academic and professional training.                      | Qualitative<br>Ordinal | Never Hardly ever Sometimes Almost always Always | Workshops,<br>forums, talks<br>that are held<br>to improve<br>training. | Absolute relative frequency distribution. | and |
| In the medical career, all the essentials are obtained in theoretical training to be fully put into practice. | Qualitative<br>Ordinal | Never Hardly ever Sometimes Almost always Always | The education provided is best for practical knowledge.                 | Absolute relative frequency distribution. | and |
| In medicine, the information acquired in the educational process is essential.                                | Qualitative<br>Ordinal | Never Hardly ever Sometimes Almost always Always | Important information for learning.                                     | Absolute relative frequency distribution. | and |

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| The medical career will allow you to have hobbies.                 | Qualitative<br>Ordinal | Never Hardly ever Sometimes Almost always Always | Hours that you can expect for personal use.                                     | Absolute relative frequency distribution. | and |
|--|------------------------|--|---|---|-----|
| In the medical field, students withdraw.                           | Qualitative<br>Ordinal | Never Hardly ever Sometimes Almost always Always | Student<br>dropout.   | Absolute relative frequency distribution. | and |
| The race is not as expected.                                       | Qualitative<br>Ordinal | Never Hardly ever Sometimes Almost always Always | The student's perspective when living the reality of their educational process. | Absolute relative frequency distribution. | and |
| The subjects correspond to academic and professional interest.     | Qualitative<br>Ordinal | Never Hardly ever Sometimes Almost always Always | Courses are relevant to students.   | Absolute relative frequency distribution. | and |
| The information provided in the medical career is what is thought. | Qualitative<br>Ordinal | Never Hardly ever Sometimes Almost always        | The contents are what the student expects.                                      | Absolute relative frequency distribution. | and |

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|   |                        | Always   |   |   |     |
|---|------------------------|--|---|---|-----|
| The practical activities of the medical career correspond to what was imagined. | Qualitative<br>Ordinal | Never Hardly ever Sometimes Almost always Always | The practices from the beginning in the laboratories are what was expected. | Absolute relative frequency distribution. | and |
| The additional study hours are as imagined.                                     | Qualitative<br>Ordinal | Never Hardly ever Sometimes Almost always Always | The hours that the student contributes to their learning.                   | Absolute relative frequency distribution. | and |
| A medical career allows you to have hobbies.                                    | Qualitative<br>Ordinal | Never Hardly ever Sometimes Almost always Always | Extracurricula r activities.  | Absolute relative frequency distribution. | and |

## Statistical processing

Among the participants there were 669 students, of which 475 medical students were surveyed, which corresponds to 71% of the population. In order to meet the objectives, the questionnaire was validated with the modified Moriyama criteria <sup>6</sup>, the instrument prepared was submitted to the criteria of 3 previously selected experts (1 educator, 1 physician and surgeon, and 1 MSc. in pediatrics) for its appearance validation and content.

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The opinion on each of the questions that make up the questionnaire was explored, validated with the modified Moriyama criteria. The criteria used were the following: understandable: it refers to the fact that the respondent understands what is asked in the item, sensitive to variations: it refers to the range of possible responses of the item showing different gradations of the variable to be measured, with assumptions justifiable basic and intuitively reasonable: indicates that, from a logical and theoretical point of view, it is reasonable to think that the item contributes to measuring the impact of the specialty, derivable from data that can be obtained: it refers to the fact that it is possible to obtaining the information necessary to obtain an answer to the item.

They were asked to carry out the evaluation assigning a value to each item, for each one of the 4 criteria previously exposed, where the lowest total score is 0 and the highest is 12 according to the following scale: a lot: 3, enough: 2, little: 1, nothing: 0.

Each expert evaluated, one by one, the 18 items individually; for each criterion mentioned; the summation was made as a whole to obtain a total score as mentioned above; followed by the summation by the three experts for each item where the total score is less than 0 and greater than 36; for performing the rule of three and taking the percentage established for each question, where a percentage less than 70% is not valid to be able to use the question in the questionnaire and greater than 70% is valid.

