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Depressive and anxious patients feeling anguish after toracic pain: The relevance to the psychiatry

Abstract

Introduction: Anguish is defined as a sensation of precordial chest tightness or oppression that has an emotional origin.

Objetive: To investigate whether anguish is more related to depression or to anxiety, and to identify which variables or symptoms are most predictive of the state of anguish.

Methods: Were surveyed 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, Brazil.

Results: An important depression diagnostic variable (MINI Depression) was selected in the model (at the 10% level) and its interpretation corroborates the central hypothesis of the study. Correspondence analysis also points to clues in the direction of the research hypothesis. As for the second objective, under the same logistic model, the following variables were shown to be related to the state of anguish: Gender, Reduced HAM-A Score, BSI Somatization, BSI Hostility, BSI Obsession-Compulsion, Age and MINI Depression.

Conclusion: The results of this research highlight the need for promoting a more criterious investigation about the role of anguish in mental health.

Keywords: anguish, toraxic pain, anxiety, depression

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Introduction

Sometimes negative life events lead to the experience of intense discomfort that triggers a physical feeling of tightness, pain or oppression in the chest. Anguish in itself has a strong connotation, since those who experience the feeling describe the experience as agony, affliction, torment, martyrdom, torture. Thus, anguish can be defined as a feeling that causes discomfort in the chest region that translates into physical sensations or bodily manifestations such as tightness, pain, pain, hole, suffocation or compression in the chest.

Anguish is a feeling that causes a discomfort in the chest region that translates into physical sensations or bodily manifestations such as tightness, pain, pain, hole, suffocation or compression in the chest.[1] Etimologically, anguish comes from the latin Angustus which means narrowing.[2] Over the last few decades, conceptual confusion has been observed in the approach to concepts such as fear, panic, anxiety and anguish.[3] 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.[4] 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.

Methods

Design of the study

This investigation consisted of an exploratory study where the prevalence of anguish in psychiatric patients and the discrimination of clinical differences were investigated.

Participants

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.

Measurements

Data were collected using the following questionnaires: a 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), the Brief Inventory of Psychopathological Symptoms (BSI)[5], the Defense Styles Inventory (DSQ-40)[6], the Hospital Anxiety and Depression Scale (HADS),[7] the Hamilton Anxiety Scale (HAM-A),[8] the State-Trait Anxiety Inventory (STAI),[9] and the Mini International Neuropsychiatric Interview (MINI).[10]

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 distress. In addition, patients were asked to respond to the Brief Symptom Inventory (BSI), Defensive Style Questionnaire (DSQ-40), Hospital Anxiety and Depression Scale (HADS), Hamilton Anxiety Rating Scale (HAM-A), and the Health Inventory. state-trait anxiety (STAI). Patients were also asked to record a statement regarding the experience of anguish. This recording was listened to and analyzed to determine whether or not the patients were experiencing anguish.

Statistical 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. The third stage included the comparison of the anxiety and depression symptoms most associated with anguish. The fourth 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.

Ethical considerations

Ethical approval was obtained by the Research Ethics Commitee of the Institute of Psychiatry of Hospital of Clinics of Faculty of Medicine of University of São Paulo (Brazil), on January 27, 2021: CAAE: 37028419.2.0000.0068.

Results

The first stage of the descriptive analysis consists of comparing the groups with anguish and without anguish with numerical and categorical variables. Tables were created with a descriptive summary of the quantitative variables and the frequencies and percentages of qualitative variables in the groups with anguish, without anguish and doubt. Also, graphs were created to facilitate data visualization. Regarding the examination of the variables of the sociodemographic questionnaire, it is observed that anguish 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 anxiety and gender. Regarding marital status, it was found that there were no notable differences between the groups, with the sample being mostly single people.

Regarding the level of education, it appears that there is an indication of the difference between the groups (p = 0.048), since the group without anguish has a higher percentage of people with completed higher education. The mean and median age in the group with anguish is lower, however, in the Wilcoxon Mann Whitney test, so the difference is not significant (p = 0.248). For the MINI questionnaire, the contingency tables that show the volumes of the MINI variables within the levels of the variable anguish do not show a significant relationship between anguish and depression, anxiety or other diagnoses, a result that is reinforced by the Chi-square test.

Regarding the BSI questionnaire, only the distribution of the somatization variable was noticeably different between the groups. The median of the group with distress is higher, in addition, the p-value of the Wilcoxon Mann Whitney test was significant (p = 0.020). As for the DSQ-40, no ego defense mechanism appears to be related to anxiety. Wilcoxon Mann Whitney tests also did not indicate significant differences. Regarding the HADS, for both anxiety and depression, no evidence was found regarding a pattern of association with anguish.

Regarding the HAM-A, the variables fears, depressive mood, gastrointestinal symptoms and neurovegetative symptoms showed significant differences for the variable anxiety (individual significance level, Cronbach's α of 0.05), with the group with anxiety being the one with higher values of punctuation. As for the STAI questionnaire, both the trait STAI and the state STAI also showed no relationship between anxiety and anguish. In summary, the variables that showed the greatest relationship with anguish were: gender, BSI somatization; HAM-A fears, depressed mood, gastrointestinal symptoms, and neurovegetative symptoms.

No variable related to anxiety was associated with anguish in this first descriptive context. As for depression, only the HAM-A variable, "depressive mood", was significant. An analysis to compare the symptoms of anxiety and depression (using the MINI as a diagnosis) most associated with anguish was also carried out to discover what symptoms the two disorders have in common with anguish. The Wilcoxon Mann Wtihney and Chi-square tests (Table 1, 2) show the association between the other variables and each of the three mentioned. Between anguish and depression, the variables BSI Somatization and HAM-A neurovegetative symptoms were considered significant, and between anguish and anxiety, only the HAM-A variable fears was significant.

