

Chest pain and anguish in depressive and anxious patients and its importance to the psychopathology

Dor no peito e angústia em pacientes depressivos e ansiosos e sua importância na psicopatologia

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Resumo: Recentemente, muitos doentes com depressão e ansiedade têm relatado aperto no peito e angústia. Esta pesquisa teve como objetivo investigar distinções entre doentes com e sem angústia em termos de sintomatologia e comorbidades e descobrir se os doentes com depressão e com ansiedade apresentam mais angústia do que os doentes que não apresentam depressão e ansiedade. Participaram da investigação 100 pacientes, 69% do sexo feminino e 29% do sexo masculino. Concluiu-se que o sentimento de angústia está mais associado à depressão do que à ansiedade, sendo mais frequente no sexo feminino. As comorbidades mais frequentes entre os doentes com angústia são a somatização, os medos, o humor depressivo, os sintomas gastrointestinais e neurovegetativos. As variáveis mais relacionadas com angústia foram o sexo, o score HAM-A reduzido, a somatização do BSI, a hostilidade do BSI, a obsessão compulsão do BSI, a idade e a depressão MINI. O Sentimento de angústia está mais próximo da depressão do que da ansiedade.

Palavras-chave: Angústia; Ansiedade; Depressão.

Abstract: Recently, many patients with depression and anxiety have reported chest tightness and anguish. This research aimed to investigate distinctions between patients with and without anguish in terms of symptomatology and comorbidities and to find out whether patients with depression and with anxiety have more anguish than patients who do not have depression and anxiety. The sample included 100 patients, 69% being female and 29% being male. Anguish is more associated with depression than to anxiety, being more frequent in females. Most frequent comorbidities among patients with anguish are somatization, fears, depressive mood, gastrointestinal and neurovegetative symptoms. The variables more related to anguish were gender, reduced HAM-A score, BSI somatization, BSI hostility, BSI obsession compulsion, age and MINI depression. Anguish is more near to Depression than to anxiety.

Keywords: Anguish; Anxiety; Depression.

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Introduction

Many times, human beings are struck by a strange feeling of emptiness, an intense malaise, a deep restlessness that causes them to feel oppression in the chest, a tightness in the chest and the impression that they are being suffocated. In itself, the term anguish has a high weight, since its synonyms are agony, affliction, torment, martyrdom, torture, which leads to the feeling of oppression, emptiness, hole, sword, pain, compression that can present intensity high, however it is not considered pathological (Szuhany & Otto, 2020).

The origin of the word anguish goes back to the Latin verb *angere*, which has the meaning of squeezing, compressing (especially the throat), strangling, choking, suffocating; from the Greek term “*koinê* or *coine*” which means to squeeze, strangle; from the Indo-Germanic ‘*angh*’ which means tight, painfully contracted; from the ancient Egyptian ‘*anj*’, ‘*ankh*’ or ‘*ank*’ which means cross with wings or Egyptian cross and which gives rise to ‘*angor*’ which, in turn, gives the notion of narrowing (Johnson & Ghassemzadeh, 2022).

In the scientific field, anguish arose when the German word *angst* was inserted by Sigmund Freud. However, when translating Freudian works into English, James Beaumont Strachey translated the word *angst* into anxiety, to obtain better acceptance in psychiatric circles. *Angst* was a term commonly used in German and could be translated by some equally common English words, such as “fear”, “fright”, “alarm”. Thus, anxiety would also have a common meaning in everyday use, connected with the word *angst* (Feraý et al., 2023). Anguish and the feeling of tightness or oppression located in the thoracic region could have an emotional connection (Klauss, 2024).

Over the last few decades, conceptual confusion has been observed when approaching concepts such as fear, panic, anxiety and anguish. The feeling of anguish, which focuses on events occurring in the present moment, is accompanied by sensations in the thoracic region that can present themselves in the form of pain or tightness and, due to the fact that many patients with affective and anxiety disorders report this experience, anxiety thus became the target of great clinical concern. This research consisted of verifying differences in symptoms and comorbidities in relation to the experience of anguish, and finding out that anguish is more related to depression than to anxiety.