The Google forms tool was used, where the database was generated in Excel, with this the statistical program SPSS version 2021 was used, where absolute and relative distributions were used. The discussion of results was made based on research and comparisons between established variables.

To carry out the coding, the aspects that most affect expectations and reality were identified, which were valued with 1: never and 2: almost never. To identify the aspects that most favor expectation and reality, which were rated 4: almost always and 5: always.

The items were summarized as follows for the best evaluation of the questionnaire:

Expectation assessment: low expectation: 01-12, medium expectation: 13-24, high expectation: 25-35

Reality assessment: unexpected reality: 01-12, little expected reality: 13-24, expected reality: 25-35

#### Ethical aspects

Participants were informed about the objectives of the research and its importance. They were informed that the results would be presented collectively and not individually, complying with the principle of confidentiality, this means that the answers cannot be known by other people, nor can they be identified in the publication of the results.

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#### **RESULTS**

The results obtained during the research on expectations versus reality of medical students include the sociodemographic distribution, in which there was a predominance in the group from the department of Huehuetenango with the participation of 209 students, this being represented with 44%; Guatemala with 29.5% and Quetzaltenango with 26.5%. Within the gender it was represented by 22.5% female and 21.5% male. And a greater participation by first-year students with 23.2%.

Observing Table 1, within the 475 students, it can be noted that of the total number of students who achieved the reality they expected from the medical career, they represent 28.6%. Of this group of expected reality, those who had great expectations when starting the medical career predominated, represented by 76.5% of the students. So it is understood that if students have great expectations, their reality will be as expected.

When analyzing the chi-square test, there is a statistically significant association between the level of expectation and the level of reality (p<0.005).

Table 1. Level of expectation and level of reality

|                   |                        | R                | Total                             |                           |            |
|-------------------|------------------------|------------------|-----------------------------------|---------------------------|------------|
| Expectation Level |                        | Expected reality | Little<br>expect<br>ed<br>reality | Unexpec<br>ted<br>reality |            |
| Great             | Count                  | 104              | 138                               | 0                         | 242        |
| expectation       | % within Reality Level | 76.5%            | 43.5%                             | 0.0%                      | 50.9%      |
| Median            | Count                  | 32               | 179                               | 1                         | 212        |
| expectation       | % within Reality Level | 23.5%            | 56.5%                             | 4.5%                      | 44.6%      |
| Little            | Count                  | 0                | 0                                 | 21                        | 21         |
| expectation       | % within Reality Level | 0.0%             | 0.0%                              | 95.5%                     | 4.4%       |
|                   | Count                  | 136              | 317                               | 22                        | 475        |
| Total             | % within Reality Level | 100.0%           | 100.0<br>%                        | 100.0%                    | 100.0<br>% |

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| Chi-square tests   |          |    |                             |  |  |  |
|--------------------|----------|----|-----------------------------|--|--|--|
|                    | Value    | Gl | Asymptotic sign (bilateral) |  |  |  |
| Pearson chi-square | 495.866a | 4  | .000                        |  |  |  |
| Likelihood ratio   | 208,765  | 4  | .000                        |  |  |  |
| No of valid cases  | 475      |    |                             |  |  |  |

to. 1 cells (11.1%) have an expected frequency less than 5. The minimum expected frequency is .97.

Observing Table 2, the medical students who have a great expectation are 242, so they represent 50.9 % of the total of 475 students. It is noted and understood that the students who, having a great expectation, the reality they face is the expected, represent 43.0%.

