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## TECHNOLOGY-ASSISTED PSYCHOLOGICAL INTERVENTIONS: A STUDY ON ANXIETY AND DEPRESSION

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### ABSTRACT

The objective of this study was to gain a comprehensive understanding and make a comparison of the levels of anxiety and depression experienced by psychology practitioners at the Tecnológico de Antioquia. This study is supported by the theory of the following authors: Beck, Casar, Rao y Mehrotra, Ortiz y Ortega, Ruíz, Insfrán, and Ayala, among others. It was based on a quantitative approach that utilised a correlational methodology that did not involve any scientific experimentation. The individuals who took part in this study were students who were in their eighth, ninth, and tenth semesters. Their ages ranged from 18 to 40 years old, and they were all working in the clinical sector as part of their internships. Both the Beck Anxiety Inventory (BAI) and the Beck Depression Inventory (BDI) were utilised to get the necessary information. The findings made it abundantly evident that the levels of anxiety experienced by the technological practitioners from Antioquia grew after they had completed their jobs at the centre. Additionally, it was discovered that the levels of depression also increased. In addition to this, it was shown that there is a positive association between the variables of anxiety and depression.

### INTRODUCTION

According to Guy, in Ramírez and Rice, psychologists' exposure to various environments facilitates the appearance of elements that can degenerate the good state of mental health; this can be due to the tendency to retain emotions, leaving aside one's own needs and concerns. In the professional field, psychologists are exposed to a variety of environments that facilitate the establishment of such elements (Newman et al., 2011). These behaviours have the potential to produce specific features in the psychologist, which can make them more susceptible to the development of certain mental diseases, particularly those that affect the mood, such as anxiety and sadness. Because of this, it is essential to keep a close eye on the conduct of the professional during the entirety of the time that he or she is engaged in the performance of his or her duties (Gitlow et al., 2018).

To effectively treat patients, psychologists need to possess a set of attributes that are essential for their profession. As far as Casari is concerned, these include "skills such as empathy, willingness to help others, self-knowledge, diversity of experiences, and so on." Furthermore, he contends that these are the ones that ensure the psychologist is performing the necessary task; nevertheless, at

the same time, they have the potential to have a detrimental effect on day-to-day living (Kolenik, 2022).

The purpose of this study is to provide a first approach to the mental health status of clinical psychology practitioners at the Tecnológico de Antioquia (Fitzpatrick et al., 2017). The research aims to determine the extent to which this population may be susceptible to experiencing symptoms of anxiety or depression while they are engaged in their professional activities. In addition, it strives to promote the significance of timely attention to the mental well-being of the psychologists who are undergoing training at this university institution. Additionally, it seeks to ensure the quality of the graduates that it produces, which is why we want to explore the following: Before and after your professional practices, what are how anxiety and depression are associated in practitioners of clinical psychology at the Tecnológico de Antioquia- University Institution?

### **OBJECTIVES OF THE RESEARCH**

In the field of clinical psychology, determine the link between anxiety and symptoms of depression. The practitioners of the Tecnológico de Antioquia-University Institution both before and after they have completed their professional responsibilities.

### **WHEN IT COMES TO CLINICAL PSYCHOLOGY, THE CURRENT STATE OF THE ART ON ANXIETY AND DEPRESSION THOSE WHO ARE INVOLVED IN THE TDEA**

In the words of the World Health Organisation, health is defined as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." According to Truffino, J. C., with this globalising attitude about health, it could be deemed an unaffordable good or at the very least difficult to sustain due to the uniqueness of each individual and the features of their environment (Tseng et al., 1998). This demonstrates the significance and relevance of the work that is done in the field of health. As a result of the application of clinical psychology in the field of mental health, it is possible to assert that "There is no health, without mental health."

Even though the prevention, early identification, and treatment of mental diseases are all crucial issues for mental health, this subject continues to be surrounded by stigma, which is why it is difficult to provide the necessary assistance (Provoost et al., 2017).