Method

This is an exploratory study that sought differences in symptoms and comorbidities in relation to the experience of anguish, and if anguish is more related to depression than to anxiety.

Sample

The study involved 100 patients treated at the general, anxiety and adult affective disorders outpatient clinics of the Institute of Psychiatry of the Faculty of Medicine of the University of São Paulo, with 35 patients belonging to the group with anguish, 50 to the group without anguish and 15 to the doubt group, that is, to the group of patients who declared the experience of anguish, but were unable to describe it precisely

Instruments

Sociodemographic questionnaire

Developed with the objective of collecting information regarding the demographic and sociocultural variables of the participants, namely, Age (years), Gender (Male, Female, Other); Education level (Complete Higher Education, Incomplete Higher Education, Complete Secondary Education, Incomplete Secondary Education, Complete Primary Education, Incomplete Primary Education; Marital Status (Single, Married, Divorced, Widowed, No Answer).

Brief Symptom Inventory

Brief Symptom Inventory (BSI) (van Dellen, 2024) evaluates psychopathological symptoms related to nine different dimensions and culminates in a summary evaluation consisting of three Global Indices. The nine dimensions as follows: Somatization: includes items 2, 7, 23, 29, 30, 33 and 37; Obsessions-Compulsions: includes items 5, 15, 26, 27, 32, 36; Interpersonal sensitivity: includes items 20, 21, 22 and 42; Depression: includes items 9, 16, 17, 18, 35, 50; Anxiety: includes items 1, 12, 19, 38, 45, 49; Hostility: includes items 6, 13, 40, 41 and 46; Phobic Anxiety: includes items 8, 28, 31, 43 and 47; Paranoid Ideation: includes items 3, 14, 34, 44 and 53; Psychoticism: includes items 3, 14, 34, 44 and 53. For each BSI subscale, scores were significantly higher than the norms. The nine subscales exhibited acceptable-to-good Cronbach's alpha coefficients, varying from 0.733 for psychoticism to 0.875 for depression. Overall, the reliability of the entire instrument proved to be excellent (alpha coefficient=0.972). Furthermore, all BSI subscales as well as BSI synthetic indexes correlated with a nomophobia in a significant way. Stratifying the population according to the severity of nomophobia (mild, 206 individuals, 51.1% of the sample; moderate, 167 subjects, 41.4%; and severe, 30 individuals, 7.4%), the GSI score could distinguish ($P<0.001$) between mild and moderate (0.99 ± 0.71 vs 1.32 ± 0.81) and between mild and severe (0.99 ± 0.71 vs 1.54 ± 0.79) nomophobia, although not between moderate and severe nomophobia ($P>0.05$). Similar patterns could be found for the other subscales of the BSI. Finally, looking at the fit indexes, the second-order 9-factor model best fit the data compared with the Derogatis 1-factor model.

Defense Styles Inventory

Ego defense mechanisms, which is a psychoanalytic concept, have been defined as an indication of how individuals deal with conflict (Gallani et al., 2020). The defensive style is considered an important dimension of the personality structure of the individual and became the first psychoanalytic concept recognized by the DSM-IV as a guide for future research. 18 As for the psychometric properties of the DSQ-40, the internal consistency of the mature, neurotic, and immature defense styles was 0.70, 0.61, and 0.83, respectively. Additionally, the 3 defense styles had acceptable split-half reliability and test-retest reliability coefficients. Considering the concurrent validity, the mature defense style was negatively correlated with the symptoms of depression and anxiety, whereas the immature defense style was positively correlated with these symptoms. The neurotic defense style, on the other hand, had a positive correlation with anxiety symptoms, but did not reveal a significant correlation with depressive symptoms. The examination of criterion validity revealed results were consistent with our expectations. Significant differences were found in the expected direction between the control and clinical groups.

