Levels of loneliness and depressive symptomatology of health science students at PUCMM on the campus of Santiago de los caballeros
Niveles de soledad y sintomatología depresiva de los estudiantes de ciencias de la salud de PUCMM del campus de Santiago de los caballeros

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 ABSTRACT

Depression and loneliness are two mental health conditions of which a significant increase has been observed in their appearance in university students, specifically those from the area of Health Sciences, because they are exposed to a great psychological burden due to academic demands, biological aspects and socio-economic factors, which affect their quality of life. This study aims to determine the levels of loneliness and depressive symptoms of PUCMM Health Sciences students from the Santiago de los Caballeros Campus. Methodology. A descriptive cross-sectional study was conducted from January to March 2023, using a stratified probabilistic sampling, with a total of 156 participants. Results. It was found that 18.6% showed moderate levels of loneliness, 77.6% moderately high and 3.8% high levels of loneliness. In relation to depression, 62.8% showed levels of minimal depressive symptoms, 14.1% mild depressive symptoms, 12.8% moderate depressive symptoms, and 10.3% severe depressive symptoms. In addition, a statistically significant relationship was found between the severity of depressive symptoms and socioeconomic status (p=0.014), loneliness levels and residence status (p=0.015) and the severity of depressive symptoms and academic index (p=0.047). Discussion. The results show that university students present high levels of depressive symptoms and loneliness, where the importance of creating prevention and treatment programs against these mental health conditions lies.

RESUMEN

Palabras clave: síntomas depresivos, soledad, estudiantes universitarios, rendimiento académico. La depresión y la soledad son dos condiciones de salud mental de las cuales se ha observado un aumento significativo en su aparición en estudiantes universitarios, específicamente aquellos provenientes del área de Ciencias de la Salud, debido a que se encuentran expuestos a una gran carga psicológica por las exigencias académicas, aspectos biológicos y factores socioeconómicos; que afectan su calidad de vida. Este estudio tiene como objetivo determinar los niveles de soledad y sintomatología...
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depresiva de los estudiantes de Ciencias de la Salud de PUCMM del Campus de Santiago de los Caballeros. Metodología. Se realizó un estudio descriptivo de corte transversal en el periodo de enero a marzo del 2023, utilizando un muestreo probabilístico estratificado, con un total de 156 participantes. Resultados. Se encontró que el 18.6% mostró niveles de soledad moderados, el 77.6% moderadamente alto y 3.8% niveles altos de soledad. En relación con la depresión, el 62.8% mostró niveles de sintomatología depresiva mínima, el 14.1% sintomatología depresiva leve, el 12.8% sintomatología depresiva moderada y el 10.3% sintomatología depresiva grave. Además, se encontró una relación estadísticamente significativa entre la severidad de la sintomatología depresiva y el estado socioeconómico (p=0.014), los niveles de soledad y el estado de residencia (p=0.015) y la severidad de sintomatología depresiva y el índice académico (p=0.047). Discusión. Los resultados encontrados mostraron que los estudiantes universitarios presentan altos niveles de sintomatología depresiva y soledad, donde radica la importancia de la creación de programas de prevención y tratamiento en contra a estas condiciones de salud mental.
Introduction

The emotional state and the ability to relate to others are important pillars for the good psychosocial development of people. Mental health is a complex field that has gained increased attention in recent years due to the rise in cases of mental disorders and increased awareness on the part of society. Within these disorders, depression and loneliness rank as two of the major mental health indicators worldwide. According to data provided by the WHO in 2020, there are approximately more than 300 million cases of people suffering from depression (World Health Organization, 2023). Similarly, in a survey conducted by the National Bureau of Statistics, it was evidenced that 1 in 10 people claim to present symptoms of loneliness most of the time, between the age range of 16 to 24 years (Ortiz-Ospina E, 2020).