In Colombia, mental health legislation is issued through Law 1616. The Congress of Colombia decrees that "Mental health is a dynamic state that is expressed in daily life through behaviour and interaction in such a way that allows individual and collective subjects to deploy their emotional, cognitive, and mental resources to navigate daily life, to work, to establish meaningful relationships, and to contribute to the community." This law was the first of its kind in Colombia (Alemi et al., 2014).

In Colombia, the National Mental Health Survey was conducted by the institutions of the Ministry of Health and Social Protection, Colciencias, Pontificia Universidad Javeriana, and Data, Processes and Technology SAS. These organisations had the responsibility of collecting data on mental health in the country (Famarzi et al., 2013). The overarching goal was to "provide updated information about mental health, problems, mental disorders, and access to services in the Colombian population aged 7 years and older, with a particular emphasis on this population's understanding of social determinants and equity." It was discovered as a result of this that one out of every ten Colombians is affected by some kind of mental illness or disorder. Similar to the previous example, Colombia is ranked among the top five countries in terms of certain mental illnesses. Specifically, it is ranked second in terms of impulse control disorder, fourth in terms of anxiety disorders and those related to the use of psychoactive substances, and fifth in terms of mental disorders. Mood (Temkin et al., 2020). According to the sociodemographic data, it was clear that women are more likely to suffer from mood or anxiety disorders, whereas men are more likely to have disorders related to impulse control and drug addiction. This was the case for both genders (O'Driscoll et al., 2010).

There are individual records of health services provision (RIPS) in outpatient consultation, and there are 163,804 cases related to mental and behavioural problems. Furthermore, 57.2% of these cases correspond to women. These five main diagnoses can be found in Bulletin Number 7, which was released by the Municipal Health Secretariat of Medellín (Li et al., 2023).

According to the registry, the most common diagnoses are as follows: 35% (57,574) of patients have mood disorders, 22% (35,563) of patients have neurotic disorders that are secondary to stressful and somatoform situations, third place goes to mental disorders and behaviour caused by the consumption of psychotropic substances, which accounts for 9% (14,287) of patients, the fourth place goes to behavioural and emotional disorders in childhood and adolescence, which

accounts for 8% (12,590), and last place is schizophrenia, schizotypal disorder, and mood disorder. 6% (9,617) of people have deluded ideas (Marks et al., 2003).

However, it is also possible to consider psychology to be a high psychosocial risk because it is an occupation in which the professional maintains a bond very close with the people he cares for, and this is what frequently involves the psychologist's involvement in emotional problems that can have an impact on his own life. Rao and Mehrotra, who were cited by Ortiz and Ortega, state that psychology typically provides a high level of personal satisfaction in its practice (Andrews, Klein, Corboy, et al., 2023).

It is generally accepted that the primary responsibility of a psychologist is to attend to and, if at all possible, steer the various expectations that their clients have, and this can feel more like a demand or pressure than something convenient. According to Varma, in Ortiz y Ortega, psychotherapists typically engage directly with the stress and pressures of their patients. As a result, they are more likely to be subjected to exposure to this syndrome because they actively participate in the struggle of people who are suffering. Not just a great amount of suffering but also severe emotional challenges (Galvin et al., 2022).

With the intention of "determining the frequency of symptoms and anxious and/or depressive pathology among "medical students of the Pontificia Universidad Católica de Chile" and their relationship with other psychosocial variables through a prevalence study using as an instrument an anonymous and voluntary survey of undergraduate students from 1st to 7th year of medicine, Santander, Romero, Hirschfeld, and Zamora developed a study that was titled "Prevalence of anxiety and depression among medical students at the Pontificia Universidad Católica de Chile." The study was conducted by Santander, Romero, Hirschfeld, and Zamora. The study aimed to determine the prevalence of anxiety and depression among medical students at the Pontificia Universidad Católica de Chile. Both the Goldberg Depression Inventory (GHQ) with 12 questions and the Beck Depression Inventory (BDI) with 21 questions were utilized to examine the psychosocial variables. By the responses of 74% of the students, the findings revealed that 39% of them had positive GHQ and 25% of them had positive BDI assessments. A favorable correlation was found between the existence of emotional symptoms and the presence of recent personal events as well as the presence of female sex overall. 12% of students are currently receiving professional treatment, however, only 47.2% of those who have a positive BDI are receiving

treatment. Individuals who are male and those who receive financial assistance in the form of scholarships or credits are at a larger risk of not receiving treatment (Andrews, Klein, Van Nguyen, et al., 2023).