Hospital Anxiety and Depression Scale

The Hospital Anxiety and Depression Scale (HADS) is divided into two subscales: the anxiety subscale (tension or contraction, fear, worry, difficulty relaxing, butterflies or tightness in the stomach, restlessness, panic) – HADS-A and the depression subscale (anhedonia, difficulty finding humor when seeing funny things, deep sadness, slowness in thinking and performing tasks, loss of interest in taking care of one's appearance, hopelessness, lack of pleasure when watching television programs, radio or reading something) – HADS-D. Both contain seven items interspersed between questions regarding anxiety and depression. The factors and their corresponding items are shown below: Anxiety symptoms: items: 1, 3, 5, 7, 9, 11, 13. Depression symptoms: items: 2, 4, 6, 8, 10, 12, 14. All items are classified on a 4-point scale ranging from 0 to 3. Through these defined values, the HADS subscales can indicate the presence of anxiety or depression disorders at different levels: 0-7, normal; 8-10, light; 11-14, moderate; 15- 21, serious. This scale, after studies and validation for the Brazilian population and the Portuguese language, has been widely used. The questionnaire is self-administered, and the evaluated subject can count on the help of the evaluator, who in the case of this work was always the same, if he did not understand the content of some questions. Twelve studies assessed the psychometric properties of the HADS-Total and its subscales HADS-Anxiety and HADS-Depression. High-quality evidence supported the structural and criterion validity of the HADS-A, the internal consistency of the HADS- T, HADS-A, and HADS-D with Cronbach's alpha values of 0.73-0.87, and before-after treatment responsiveness of HADS- T and its subscales (minimal clinically important difference = 1.4-2; effect size = 0.45-1.40). Moderate-quality evidence supported the test-retest reliability of the HADS-A and HADS- D with excellent coefficient values of 0.86-0.90.

Hamilton Anxiety Scale

The Hamilton Anxiety Scale (HAM-A) contains fourteen items distributed in two groups, the first group with seven items related to symptoms of anxious mood; Insomnia; depressed mood: loss of interest, mood swings, depression, early awakening;) and the second group, also composed of seven items, related to the physical symptoms of anxiety (motor somatization; sensory somatization; cardiovascular symptoms; respiratory symptoms; gastrointestinal symptoms; genitourinary symptoms and neurovegetative symptoms). The HAM-A was tested for reliability and validity in two different samples, one sample (n = 97) defined by anxiety disorders, the other sample (n = 101) defined by depressive disorders. The reliability and the concurrent validity of the HAM-A and its subscales proved to be sufficient. Internal validity tested by latent structure analysis was insufficient. The major problems with the HAM-A are that (1) anxiolytic and antidepressant effects cannot be clearly distinguished; (2) the subscale of somatic anxiety is strongly related to somatic side effects. The applicability of the HAM-A in anxiolytic treatment studies is therefore limited. More specific anxiety scales are needed.

State-Trait Anxiety Inventory

The State-Trait Anxiety Inventory (STAI) is a self-report scale that depends on the subject's conscious reflection in the process of evaluating their anxiety state, as well as their personality

characteristics. State anxiety scores can vary in intensity over time, are limited to a particular moment or situation, and individuals with state anxiety tend to become anxious only in particular situations (Knowles & Olantunji,

2020). It is characterized by unpleasant feelings of tension and apprehension, consciously perceived, and can vary in intensity, depending on the danger perceived by the person and the change over time. Trait anxiety refers to relatively stable individual differences in the tendency to react to situations perceived as threatening with increases in the intensity of the anxiety state. It has a lasting characteristic in the person because the personality trait is less sensitive to environmental changes and because these remain relatively constant over time. The STAI-T has a valid and reliable psychometric instrument in terms of screening for anxiety disorders in PWEs. In the epilepsy setting, STAI-T maintains adequate sensitivity, acceptable specificity, and high NPV but low PPV for diagnosing anxiety disorders with an optimum cutoff score ≥ 52 .