A sensitivity analysis was also carried out, reallocating the doubt group as having anxiety, in order to investigate changes in the interpretations of the results of the comparison of the variable anxiety with the MINI Anxiety and MINI Depression. It is notable 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 whether there were changes in the main symptoms associated with anguish. The HAM-A symptom of depressive mood is no longer significant, and the variable HAM-A cardiovascular symptoms becomes significant.

Table 1 Significance comparative table

Variable	Anguish (P-Value)	Anxiety (P-Value)	Depression (P-Value)
BSI Somatization	0,02 *	0,826	0,001*
BSI Obsessio-Compulsion	0,926	0,02 *	0,001*
BSI Interpersonal Sensibility	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 Psychoticism	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*
IDATE Trait	0,761	0,002*	0,002*
HAM-A Total Score	0,129	0,065	0,003*

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Table 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 Anxiety 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 Depressive 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*
MINI Depression	0,305	0,28	-
MINI Anxiety	> 0,999	-	0,28
MINI Other Diagnostic	0,228	> 0,999	0,588

Inferential analysis consists of three steps. The first stage focuses on reducing the size of some questionnaires and the construction of latent variables, possibly more discriminative in relation to groups without anguish and anguish, and for this purpose the Item Response Theory was used. The second stage aims to identify which variables have the greatest predictive power for anguish. For this purpose, a binomial logistic regression model was adjusted using the stepwise method for variable selection, adopting the minor AIC criterion. The third consisted of selecting variables using Item Response Theory for questionnaires associated with psychiatric disorders.

For HAM-A, two scores were generated through IRT. The first (Hamilton TRI Score) was applied to all 13 variables, the second (Reduced Hamilton TRI Score) was applied only to the most significant variables for anguish in the Chi-square tests and also of interest to the researcher, namely: HAM-A Fears, HAM-A Depressive Mood, HAM-A Gastrointestinal Symptoms and HAM-A Neurovegetative Symptoms. 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 conclude two points. The first is that the HAM-A questionnaire in fact has a relationship with the variable anxiety, the second is that the difference between the two methods is clear, in which the IRT proved to be superior to the simple sum in terms of discriminatory power. of the 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 via the sum and via the TRI, appears to have no relationship between the groups with and without anguish.

To investigate whether anguish is more related to depression than to anxiety, a logistic regression model was adjusted in which the response variable (dependent) was defined as having or not having anguish depending on many independent variables considered in the study. The model was adjusted without the doubt group, therefore, for 85 observations, with the variable anguish being the response variable and the following 23 explanatory variables: DSQ-40 mature TRI score; immature DSQ-40 TRI score; TRI neurotic DSQ-40 score; reduced Hamilton score TRI; IDATE State; IDATE Trait; MINI depression; MINI anxiety; MINI other diagnosis; BSI somatization; BSI obsession compulsion; BSI depression; BSI anxiety; BSI hostility; BSI phobic anxiety; BSI paranoid ideation; BSI psychoticism; BSI interpersonal sensitivity; HADS anxiety; Age; Gender; Education level; Marital status. The selected variables were the following: Gender, Reduced Hamilton Score, BSI Somatization, BSI Hostility, BSI Obsession Compulsion, Age and MINI Depression. Tables 3, 4 present the coefficient estimates of the logistic regression model and the corresponding odds ratios, respectively.

Table 3 Estimates of the coefficients of the Logistic Regression model

Parameters	Estimate	Stantard Error	P - value
Intercept	27,809	1,359	0,041
MINI 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
HAM-A TRI Score Reduced	1,047	0,419	0,013
BSI Hostility	-0,143	0,067	0,033
BSI Obsession Compulsion	-0,118	0,065	0,070
Gender (Ref. – Male)	1,016	0,586	0,083

Table 4 Odds ratios of the logistic regression model with respective 95% confidence intervals

Variable	Reference	Estimate (RC)	Confidence (95%)
MINI	Without 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
Gender	Male	2,763	[0,897 ; 9,165]

Higher BSI Somatization scores are also associated with greater chances of having anguish, with each increase of one point in this domain the chance of anguish increases by 9.4%, keeping the other variables fixed. A 1-year increase in age reduces the expected chance of experiencing distress by 4.6%, keeping other variables constant. The higher the HAM-A Score, the greater the expected chance of having distress, that is, with each increase of one point in this Score there is an increase in the expected chance of anguish of 185%, considering the other variables in the model constant. For BSI Hostility, for each increase of 1 point, the expected chance of experiencing anguish decreases by 15.5%, keeping the other variables fixed. For BSI Obsession Compulsion, with each increase of 1 point, the chance of having anguish decreases by 12.6%, keeping the other variables fixed. The expected chance of women experiencing anguish is greater compared to men (the chance for women is 2.76 times greater than that for men), considering other variables constant. The estimates obtained indicate that the expected chance of people with depression experiencing distress is greater in relation to those who do not present this symptom (the chance for people with depression is 3.64 times greater in relation to people without depression), maintaining the other variables fixed.

Discussion and conclusion

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 anguish,

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while of the 69 patients with anxiety, 69.2% had anguish, indicating a higher frequency of anguish among patients with depression.

Regarding the hypothesis of differences in symptoms and comorbidities between patients with anguish and patients without anguish, we can verify that the experience of anguish 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 anguish, chest pain was the most frequent somatic symptom. Relatively to the variables of the HAM-A 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 anxiety and patients without anxiety was the HAM-A fear variable. 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 anguish include pain, malaise, discomfort, burning, heaviness, tightness, swelling or distension in a specific organ, which in this case is the chest region.

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. 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 distress than patients with anxiety.

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Conflicts of interest

The authors declare they have no conflicts of interest.

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Refereences

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