This research was conducted by Ruíz, Insfrán, and Ayala, and it was titled "Research on the Prevalence of Anxiety and Depression in Psychology Students and its Relationship with personality traits." The objective of this research was to describe the prevalence of anxiety and depression, as well as the relationship between these conditions and personality traits, in a university population of Greater Asunción. 69 psychology students were included in the sample. These students were chosen using a probabilistic method from the lists of regular students at the University of the Southern Cone of the Americas (UCSA). Several different tools were utilized, including the Zung Depression Test, the Zung Anxiety Test, and the Gosling Ten-Item Personality Inventory (often known as the TIPI). For example, according to the findings of one study, "anxiety is present in 17% of the sample, and depression is present in 22%." Anxiety has a moderately negative correlation with emotional stability, while low and negative depression has a moderately negative correlation with emotional stability. In terms of associations, anxiety has a moderately negative correlation with emotional stability (Qan'ir & Song, 2019).

Gómez conducted a study that was titled "Prevalence of anxiety in university students." The purpose of this study was "to determine the prevalence of anxiety in students at a private university in Medellín and its association with sociodemographic and academic aspects." A method for conducting a prevalence study was utilized, and it was carried out with a total of two hundred students who were chosen using stratified probability sampling. The Zung scale was utilized to do the screening for anxiety. The reliability of the scale was assessed using Cronbach's  $\alpha$ , and the analysis was conducted using summary measures, frequencies, Mann Whitney U, and chi-square, all of which were carried out in SPSS 21. The findings indicate that "the prevalence of anxiety was 58%, this presented a statistically equal distribution according to sex and age group; no association was found with the training cycle, the academic program, age, credits enrolled, or occupation." The findings also indicate that there was no correlation between the training cycle, the academic program, age, or occupation. Anxiety, on the other hand, was found to be statistically low among those pupils from middle-class families (Dissanayaka et al., 2023).

In conclusion, Zazueta completed a research project that was titled "Depression, coping, and academic performance in Psychology students." The objective of this study was to "identify the presence of indicators of depression and coping skills by analyzing the differences in the variables between academic performance groups in psychology students." Using the BDI-II depression scale and the CSI Coping Strategies Inventory, a non-probabilistic convenience sample was utilized, with a total of 181 students, an average age of 21.59 years, and a prevalence of 72.9% for the female gender. The students were examined using the CSI Coping Strategies Inventory. Student's T is one example of the data that includes statistics. The findings showed that the level of prevalence of depression among students is high, and, in turn, coping skills are low; Furthermore, the hypothesis of differences between the variables by academic performance group was scarce, which is likely that performance is a possible protective factor, being a way to distract from a reality that students perceive as annoying.

## **DEPRESSION**

When a patient who is experiencing depression symptoms presents a scheme that is known as a cognitive triad, the patient establishes in this a perspective of denial in himself, the environment, and the subsequent. When he perceives himself to be inadequate, inept, maybe lacking, and unworthy of the environment in which he operates, he assumes that he has suffered losses and damages, most of which are caused by his habits or his life experience. While at the same time being sure that the future will specifically hold failure and frustration, he is also sceptical. In a similar vein, these persons have a sense of hopelessness, as they believe that the world that is approaching them will be full of problems that they are unable to control. As a result, they reply or answer with passivity, resigned to the fact that they cannot change the circumstances (Rice et al., 2012).