Mini International Neuropsychiatric Interview

The Mini International Neuropsychiatric Interview (MINI) (Mohammed, Makki, & Ghuloum, 2023) was developed at the PitiéSalpêtrière Hospital in Paris and the University of Florida in the United States and consists of a brief questionnaire lasting 15-30 minutes, compatible with the diagnostic criteria of the DSM-III-R and ICD-10 (different versions), which can be used by doctors after a quick training (1h to 3h). The MINI is organized into independent diagnostic modules, designed to optimize the sensitivity of the instrument, despite a possible increase in false positives. Two versions of the MINI were developed to address the specific diagnostic objectives of different contexts of use: 1) intended primarily for use in primary care and clinical trials, the MINI comprises 19 modules exploring 17 DSM-IV Axis I disorders, Suicide Risk and Antisocial Personality Disorder.

Procedure

While waiting for care, patients were invited to participate in the research, received an explanation about its objective and signed the Free and Informed Consent Form. Patients responded to a Mini International Neuropsychiatric Interview (MINI) diagnostic instrument containing the DSM-5 diagnostic criteria for anxiety disorders and affective disorders and a questionnaire to identify the presence of anguish. Additionally, patients were asked to answer the Brief Inventory of Psychopathological Symptoms (BSI), the Defense Styles Inventory (DSQ-40), the Hospital Anxiety and Depression Scale (HADS), the Hamilton Anxiety Scale (HAM -A) and the State-Trait Anxiety Inventory (STAI). Patients were also asked to record a statement about anguish. This recording was listened to and analyzed to determine whether the patients were experiencing anguish or not.

Data analysis

The statistical analysis included two phases: descriptive analysis and inferential analysis. In the scope of descriptive analysis, the first step consisted of comparing the groups with and without anguish with numerical and categorical variables. The second stage consisted of examining the variables of the questionnaires. In the third stage, a correspondence analysis was carried out to visually investigate possible associations between anguish, depression and anxiety. The fourth stage included the comparison of the anxiety and depression symptoms most associated with anguish. The fifth stage of the descriptive analysis focused on a sensitivity analysis, which consisted of

relocating the doubt group to the anguish group to investigate changes in the interpretations of the results of the comparison of the anguish variable with the MINI Anxiety and the MINI Depression. The inferential analysis consisted of two stages. The first stage focused on reducing the size of some questionnaires and constructing more discriminative latent variables in relation to groups with and without anguish. In the second stage, the variables with the greatest predictive power for discomfort were identified.

Results

In the first stage of the descriptive analysis, it was concluded that the variables BSI Somatization, gender, level of education, HAM-A Fears, HAM-A Depressive Mood, HAM-A Gastrointestinal Symptoms and HAM-A Neurovegetative Symptoms were the variables that presented the greatest difference in the comparison between groups with anguish and without anguish in terms of numerical and categorical variables. From the examination of the questionnaire variables, it was observed that anxiety affects women more than men. The descriptive level of the Chi-Square test ($p=0.041$) also contributes to the evidence of this association between anguish and gender.

Regarding the level of education, there was an indication of difference between the groups ($p = 0.048$), since the group without distress had a higher percentage of people with completed higher education. Regarding the BSI questionnaire, only the distribution of the somatization variable was notably different between the groups. The median of the group with anguish was higher, in addition, the p value of the Wilcoxon Mann Whitney test was significant ($p = 0.020$). Regarding the HAM-A, the variables fear, depressed mood, gastrointestinal symptoms and neurovegetative symptoms showed significant differences for the anxiety variable (individual significance level, Cronbach's α of 0.05), with the group with anguish being the one that presented higher values. of punctuation. An analysis was also conducted to compare the symptoms of anguish and depression (using the MINI as a diagnosis) most associated with anguish to discover what symptoms both disorders have in common with anguish. The Wilcoxon Mann Whitney and Chi-square tests show the association between the other variables and each of the three mentioned. Between anguish and depression, the BSI variables Somatization and HAM-A neurovegetative symptoms were considered significant, and between anguish and anxiety only the HAM-A variable fears were significant.

Tabela 1
Significance comparative table.