Depression and loneliness affect several aspects of the daily life of the people who suffer from it, as is the case of university students. This group of people is at high risk of suffering from depression and loneliness, mainly because they are exposed to a great psychological burden due to academic demands, biological aspects and socioeconomic factors; which influences their quality of life. Studies have shown that these two health conditions have resulted in decreased quality of life in both healthy and sick people (Hols, J. et al. 2019). The negative effects of these two conditions not only threaten psychological health, but also physical and socioeconomic well-being. Students with depressive symptoms tend to present complications such as risk of heart attack, emotional attachment, feelings of emptiness and sadness, difficulty falling asleep, fatigue, weight gain or loss, among others (Healthline, 2022). On the other hand, those who suffer from loneliness may present some complications such as high alcohol consumption, depression, insomnia, immune system weakness, and cardiovascular problems (Rico-Uribe, L et al. 2018). In addition, problems in interpersonal relationships and financial status may be witnessed.

Among university students, those belonging to the health sciences area are more frequently exposed to circumstances that put their mental health status at stake. Apart from common academic stressors, they face intense theoretical and practical classes with high levels of academic competitiveness and pressure, frequent evaluations, patient care, decision making regarding the health of others, a stressful clinical environment and sometimes may evidence death (Kılınç G, et al. 2019). Despite the fact that university students in the health sciences area are at high risk of presenting these mental conditions, there is insufficient research in the Dominican Republic that focuses on this population and their levels of loneliness and depressive symptomatology. In this way, the data obtained from this study can be used for the development of measures to prevent and address this health problem. Due to the importance and the negative impact it represents, this study was conducted to determine the levels of depressive symptomatology and loneliness in students of Health Sciences at the PUCMM of the Santiago de los Caballeros Campus. In addition, the research team seeks to relate these mental health indicators to sociodemographic characteristics, year of study, academic index and academic load. In this way, data can be collected to help develop therapeutic strategies and improve students’ academic and personal performance.

Method

A descriptive cross-sectional study was conducted from January to March 2023, using stratified probability sampling. The research participants were selected from the different careers that make up the PUCMM Health Sciences at the Santiago de los
Caballeros Campus, such as Medicine, Nutrition and Dietetics, Stomatology and Physical Therapy during the aforementioned period, taking into account the various inclusion and exclusion criteria. A total of 259 students were sampled, of which 156 were those who participated in the study.

**Study Variables**

The variables used were depressive symptomatology and loneliness, these being the main variables in this study. Similarly, sociodemographic variables were used, such as: age, sex, marital status, home situation, socioeconomic status and career. Among the academic variables are the academic load and index.

**Inclusion criteria**

Among the inclusion criteria that were taken into account at the time of conducting this research were:

- Students belonging to the Health Sciences area who are enrolled from October 2022 to January 2023, since the sample used for this research is the one belonging to the Health Sciences department from that period of time.
- Students belonging to the area of Health Sciences from the third year to the last year of career, since those who are in pre-medical and internship will be excluded.
- Students who are 18 years of age or older must be of legal age to participate in this research.
- Students who sign the informed consent form, since participants must be informed about the entire process to be carried out throughout the research.
- Students who fill out more than 70% of the questionnaire, since this will provide more accurate data for the study.

**Exclusion criteria**

- Among the exclusion criteria that were taken into account at the time of conducting the present investigation were:
- Students belonging to the area of Health Sciences who are in internship, since they are not part of the desired sample in the study.
- Students who live alone, as the levels of loneliness in these types of students will vary from those who live with others.
- Nursing students, because they are not part of the Health Sciences area.

**Collection instrument and its validation in the research**

The instrument used for this research is composed of 3 different sections. The first section is composed of six closed-ended questions prepared by the research team, with the purpose of evaluating the sociodemographic variables of the participants. The second section is composed of four closed questions that were created by the researchers to evaluate the academic variables of the participants. The third section is made up of 41 closed questions, 20 of which are part of the UCLA Loneliness Scale and the other 21 are part of the Beck Depression Inventory, where the main objective is to measure the levels of depressive symptomatology and loneliness in the participants of the study.