In the same way that Beck does, the author Frank Hollon describes the current pathology as "the syndrome in which numerous categories develop, such as affective, somatic, cognitive, and behavioural." When the interpretation, processing, and analysis of data, as well as excessive generalizations, are taken into consideration, this is the primary source of uncertainty in which aspects are activated in remaining qualities.

When university students participate in internships, they are typically confronted with difficulties, pressures, and concerns that exert an impact on their daily routine and may cause them to

experience feelings of being overwhelmed. Other elements that come up are also stressful triggers, such as, for instance, not having specified sleep routines, living alone for the first time, and having little time available, all of which need to be allocated in the most appropriate way in the practices that have been stated above. Academic courses or hobbies such as playing video games or using social networking sites.

Taking into account stressful and possibly frustrating components such as the fact that they are adapting to new responsibilities and schedules, that they are in the stage of discovering how to be part of the new social circles to which they must adapt, the economic circumstances they have and the relationships intimate relationships to which they are linked, meaning that all these factors together may contribute to the development of possible depression in students.

Depression is a mood disease that is formed as a condition in which there is evidence of the restlessness that a person generates around himself, reflecting emotions of inadequacy, appreciating views of guilt, and so on. This has been proved via consistent research, and it has been established that depression is associated with students and health professionals. As a result, how individuals express and provoke feelings of pessimism towards themselves and the society that surrounds them is determined by knowledgeable authors like as Beck, Shaw, Emery, and Rush, who are cited in Ortega, Barros, and Cantero. Encompasses on a broad scale, as well as what is subsequent or forthcoming.

## **ANXIETY**

A review of the referential framework reveals that all psychological currents have been concerned with conducting a comprehensive investigation of worried pathology. This has resulted in the discovery of a variety of contributions that offer the evolution, delimitation, and definition of the idea. The cognitive behavioural approach, which is one of the scientific currents that has been responsible for diving into the subject to build good adherence to existing therapy procedures, is the focus of this study. His outstanding contribution consisted of observing the cognitive processes that intervene between an aversive stimulus and the subject's anxiety response, which altered the stimulus-response paradigm proposed by the proposed behavioural theory. You can delve into the role that cognitive variables play in increasing and maintaining anxiety. His contribution changed the paradigm.



According to Lang, the unidimensional model of activation was disproved by the discovery of differences in reaction times and responses to anxiety. This was demonstrated with the three-dimensional theory, which he used to conceptualize the disturbing anxiety condition. The three-dimensional theory is a resolution for activation that utilizes a triple response system: physiological, cognitive, and observable. This system has discordance (modification of the inter and intra-system measurements of the individual) and dyssynchrony (changes produced at different times) with each other, which results in different types of responses and, consequently, different types of processing of the stimulus or information.

Following this, Clark and Beck, as reported by Díaz, established a theory known as "Beck's cognitive theory." This theory posits that anxiety is a deep response system that includes behavioural, physiological, affective, and cognitive components. These components are engaged when individuals perceive situations that are either unpleasant or beyond their control.

The additional expectations that the internship period entails, the triggered changes in the reduction of economic activity and social danger that Colombia is presently experiencing, the high unemployment rate, and the lack of time all pose a threat to the mental health of a significant number of psychology practitioners. When taking into consideration the three-dimensional theory that was discussed before, this response mechanism is primarily noticeable in three different aspects: Sleeplessness, anxiety issues, a loss of short-term memory, and an inability to concentrate are all psychological manifestations that can be attributed to this condition. On the physiological level, it typically presents itself through the weakening of the immune system, damage to the digestive system, dizziness, exhaustion, headaches, tremors or spasms, muscle issues, and finally, on the behavioural level, it is represented through procrastination, smoking, and addictions. All of these symptoms are indicative of the condition.

Because of this, anxiety becomes pathological over time and begins to interfere with aspects of personal adjustment, such as job, interpersonal connections, and educational training. As a result, anxiety ceases to be adaptive and instead becomes pathological. When it comes to this work, the university stage brings with it new experiences, a great deal of responsibilities, and a greater degree of autonomy, in addition to emotional and social confrontations. An investigation that was carried out in Paraguay revealed that "the prevalence of anxiety and depression in psychology students is

17% and 22% respectively, these data are widely higher than those expected in the general and subclinical population."