Variable	Anguish (P-value)	Anxiety (P-value)	Depression (P-value)
BSI Somatization	0.02*	0.826	0.001*
BSI Obsession Compulsion	0.926	0.02*	0.001*
BSI Interpersonal Sensitivity	0.828	0.023*	0.008*
BSI Depression	0.724	0.407	0.001*
BSI Anxiety	0.72	0.032*	<0.001*
BSI Hostility	0.571	0.208	<0.001*
BSI Phobic Anxiety	0.684	0.024*	0.001*
BSI Paranoid Ideation	0.621	0.321	0.001*
BSI Psicoticism	0.71	0.126	0.004*
DSQ Passive Aggression	0.341	0.069	0.049*
DSQ Acting Out	0.775	0.313	0.019*
DSQ Dissociation	0.539	0.002*	0.949
DSQ Somatization	0.693	0.015*	0.04*
HADS Anxiety	0.828	0.03*	0.015*
HADS Depression	0.504	0.224	0.005*
STAI Trait	0.761	0.002*	0.002*
HAM-A Total	0.129	0.065	0.003*

Tabela 2

Comparative table of the significance (Chi-square test) of symptoms and defense mechanisms of anguish with those of anxiety and depression

Variable	Anguish (P-value)	Anxiety (P-value)	Depression (P-value)
HAM-A Anxious Mood	0.953	0.054*	0.625
HAM-A Tension	0.417	0.15	0.043*
HAM-A Fears	0.003*	0.03*	0.184
HAM-A Depressed Mood	0.049*	0.231	0.084
HAM-A Respiratory Symptoms	0.323	0.132	0.029*
HAM-A Gastrointestinal Symptoms	0.025*	0.444	0.946
HAM-A Neurovegetative Symptoms	0.018*	0.494	0.023*
Depression Diagnosis	0.305	0.28	-
Anxiety Diagnosis	> 0.999	-	0.28
Other Diagnosis	0.228	> 0.999	0.588

A sensitivity analysis was also performed, reassigning the doubt group as with anguish, to investigate changes in the interpretations of the results of the comparison of the anxiety variable with the MINI Anxiety and the MINI Depression. It is noteworthy that there are no differences in interpretations, that is, there was no impact of the relocation of the doubt group on the results of the investigation of the relationship between anguish and anxiety or depression. The same relocation of the doubt group was carried out to check if there were changes in the main symptoms associated with anxiety. In the inferential analysis, item response theory (IRT) was used to reduce the size of the HAM-A and DSQ-40 questionnaires. For HAM-A, two scores were generated using IRT. The first (Hamilton TRI Score) was applied to all 13 variables, the second (Reduced Hamilton TRI Score) was applied only to the variables most significant for distress in the Chi-square tests and also of interest to the researcher, namely: HAM - A Fears, Depressed Mood HAM-A, Gastrointestinal Symptoms HAM-A and Neurovegetative Symptoms HAM-A. Two Scores were also constructed by simple sum: HAM-A Sum Score and HAM-A Reduced Sum Score, the latter being constructed by the variables mentioned above. It is possible to see two points by observing. The first is that the HAM-A questionnaire does have a relationship with the anxiety variable, the second is that the difference between the two methods is clear, in which the IRT proved to be superior to simple addition in terms of discriminatory power groups. The DSQ-40 has 3 latent variables according to the literature: Neurotic DSQ, Immature DSQ and Mature DSQ, which are described in the section dedicated to the description of the variables. The DSQ, both through the sum and the TRI, appears to have no relationship between the anguished and non-anguished groups.