The UCLA Loneliness Scale consists of 20 questions to be self-completed by participants. The score obtained can vary between 20 and 80 points, where the higher the
score, the greater the degree of loneliness. The Beck Depression Inventory can be scored between 0 and 63 points, the higher the score obtained, the higher the level of depressive symptomatology of the participant. If a score of 0 to 13 points is obtained, there is minimal depressive symptomatology. Similarly, if 14-19 points are obtained it is mild depressive symptomatology, if it is 20-28 it is known as moderate depressive symptomatology, and if it is 29-63 it is known as severe depressive symptomatology. Once the collection instrument had been validated by the Bioethics Committee of the Faculty of Health Sciences (COBE-FACS) of the Pontificia Universidad Católica Madre y Maestra, it was used in a pilot test. The study was preliminarily tested, where the feasibility of the study and the improvements to be made were checked, making the necessary corrections to improve the research design.

Data collection procedure

In order to obtain valid results in the research, it is essential to describe precisely the steps that must be carried out to collect the information. This is why the investigators of this study then presented this data collection plan, so that the study can be reproducible and free of possible biases. The first step was to propose the research proposal to the Bioethics Committee of the Faculty of Health Sciences (COBE-FACS), which evaluated the conduct of the research, taking into account compliance with ethical principles. Subsequently, in order to initiate this research, knowledge was obtained of the number of students in each school of the Faculty of Health Sciences, enrolled in the period from October to March 2023, whose information was provided by the dean of this faculty. For data collection, the relevant authorities of the PUCMM were contacted to provide the information and allow the researchers to send via institutional e-mail the informed consent and the survey that was used in the research. They were developed in a Google Forms. When the participants received this e-mail, the first thing they found when they opened the link was the informed consent, in which they were presented with the purpose of the study, the risks and benefits, and how the data obtained would be handled. Subsequently, the participant was asked if he/she understood what will be done in the research through a closed question, and then he/she was given the option to select whether or not to participate in this study. If the participant decides that he/she does not wish to participate, the form is automatically closed. On the other hand, if the participant decides to participate in the study, the form automatically opens the survey so that it can be completed.

The survey developed by the researchers is designed to be as clear and precise as possible so that the participant can fill it out satisfactorily. It consists of a total of 51 multiple-choice questions. Researchers do not require direct participation in filling out the questions since none of the questions involve physical measurement of the variables. If the participant had any questions, the researchers were available to respond electronically. It is estimated that the participant will take approximately 15-20 minutes to complete the survey. Once the survey is completed, the form automatically sends the information and closes, thus completing this process.

Data processing and analysis plan

Once the data collection was completed, the information obtained from Google Forms was downloaded. An exhaustive review of the information presented here was carried out to detect any errors or data that should be discarded when filling out the survey. Then, for their tabulation, the use of EXCEL 2017 was implemented and the statistical package SPSS (Statistical Package for Social Science) version 17.0 was used to analyze them.
These data were reviewed to verify that there were no errors in the coding of the variables. Once this step was completed and verified, the analysis plan continued with a statistical inspection of the data to determine the levels of loneliness and depressive symptomatology of the Health Sciences students of PUCMM at the Santiago de los Caballeros campus, and to observe how these levels were related to sociodemographic and academic variables. Only qualitative variables (depression, loneliness, sex, age, marital status, residence status, socioeconomic status and career, academic load and index) are taken into account. First of all, it should be clarified that the data analysis took into account a confidence interval of 95%, a maximum permissible error of 5% and a value of p<0.05 as the limit for statistical significance. The analysis process was divided into two stages.

The first stage is based on the analysis of the descriptive statistics of the data. A univariate analysis was performed using absolute frequency and percentage for qualitative variables, while for quantitative variables the mean was used as a measure of central tendency and the standard deviation as a measure of dispersion. Subsequently, this descriptive analysis was presented through bar graphs and tables.

In the second phase of this analysis plan, bivariate analysis of the data was carried out in accordance with the objectives of the study. Here crosses were made between the variables, and the statistical tests chosen depend on the nature of these variables. The Chi-square test was used for the crossover between qualitative variables, while the Student’s t-test was used for the crossover between qualitative and quantitative variables.