## **METHODOLOGY**

Due to the condition of the various variables that are proposed to be researched, the current research was carried out using a quantitative approach. This is because these variables allow for the gathering of data through psychological tests, which can then be analyzed statistically. Furthermore, the purpose of this study is to assess the degree of anxiety and sadness that is experienced by practitioners of the Tecnológico de Antioquia both before and after the procedure in question, to put the initial hypotheses to the test. This will be accomplished by measuring the correlation between the variables and expressing the results in numerical form. This is the reason why the research employs a correlational methodology, which is a non-experimental approach. This methodology is distinguished by the search for a relationship between the variables, establishing how a change in one of them can alter the other. This method enables us to observe themes that cannot be altered because they are hypothetical constructs.

Using the Beck Anxiety Inventory (BAI) and the Beck Depression Inventory (BDI), both of which contain 21 items each, the data-collecting process was carried out. Both of these instruments were used. The population that took part in this study consisted of a total of 34 individuals, all of whom expressed their willingness to take part in the study. These individuals needed to be in the eighth, ninth, and tenth semesters of their psychology studies. As part of the selection process, candidates must meet the following criteria: they must be between the ages of 18 and 40, they must be students at the Tecnológico de Antioquia, they must be enrolled, they must be taking the professional practice subject, and they must have psychological orientation for users as their function in the practice centre. The following are the criteria that will not allow participants to participate in the current study: being a minor, not accepting informed consent, not having participated in internships within the past six months, and/or participating in internships without being able to provide psychiatric counselling.

## **DISCUSSION OF THE FINDINGS AND ANALYSIS**

In this session, the analysis of the data that was collected is given, allowing us to evaluate the association between anxiety and depression in Clinical Psychology Practitioners of the

Tecnológico de Antioquia-University Institution before and after their professional practices. First, a descriptive analysis of the variables is presented in this manner, and then, as a last step, a correlational analysis between the variables of anxiety and depression is offered. Because of this, it was easy to incorporate the findings gained with the theories and the background information.

Table 1: Pretest and Posttest Anxiety Results of psychology students at Tecnológico de Antioquia in their clinical professional practices.

Pre Anxiety	No	7	<b>20,6</b>
	Mild	8	<b>23,5</b>
	Moderate	5	<b>14,7</b>
	Serious	14	<b>41,2</b>
Post Anxiety	No	8	<b>23,5</b>
	Mild	6	<b>17,6</b>
	Moderate	5	<b>14,7</b>
	Serious	15	<b>44,1</b>

There is a descriptive analysis of the anxiety variable shown in Table 1, which serves as a starting point for the examination of the results and the response to the particular objectives. It demonstrates that before beginning their professional practices in clinical psychology, 41.2% of the practitioners reported experiencing extreme levels of anxiety. This percentage rises to 44.1% after they have completed internships at the same centre for a semester.

According to the findings of a study that was conducted in 2016 at the Universidad Cooperativa de Colombia, which investigated the level of anxiety that was experienced by psychologists working in the city of Barrancabermeja, it was discovered that "the characteristics and symptoms of anxiety of the students are accentuated." The aforementioned practical exercise has the potential to cause acute anxiety, along with swings in mood, when one is just beginning their professional career.

Table 2: Pretest and Posttest Depression Results of psychology students in their professional clinical practices.