To investigate whether anguish is more related to depression than to anxiety, a logistic regression model was fitted in which the response (dependent) variable was defined as having or not having anguish depending on many independent variables considered in the study. The model

was therefore adjusted to the no doubt group, for 85 observations, with the discomfort variable being the response variable and the following 23 explanatory variables: TRI mature DSQ-40 score; immature DSQ-40 TRI score; DSQ-40 neurotic TRI score; reduced Hamilton TRI score; IDATE State; IDATE Trait; MINI Depression; MINI anxiety; MINI other diagnosis; BSI somatization; BSI obsession compulsion; BSI depression; BSI anxiety; hostility from BSI; BSI phobic anxiety; BSI paranoid ideation; BSI psychoticism; BSI interpersonal sensitivity; HADS anxiety; Age; Gender; School grade; Civil status. The variables selected were the following: Gender, Reduced Hamilton Score, BSI Somatization, BSI Hostility, BSI Obsession Compulsion, Age, and MINI Depression. Higher BSI somatization scores are also associated with greater odds of distress; With each one-point increase in this domain, the probability of anguish increases by 9.4%, holding the other variables fixed. A 1-year increase in age reduces the expected probability of experiencing anguish by 4.6%, holding other variables constant. The higher the HAM-A score, the greater the expected probability of having discomfort, that is, with each increase of one point in this score there is an increase in the expected probability of suffering from discomfort of 185%, considering the other variables in the model. constant. For BSI Hostility, for every increase of 1 point, the expected probability of experiencing anguish decreases by 15.5%, holding the other variables fixed. For BSI Obsession Compulsion, with each increase of 1 point, the probability of having anguish decreases by 12.6%, keeping the other variables fixed. The expected probability of women experiencing anguish is higher compared to men (women's probability is 2.76 times greater than men's), holding other variables constant. The estimates obtained indicate that the expected probability that people with depression experience discomfort is greater in relation to those who do not present this symptom (the probability that people with depression is 3.64 times greater in relation to people without depression), keeping the rest of the variables fixed.

Tabela 3

Estimates of the coefficients of the Logistic Regression model

Parameters	Stimate	Standard Error	P-value
Intercept	2.7809	1.359	0.041
Depression (Ref. - Without depression)	1.294	0.773	0.094
BSI Somatization	0.090	0.052	0.086
Age	-0.044	0.018	0.013
Score HAM-A TRI Reduced	1.047	0.419	0.013
BSI Hostility	-0.143	0.067	0.033
BSI Obsession Compulsion	-0.118	0.065	0.070
Sex (Ref. - Male)	1.016	0.586	0.083

Tabela 4

Odds ratios of the logistic regression model with respective 95% confidence intervals

Variable	Reference	Stimate (RC)	Confiance (95%)
Diagnosis	No depression	3.640	[0.843 ; 18.363]
BSI Somatization	1 point increase	1.094	[0.989 ; 1.219]
Age	1 point increase	0.956	[0.921 ; 0.989]
Score HAM-A TRI Reduced	1 point increase	2.849	[1.297 ; 6.856]
BSI Hostility	1 point increase	0.866	[0.753; 0.982]
BSI Obsession Compulsion	1 point increase	0.888	[0.776 ; 1.001]
Sex	Male	2.763	[0.897 ; 9.165]

Discussion and conclusions

The main objectives of this investigation were to prove the hypotheses that there are differences in symptomatology and comorbidities regarding the experience of anguish, and that anguish is more linked to depression than to anxiety. Based on the first hypothesis, it was concluded that the symptoms that are most linked to anxiety are: BSI somatization, HAM-A fears, HAM-A depressed mood, HAM-A gastrointestinal symptoms and HAM-A neurovegetative symptoms. Regarding the second hypothesis, it appears that of the 82 patients with depression, 87.2% had distress, while of the 69 patients with anxiety, 69.2% had distress, indicating a higher frequency of distress among patients with depression.

Regarding the hypothesis of differences in symptoms and comorbidities between patients with distress and patients without distress, we can verify that the experience of distress is related to somatic symptoms that include thoughts and emotional states in conflict and that cause pain in the body such as aches and pains. head, back and chest, stiffening of the limbs,