**Ethical considerations**

The information obtained from this research will remain strictly confidential and the questionnaire was applied anonymously, respecting those students who agreed to participate. It is necessary to inform that this research was reviewed by the Bioethics Committee of the Faculty of Health Sciences (COBE-FACS). Among the principles presented in the Belmont Report, which were respected by the researchers in this study are the following:

- **Principle of beneficence** because the objective of this research work is to create a benefit in the study population used. That is to say, to the students that make up the Health Sciences of the PUCMM that meet the proposed inclusion and exclusion criteria.
- **Principle of non-maleficence** by not inflicting any type of harm to the research participants, so that their physical and emotional well-being was preserved throughout the work.
- **Principle of autonomy**, since the privacy of the participants was maintained throughout the course of the research. Likewise, it was made known to them that they may be able to withdraw from the research at any time without any problem.
- **Principle of justice**, because all participants who met the inclusion and exclusion criteria were part of the research and received the same respectful treatment without any distinction. In addition, the students to participate are chosen randomly.
- **In order to respect these principles**, an informed consent form was used to explain to the participants everything concerning the research process in which they took part, since the objectives to be achieved and the manner in which it was carried out were detailed in detail.
Results

Of the total sample of 259 students, a total of 156 respondents participated in the study. Of these, 76.9% were female and 23.1% were male. By age, 15.4% belong to the 18-19 age range, 41.7% to the 20-21 age range, 35.3% to the 22-23 age range, 7.1% to the 24-25 age range, and 0.6% to the over 25 age category. Regarding marital status, 96.2% confirmed that they were single, 0.6% were married, 0.6% were in a common-law relationship, and 2.6% were in a dating relationship. By residence status, 14.7% stated that they live alone, 3.8% that they live with a partner, 71.8% that they live with family members, and 9.6% that they share their residence. Within the socioeconomic status, 3.2% confirmed that they have a high socioeconomic status, 87.2% that they have a moderate socioeconomic status and 9.6% a low socioeconomic status. In addition, 68 (43.6%) said they were studying medicine, 18 (11.5%) nutrition and dietetics, 56 (35.9%) stomatology, and 14 (9%) physical therapy.

As for the academic variables, it was found that according to the academic index 15.4% have an academic index within the range of 3.8-4; 27.6% are within the range of 3.7-3.5; 35.3% are within the range of 3.4-3.2 and 21.8% are within the range of less than 3. Within the academic load, according to the number of subjects studied, 6.4% stated that they are taking less than 3 subjects, 53.8% that they are taking 4 to 6 subjects, 35.3% that they are taking 7 to 10 subjects, and 4.5% that they are taking more than 10 subjects. Adding to this, according to the time dedicated to study 8.3% stated that they dedicate less than 20 hours of study to the university per week, 23.1% stated that they dedicate 20 hours per week, 32.1% that they dedicate 21 to 40 hours per week, 27.6% from 41 to 60 hours per week, and 9% more than 60 hours per week.

Table 1
Severity of loneliness among pucmm health sciences students at the santiago de los caballeros campus during the month of october 2022 to january 2023 (n=156)

<table>
<thead>
<tr>
<th>Severity Level</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild loneliness</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Moderate loneliness</td>
<td>29</td>
<td>18.6%</td>
</tr>
<tr>
<td>Moderately high loneliness</td>
<td>121</td>
<td>77.6%</td>
</tr>
<tr>
<td>High loneliness</td>
<td>6</td>
<td>3.8%</td>
</tr>
<tr>
<td>Total</td>
<td>156</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note. Loneliness severity was measured using the UCLA Loneliness Scale. UCLA = University of California at Los Angeles.

Out of a total of 156 respondents, 18.6% showed moderate levels of loneliness, 77.6% moderately high and 3.8% high levels of loneliness. No participants were shown to have high levels of loneliness.

Table 2
Severity of depressive symptomatology of pucmm health sciences students at the santiago de los caballeros campus during the month of october 2022 to january 2023 (n=156)

<table>
<thead>
<tr>
<th>Severity Level</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>98</td>
<td>62.8%</td>
</tr>
</tbody>
</table>
depressive symptomatology
Mild depressive symptomatology 22 14.1%
Moderate depressive symptomatology 20 12.8%
Severe depressive symptomatology 16 10.3%

**Total** 156 100%

*Note.* The level of depression severity was measured using the Beck Depression Inventory.

Of a total of 156 respondents, 62.8% showed minimal depressive symptomatology levels, 14.1% mild depressive symptomatology, 12.8% moderate depressive symptomatology, and 10.3% severe depressive symptomatology.