Pre depression	No	1 5	<b>44, 1</b>
	Mild	7	<b>20, 6</b>
	Moderate	1 1	<b>32, 4</b>
	Serious	1	<b>2,9</b>
Post-depression	No	1 4	<b>41, 2</b>
	Mild	9	<b>26, 5</b>
	Moderate	8	<b>23, 5</b>
	Serious	3	<b>8,8</b>

When it comes to depression and how it relates to the specific objectives, Table 2 presents a descriptive analysis of the depression variable. This analysis reveals that before beginning their professional practices in clinical psychology, 2.9% of the practitioners exhibited severe levels of depression. This percentage rises to 8.8% after they have completed internships at the same centre for a semester. This coincides with the findings of the research that was conducted by Cuamba and Zazueta, which involved a sample size of 181 students. In their findings, they discovered that the level of depression that these students exhibit is concerning. Additionally, it was observed that these students do not possess adequate tools to deal with challenging circumstances that cause them to exhibit these symptoms.

In the examination of the connection between anxiety and depression, which can be found in Table 3, it is possible to observe that there is a positive correlation between the two, indicating that the severity of depression increases in proportion to the increase in this score. It was discovered that there was a more significant influence when the correlations in the post-instant were analyzed:

Contrary to what was said by Ruíz, Insfrán, and Ayala, in their study conducted with 69 students, they discovered that "anxiety is found in 17% of those surveyed and depression, for its part, in

22%." This finding shows that anxiety is more prevalent than depression. There is a moderate and negative association between anxiety and emotional stability, as well as a low and negative correlation between depression and emotional stability, and a moderate and negative correlation between responsibility and emotional stability's emotional stability.

## **CONCLUSIONS**

The current study indicated that the number of cases of severe anxiety experienced by TdeA practitioners increased by 3% after they had completed their work at the centre. Similarly, it was discovered that the number of cases of severe depression increased by 6%. Both of these findings were considered to be significant. The presence of a positive connection between anxiety and depression was also detected. This indicates that when the anxiety variable grows, the depression variable also increases, with a bigger correlation being found in the post-test. Additionally, the correlation was shown to be stronger in the post-test.

The conclusion that can be drawn from this is that, following this increase, it is essential to continuously evaluate and provide support for the mental health of practitioners. This is because the anxiety rates that were indicated throughout the test are rather high, and this can result in the development of unsuccessful coping techniques.

Even when there is support, the risk that the development of their practices implies for students is evident. The reliability levels of the tests that were applied were highly satisfactory, which indicates that the results were internally consistent. This allowed us to conclude that the correlation between anxiety and depression was positive. Within the context of this support, it is essential for students to comprehend the significance of self-care activities and to be assisted in comprehending the inherent values of anxiety and depression that they might acquire via their work.

## **RECOMMENDATIONS:**

The following recommendations are intended for the student population who participated in this research process and for future research efforts of the same sort. These recommendations are based on the results that were collected, and they are made in consideration of this study.

- Conduct a thorough investigation of how emotional weariness, also known as burnout syndrome, interacts and impacts various practitioners in their training work, while also highlighting the correlation between their levels of anxiety and depression.

It is recommended that future research should involve a broader population to collect a sufficient number of data. This will enable us to gain a comprehensive understanding of the many situations that practitioners encounter during their training process.

It is important to compare the differences that exist between anxiety and depression among the various practitioners of TdeA in the various areas where they perform their functions, such as educational, organizational, clinical, and so on.

- Create a timetable that includes specific rooms that are designated for the hours that they are required to spend in their internship centres, as well as their academic life and personal life. In this manner, there will be planning that will make it possible to create places that are dedicated to individuality, and in addition to that, there will be complete devotion to the difficulties that are associated with the internship process.

As part of the internship process for psychology students, the educational institution should implement mental health sessions that are designed to support the internship process. These sessions should focus on the clinical field and give way to what is commonly referred to as support for support.

When you start experiencing levels of anxiety or sadness that are not within your ability to control, it is important to seek psychological therapy. This is because, despite being students of Psychology, they are not in a category that is exempt from the requirement of seeking the counsel of a mental health professional that falls within the exception range.

- Extend the findings obtained from this study to the educational community. This will ensure that, in addition to being aware of them and having them within reach, there is additional research that enables the development of the topic from the perspective of analyzing and improving the aspects that involve the students of the university institution. Tecnológico de Antioquia about the clinical psychological procedures that exist within the institution.

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