Table 2. Level of expectation and level of reality

|                       |                            | Reality Level    |                               |                           | Total          |
|-----------------------|----------------------------|------------------|-------------------------------|---------------------------|----------------|
| Expectation Leve      | el                         | Expected reality | Little<br>expected<br>reality | Unexpec<br>ted<br>reality |                |
| Great                 | Count                      | 104              | 138                           | 0                         | 242            |
| expectation           | % within Expectation Level | 43.0%            | 57.0%                         | 0.0%                      | 100.0<br>%     |
| Median                | Count                      | 32               | 179                           | 1                         | 212            |
| expectation           | % within Expectation Level | 15.1%            | 84.4%                         | 0.5%                      | 100.0<br>%     |
| Little<br>expectation | Count                      | 0                | 0                             | twenty-<br>one            | twent<br>y-one |
|                       | % within Expectation Level | 0.0%             | 0.0%                          | 100.0%                    | 100.0<br>%     |
| Total                 | Count                      | 136              | 317                           | 22                        | 475            |

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| % within Expectation Level | 28.6% | 66.7% | 4.6% | 100.0% |
|----------------------------|-------|-------|------|--------|
|                            |       |       |      |        |

Observing table 3, the comparison between both aspects on the expectation and reality of medical students, 50.9% have greater expectation and 29.1% indicated that in their reality they face less expectation, however those with lower expectation represent only a minority, their reality was unexpected, representing 4.4%. Which means that those who set goals during their university education process, will have similar results to what they expect, while those who do not set goals, will have an unexpected reality.

Table 3. Level of expectation and level of reality

|                     |                | Reality Level    |                               |                           | Total      |
|---------------------|----------------|------------------|-------------------------------|---------------------------|------------|
| Expectation Level   |                | Expected reality | Little<br>expected<br>reality | Unexpec<br>ted<br>reality |            |
|                     | Count          | 104              | 138                           | 0                         | 242        |
| Great expectation   | % of the total | 21.9%            | 29.1%                         | 0.0%                      | 50.9<br>%  |
|                     | Count          | 32               | 179                           | 1                         | 212        |
| Median expectation  | % of the total | 6.7%             | 37.7%                         | 0.2%                      | 44.6<br>%  |
| Little evenestation | Count          | 0                | 0                             | 21                        | 21         |
| Little expectation  | % of the total | 0.0%             | 0.0%                          | 4.4%                      | 4.4%       |
|                     | Count          | 136              | 317                           | 22                        | 475        |
| Total               | % of the total | 28.6%            | 66.7%                         | 4.6%                      | 100.0<br>% |

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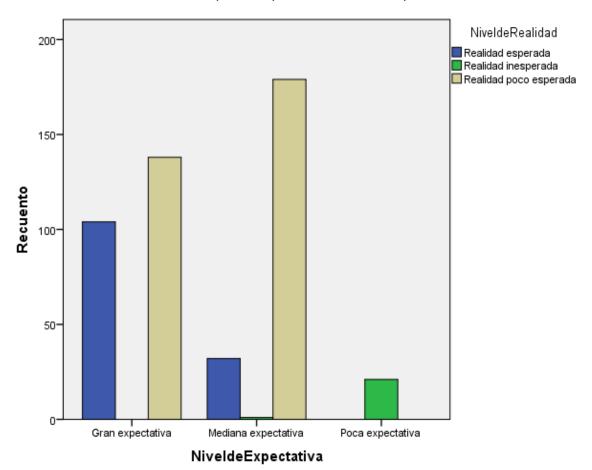




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Observing graph 1, the comparison between both aspects: expectation and reality. The bar shows the relationship between the mentioned aspects, so if the expectation of medical students at the beginning of the career is great, it will also be the reality they face because it will be the expected one.



Graph 1. Expectation and reality

Source: Table 3.

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# **DISCUSSION**

Among the 475 medical students who participated in the research, they belonged to different years, gender, and among other sociodemographic variables. Half of the medical students are female and half are male, which is why the research by Matzumura <sup>7</sup> in compared on the participation of medical students according to their sex in 2019, where he expresses that currently, regarding the gender of medical students has changed over time, in some cases, there is a greater number of female students. Therefore, the distinction between the sexes varies depending on different factors such as the institution, participation of the different countries, and the general population. It should be noted that in both studies the female sex has begun to open up a field at the university level.