**Table 3**

*Loneliness severity and residency status of pucmm health sciences students at the santiago de los caballeros campus during the month of october 2022 to january 2023 (n=156)*

<table>
<thead>
<tr>
<th>Level of loneliness</th>
<th>Lives alone (%)</th>
<th>Lives with a partner (%)</th>
<th>Lives with family (%)</th>
<th>Share your residence (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slight</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Moderate</td>
<td>17.4</td>
<td>66.7</td>
<td>15.2</td>
<td>26.7</td>
<td>18.6</td>
</tr>
<tr>
<td>Moderately high</td>
<td>82.6</td>
<td>33.3</td>
<td>81.3</td>
<td>60</td>
<td>77.6</td>
</tr>
<tr>
<td>High</td>
<td>0</td>
<td>0</td>
<td>3.6</td>
<td>13.3</td>
<td>3.8</td>
</tr>
<tr>
<td><strong>Total (%)</strong></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

*Note.* Value of p=0.015

On the part of the relationship of level of loneliness and residence status, it was found that the predominant level of loneliness within the categories of "lives alone", "lives with a family" and "shares residence" was the moderately high level of loneliness. On the other hand, in the "lives with a partner" category, the moderate level of loneliness predominated. Finally, by crossing the variables of loneliness levels with the state of residence using the Chi-square statistical test, a P value of less than 0.05 (P=0.015) was obtained, so that the variables are statistically significant, showing that the level of loneliness is related to the state of residence of the respondents.

**Table 4**

*Severity of depressive symptomatology and socioeconomic status of pucmm health sciences students at the santiago de los caballeros campus during the month of october 2022 to january 2023 (n=156)*

<table>
<thead>
<tr>
<th>Socioeconomic status</th>
<th>Levels of depressive symptomatology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High (%)</td>
</tr>
<tr>
<td>Minimal</td>
<td>86.7</td>
</tr>
<tr>
<td>Slight</td>
<td>0</td>
</tr>
<tr>
<td>Moderate</td>
<td>0</td>
</tr>
<tr>
<td>Serious</td>
<td>13.3</td>
</tr>
<tr>
<td></td>
<td>Moderate (%)</td>
</tr>
<tr>
<td>Minimal</td>
<td>62.7</td>
</tr>
<tr>
<td>Slight</td>
<td>14.7</td>
</tr>
<tr>
<td>Moderate</td>
<td>14</td>
</tr>
<tr>
<td>Serious</td>
<td>8.8</td>
</tr>
<tr>
<td></td>
<td>Low (%)</td>
</tr>
<tr>
<td>Minimal</td>
<td>0</td>
</tr>
<tr>
<td>Slight</td>
<td>14.1</td>
</tr>
<tr>
<td>Moderate</td>
<td>12.8</td>
</tr>
<tr>
<td>Serious</td>
<td>10.3</td>
</tr>
<tr>
<td></td>
<td>Total (%)</td>
</tr>
<tr>
<td>Minimal</td>
<td>62.8</td>
</tr>
<tr>
<td>Slight</td>
<td>14.1</td>
</tr>
<tr>
<td>Moderate</td>
<td>12.8</td>
</tr>
<tr>
<td>Serious</td>
<td>10.3</td>
</tr>
</tbody>
</table>
Levels of loneliness and depressive symptomatology of health science students at PUCMM on the campus of Santiago de los caballeros

The predominant level of depressive symptomatology within the "high" and "moderate" socioeconomic status categories was the minimum level of depressive symptomatology with 86.7% and 62.7% respectively. On the other hand, in the "low" category was both the level of mild and severe depressive symptomatology with 40% each. Finally, by crossing the variables of levels of depressive symptomatology with socioeconomic status using the Chi-square statistical test, a P value greater than 0.05 (P=0.014) was obtained, so that the variables are statistically significant, showing that the level of depressive symptomatology is related to the socioeconomic status of the respondents.