tachycardia, among others. Among patients who experienced distress, chest pain was the most frequent somatic symptom. Regarding the variables of the Hamilton Anxiety Scale that showed significance, a significant relationship was noted between the variable HAM-A depressed mood and the variables HAM-A gastrointestinal symptoms and HAM-A neurovegetative symptoms with regard to the experience of anguish. Another variable from the Hamilton Anxiety Scale that proved to be significant between patients with anguish and patients without anguish was the HAM-A fear variable. Since patients who reported the experience of anxiety complained of pain or tightness in the chest region, fear in this context is not fear of a specific object, such as an animal, natural environment or specific situation., but rather the fear of dying due to the experience of anguish. Anguish is more related to the fear of sudden death (Nohria &Antono, 2024). In relation to the gastrointestinal and neurovegetative symptoms which, together with the depressed mood symptom which proved to be significant in the context of the experience of anguish, the first involve problems that are related to the anguish, namely the burning sensation or heartburn, abdominal fullness, nausea and vomiting, while among the neurovegetative symptoms, the problems that are more

related to distress include pain, malaise, discomfort, burning, heaviness, tightness, swelling or distension in a specific organ, which in this case is the chest region. The Hamilton Anxiety Scale was also subjected, based on the application of Item Response Theory to dimensionality reduction to find more interesting properties than the simple sum of correct answers and it was concluded that, after dimensionality reduction, i.e. after selecting the HAM-A variables that are most related to anguish, these appear to be more significant compared to the simple sum of correct answers, indicating that, especially the variables HAM-A depressed mood, HAM-A fears, HAM -A gastrointestinal symptoms and HAM-A neurovegetative symptoms have significance regarding the experience of distress. The greater significance of the Hamilton Anxiety Scale variables, as well as the BSI somatization variable, is also proven with the application of the Binomial Logistic Regression Model, which serves to select the independent variables and predict which group a patient is more likely to belong to. based on the independent variables.

As for the second hypothesis, which concerns the greater frequency of anguish among patients with depression compared to patients with anxiety, this can be proven based on the statements given by patients, which refer more to depression than to anxiety. Anxiety is a feeling that causes bodily sensations such as tightness in the chest in situations that occur in the present moment, and the vast majority of patients declared having experienced anguish in present moments, such as loneliness, death of relatives, divorce, unemployment, high workload, work, difficulties in carrying out a task, sadness and thoughts about suicide, fear and insecurity, hopelessness, loss of control, problems related to work, family differences, despair, difficulty crying, physical illnesses, depression, travel, lack of emotional control, sad news, disappointments, bullying, parental rejection, political problems, feelings of oppression, crises due to psychiatric illnesses, stress, emotional pressure, accidents in the family, among others. Another result that reinforces the relationship between anguish and depression is given by the comparative analysis of significance, whose objective was to verify which variables are in common between anguish and depression and between anguish and anxiety, in which it was found that between anguish and depression, the common variables were BSI somatization and HAM-A neurovegetative symptoms, while between anguish and anxiety, only the HAM-A fear variable was common. This result reinforces the theory that anguish is more related to depression than to anxiety, since anguish is a feeling that encompasses somatic manifestations, concluding that it is a visceral and physical feeling, while anxiety is a more psychic feeling. Based on the binomial logistic regression model, it is also possible to verify the greater significance among patients with depression compared to patients with anxiety regarding the experience of anguish, in which it can be concluded that, after applying the model, patients with depression have 3.64 more likely to experience anguish than patients with anxiety.

Another result indicating a greater relationship between anguish and depression than between anguish and anxiety concerns gender, in which it is found that anguish has a greater presence in females, despite the sample being made up mostly of women. However, judging by the proportion of women and men who experienced anguish, it can be concluded that anguish exerts greater force among women. The relationship between the higher prevalence of anguish among females and depression is justified by the higher prevalence of depressive symptoms among women, since data indicates that women have twice as much depression as men and try twice as much to suicide. According to data from the Brazilian Ministry of Health, depression affects 14.7% of women, while men are affected by 7.3%.

Future research can also stimulate conceptual analysis in the areas of psychiatry, psychology and other areas that are related to psychopathology, particularly that related to neurosciences, since the use of complex concepts in basic research, without their prior analysis, becomes sterile, which may be one of the causes for the scarce results in translational studies in psychopathology/neurosciences. It is also recommended that research be carried out with a larger database, as well as using more accurate strategies for diagnosing anguish that provide greater precision and greater discrimination of groups with and without anguish and respective predictors.