The years that must be studied in the medical career are from the first year to the sixth year. The study found greater participation in the first year and less participation in the sixth year. In the research on interests and perspective on the medical career, by Toso <sup>8</sup> and collaborators, they found that the highest participation was obtained by first year and seventh year students. Therefore, there is a relationship with both studies where it is evident that the first year has greater participation, at the same time a discrepancy with the sixth year is noted since in the research they were the least participatory compared to the Toso study.

When noting the expectation and reality of medical students, their critical judgment is evidenced, where the greater the expectation at the beginning of the educational process, their reality will be greater and those whose expectation is low, their reality will be unexpected. However, when comparing the research with the contribution made by Álvarez <sup>9</sup> where he indicated that the expectation and reality does not depend only on the students, but also on the teachers. Since some students indicated that before joining higher education they had needed psychological help, support to learn to organize and study, guidance to prepare for the university entrance exam. Those students who had received help stated that it had been essential through family and friends to make their training process more feasible.

Student expectations and level of satisfaction with educational quality are of interest to each alma mater and thus be able to provide the best educational quality. In 2021 at the National University of Huancavelica, they demonstrated that a percentage of students that corresponds to 39.4%, had very high expectations and level of satisfaction, which corresponds to the educational quality that the university offers. <sup>10</sup> Both studies show similarities with the fact that students have high expectations about the academic training they will receive each year at their university.

Another important factor is that because the years go by and the students, noticing that it was not as they imagined, constantly withdraw during the following years. According to a study by UNAM by Campillo <sup>11</sup> in 2021, it determined the low regularity of attendance in the classrooms of medical students, observed that from the first year the students withdraw and that less than half manage to finish the medical degree. Not all students manage to finish their medical degree, which implies that there are factors that make the student make this decision. When comparing both studies, the stability of the student not only depends on what they do, but also on factors such as family, friends, economy, among others.

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The reality of the students can change, based on experiences, during the investigation few are what their reality is not as expected. In a study carried out in Peru on vocational and professional interest and academic performance in students at the National University of Central Peru, developed by Rodríguez <sup>12</sup>, with 35 university students, the primary conclusion was that students have an adequate vocational guidance their personal interests improve the academic performance they will obtain. We can mention that if students are honest with what attracts their attention, the subjects will be of interest. This demonstrated the aspects most valued by medical students, of which the following stand out: the subjects are essential for academic training, the updates favor academic and professional training, in the career the essentials are obtained in theoretical training to take it to the practice.

Comparing the expectation and reality of the doctor and surgeon career is like describing two mountains separated by a river, in reality they are so close to each other, but in practice, they are so far apart and it depends on each person, each student to describe this phenomenon, which for some will be to their liking and for others it will not be what they were looking for. In the present analysis it can be affirmed that each student is unique because it is the mixture between personalities, families, social and cultural factors that gives them different observance from each other.

#### **CONCLUSIONS**

- During academic training, medical students present different expectations and realities; Therefore, the results can be divided into two large groups: the first, is represented by those who have a great or medium expectation at the beginning of their career, generally presenting an unexpected or expected reality more frequently; while the second group, at the beginning, has little expectation of the race and the reality that they present in its entirety is unexpected.
- During the investigation, according to the gender that had a greater participation was the female gender. Where the students that predominated were those from the Huehuetenango campus, and within the different years of the medical career it was the first year, who presented the highest percentage of students.
- It was identified that there is an association between expectation and reality, since statistically there is a relationship. Therefore, it is concluded that medical students at the beginning of their academic training raise high expectations, which meets their reality; however, during the last years of training, the reality changes, indicating that it is not the same one raised at the beginning of their training.

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#### **CONFLICTS OF INTEREST**

No conflicts of interest are declared.

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#### Article title:

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Name of the author(s):

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Luis Alfredo Arango Espinoza.

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