Table 5
Severity of depressive symptomatology and academic index of pucmm health sciences students at the santiago de los caballeros campus during the month of october 2022 to january 2023 (n=156)

<table>
<thead>
<tr>
<th>Academic index based on 4.0</th>
<th>3.8-4.0 (%)</th>
<th>3.7-3.5 (%)</th>
<th>3.4-3.2 (%)</th>
<th>&lt;3 (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>83.3</td>
<td>65.1</td>
<td>56.4</td>
<td>55.9</td>
<td>62.8</td>
</tr>
<tr>
<td>Slight</td>
<td>8.3</td>
<td>11.6</td>
<td>18.2</td>
<td>14.7</td>
<td>14.1</td>
</tr>
<tr>
<td>Moderate</td>
<td>0</td>
<td>4.7</td>
<td>20</td>
<td>20.6</td>
<td>12.8</td>
</tr>
<tr>
<td>Serious</td>
<td>8.3</td>
<td>18.6</td>
<td>5.5</td>
<td>8.8</td>
<td>10.3</td>
</tr>
<tr>
<td>Total (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Note. Value of p=0.047

The level of depressive symptomatology that predominates within the different academic index ranges was the minimum level of depressive symptomatology, with 62.8% of the cases. By crossing the variables of levels of loneliness with the academic index using the Chi-square statistical test, a P value of less than 0.05 (P=0.047) was obtained, so that the variables are statistically significant, showing that the level of depressive symptomatology is related to the academic index of the respondents.

Discussion and conclusions

The general objective of the research was to determine the levels of loneliness and depressive symptomatology of PUCMM Health Sciences students at the Santiago de los Caballeros Campus from January to March 2023. In addition, to evaluate the relationship between depression and loneliness with various sociodemographic and academic variables.

Within the levels of depressive symptomatology that were exposed by the students through the Beck Depression Inventory incorporated in the collection instrument, it was found that 62.8% of the participants showed levels of minimal depressive symptomatology, 12.8% moderate depressive symptomatology, and 10.3% severe depressive symptomatology. These results are in agreement with those obtained in a
study by Shawahna et al. (2020), which showed that, of 268 respondents, more than 50% showed minimal, 14% moderate and 9.1% severe depressive symptomatology. Similarly, according to Azad et al. (2017) in their study, of the 150 students who were included in the analysis, mild depression was observed in 37.46%, moderate to severe depression in 14% of the students and 13.19% presented moderate anxiety. These results corroborate with those obtained, since they all confirm the effect of the high demands of the careers that make up the Health Sciences, which results in high psychological demands on students that lead to different degrees of depressive symptomatology.

In relation to the levels of loneliness that were exposed by the participants, it was revealed that 18.6% presented moderate levels of loneliness, 77.6% moderately high and 3.8% high levels of loneliness. No students showed mild levels of loneliness. These results can be corroborated by a study conducted by Diehl et al. (2018), where it was indicated that 32.4% felt moderately lonely and 3.2% severely lonely. Similarly, in research conducted by Baye Dagnew and Henok Dagne (2019), it was found that approximately half of the respondents showed considerable levels of loneliness, with a prevalence of 49.5%. These studies justify the results obtained in the present research, since students coming from Health Sciences are exposed to factors such as stress, academic demands, residence conditions, and socioeconomic situation that predispose them to develop a certain degree of loneliness.

With respect to residency status, it was shown that those students who claimed to live alone, with a relative or share a residence, showed moderately high levels of loneliness. However, those living with a partner indicated moderate levels. No participants with mild or high levels were shown. From the results obtained, there was evidence of a statistically significant relationship between residence status and loneliness of the respondents (P=0.015). Likewise, it was observed in the study conducted by Hysing et al. (2020), that among the important demographic determinants of loneliness are being female, being single and living alone. This justifies a large part of the data obtained, since careers such as those in the Health Sciences require a high percentage of commitment and sacrifice on the part of the students, who, at the same time, need a stable support network, since there is a high probability of developing high levels of loneliness, especially when the student is living alone.