In summary, the present study suggests that the variables that were most related to anxiety were: gender, reduced HAM-A score, BSI somatization, BSI hostility, BSI, obsession-compulsion, age and MINI depression. The inferential analysis showed evidence towards the main hypothesis of the investigation: "Depression is more related to anguish than anxiety". It is worth highlighting the selection of the variable MINI depression using the stepwise method, which showed a significant association (at a level of 10%), with the interpretation that people with depression are more likely to experience distress compared to people who do not have depression. However, in the selection of variables most associated with distress, no variable related to anxiety was statistically associated with distress, with the exception of the domains of the Hamilton Anxiety Scale.

The variables that showed the most relationships with anxiety are the following: Gender, Reduced HAM-A Score, BSI Somatization, BSI Hostility, BSI Obsession Compulsion, Age and MINI Depression.

The inferential analysis showed evidence towards the main hypothesis of the study: "Depression is more related to anguish than anxiety". It is worth highlighting the selection of the MINI Depression variable using the stepwise method, which showed a significant association (at a level of 10%), with the interpretation that people with depression are more likely to experience anguish compared to people who do not have depression. However, in the selection of variables most associated with anguish, no variable related to anxiety was statistically associated with anguish, with the exception of domains from the HAM-A questionnaire.

The present study suffers from some limitations. First, socioeconomic status or ethnicity are not measured, but to our knowledge, they have not previously been associated with the experience of distress. Secondly, the Portuguese version of the Psychopathological Symptom Inventory was used to the detriment of the lack of validation of this scale for the Brazilian population.

With this investigation, we intended to show that anguish is more related to depression than to anxiety, as the feeling of anguish consists of a psychological perception that is characterized by changes in mood, loss of inner peace, pain, insecurity, guilt, discomfort and sadness, that is, anguish is the combination of emotional and physical issues that can prevent the individual from carrying out their day-to-day tasks and trigger isolation. Chest tightness, which is the main physical symptom of anguish, can also be present in cases of anxiety, however in anxiety, chest tightness is linked to the feeling of escape and the thought of worry.

References

- Feray, S., Lemoine, A., Aveline, C., & Quesnel, C. (2023). Pain management after thoracic surgery or chest trauma. *Minerva Anestesiol*, 89(11):1022-1033. doi: 10.23736/S0375-9393.23.17291-9.
- Gallani, M.C., Proulx Belhumeur, A., Almeras, N., et al. (2020). Development and Validation of a Salt Food Frequency Questionnaire (FFQ-Na) and a Discretionary Salt Questionnaire (DSQ) for the Evaluation of Salt Intake among French-Canadian Population. *Nutrients*, 13(1):105.
- Johnson, K., & Ghassemzadeh, S. (2022). Chest Pain. StatPearls Publishing.
- Klauss, V. (2024). Chest Pain. *MMW Fortschr Med*, 166(6):46-49. doi: 10.1007/s15006-024-3720-y.
- Knowles, K.A. & Olatunji, B.O. (2020). Specificity of trait anxiety in anxiety and depression: Meta-analysis of the State-Trait Anxiety Inventory. *Clin Psychol Rev*, 82:101928. doi:10.1016/j.cpr.2020.101928
- Mohammed, M., Makki, I., Ghuloum, S. (2023). Psychiatry in Qatar. *BJPsych Int*, 20(4):79-81. doi: 10.1192/bji.2023.23.
- Nohria, R., Antono, B. (2024). Acute Coronary Syndrome. *Prim Care*, 51(1):53-64. doi: 10.1016/j.pop.2023.07.003.
- Szuhany, K.L. & Otto, M.W. (2020). Assessing BDNF as a mediator of the effects of exercise on depression. *J Psychiatr Res*, 123:114-118.
- van Dellen, E. (2024). Precision psychiatry: predicting predictability. *Psychol Med*, 54(8):1500-1509. doi: 10.1017/S0033291724000370.