According to the relationship of the levels of depressive symptomatology with the socioeconomic status of the participants, it was found that those with a high or moderate socioeconomic status showed minimal levels of depressive symptomatology. In contrast, those with low status indicated levels of both mild and severe depressive symptomatology. A statistically significant relationship was shown between both variables (P=0.014). Similarly, research by Carol Vidal, Whitney Brown, and Flavius R. (2018) showed that low socioeconomic status is considered a relevant risk factor for depression and should be considered in mental health counseling. This justifies the results obtained, since this group of people is at high risk of suffering from depression and loneliness, mainly because they are exposed to a number of factors that predispose them to develop high levels of depressive symptomatology, among which are biological aspects and socioeconomic factors, which not only cause negative effects on psychological health, but also on physical well-being.

Regarding the relationship between the academic index and the level of depressive symptomatology, it was found that the minimum level of depressive symptomatology predominated within the different ranges of the academic index, with 83.3% of those with minimal depressive symptomatology were in the 3.8-4.0 range; 65.1% in the 3.7 - 3.5 range; 56.4% in the 3.4 - 3.2 range and 55.9% in those with an index < 3. Therefore, it was
found that the level of depressive symptomatology is related to the academic index of the respondents, these variables being statistically significant (p= 0.047). Similarly, Aljaber (2020) evidenced that the academic index indicated a higher rate of depression among students with a low academic index. This supports the idea that the academic index is related to the level of depressive symptomatology of these students, which can be explained by the large number of academic and psychosocial stressors to which these students are exposed.

The results obtained in the research show that the academic index of the student belonging to Health Sciences is related to their level of depressive symptomatology, however, there is no relationship with the academic load of the student and the level of depressive symptomatology. As both variables pertain to the academic setting, the discrepancy in these results may be due to the smaller sample size, in addition to the fact that different academic stressors that may influence academic load were not taken into account.

Regarding the strengths of the study, it is found that in the Dominican Republic there is not enough research that provides significant data on the levels of depression and loneliness in university students, mainly those of the Faculty of Health Sciences, so this study means a fundamental bibliographic support for universities to create functional strategies to address this health problem. In contrast, among the limitations of the present study, it should be noted that variables related to both depressive symptomatology and loneliness were not taken into account. In addition, it should be noted that there is little literature on the relationship between loneliness and university students related to the field of Health Sciences.

Through the Beck Depression Inventory, it was found that 62.8% of the PUCMM Health Sciences students at the Santiago de los Caballeros Campus showed levels of minimal depressive symptomatology, 12.8% showed moderate depressive symptomatology, and 10.3% showed severe depressive symptomatology. In addition, by means of the UCLA Loneliness Scale, it was found that 18.6% of PUCMM Health Sciences students at the Santiago de los Caballeros Campus had moderate levels of loneliness, 77.6% had moderately high levels of loneliness and 3.8% had high levels of loneliness. In addition, a relationship was found between severity of depressive symptomatology and socioeconomic status, levels of loneliness and state of residence, and severity of depressive symptomatology and academic index. It is suggested for the replication of this study the use of a validated instrument for the evaluation of academic load, also taking into account different academic stressors and a better representativeness of the sample. The data found in this research show that a large proportion of Health Sciences students suffer from depression and loneliness, which is related to several sociodemographic and academic variables. For this reason, it is recommended in the replication of this study to use a validated instrument for the evaluation of academic load, also taking into account different academic stressors, so that the results obtained are more concise and better representative of the reality of the respondent’s academic life. Similarly, it should be taken into account that there are variables not evaluated in the study that may predispose one of the respondents to suffer from high levels of depressive symptomatology or loneliness. A better representativeness of the sample is recommended, since it was originally planned that, of the total number of respondents, 74% would be from Medicine, 5.7% from Nutrition and Dietetics, 13.8% from Stomatology and 6.3% from Physical Therapy. On the contrary, the research showed that 43.6% of the respondents were from Medicine, 11.5% from Nutrition and Dietetics, 35.9% from Stomatology, and 9% from Physical Therapy. The data found in this research show that a large proportion of Health Sciences
students suffer from depression and loneliness, which is related to several sociodemographic and academic variables. For this reason, it is recommended to call the attention of the academic authorities to detect these warning signs in time to be able to intervene in a timely manner and create strategies so that the student feels free to go to the psychology or counseling department to address these mental health problems. It is advisable to promote university extracurricular activities that are more affordable and adapt to the schedule of different students, so that they can create healthy social relationships and release academic stress.

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