



# Anguish as a Clinical Marker of Depressive Vulnerability: Evidence from Outpatient Populations

Fernando Filipe Paulos Vieira<sup>1\*</sup> and Francisco Lotufo Neto<sup>2</sup>

## Abstract

**Background:** Anguish is characterized by a sensation of precordial tightness or oppression with an emotional origin. Unlike anxiety, which is oriented toward the future, anguish is experienced in the present as a state of mental pain and agony. It is believed to involve distinct autonomic, physiological, and biochemical responses compared to anxiety and depression.

**Objective:** To investigate whether depression is more strongly associated with anguish than anxiety, and to identify the variables or symptoms most predictive of the state of anguish.

**Methods:** A binomial logistic regression model was applied to examine associations between anguish, depression, and anxiety. Diagnostic and psychometric variables were included, such as the MINI Depression module, Hamilton scores, and Brief Symptom Inventory (BSI) subscales. Correspondence analysis was also performed to explore relationships among categorical variables.

**Results:** The logistic model revealed statistically significant evidence that depression is more closely related to anguish than anxiety. The diagnostic variable MINI Depression was significant at the 10% level, supporting the central hypothesis. Additionally, under the same model, the following variables were significantly associated with the state of anguish: Gender, Reduced Hamilton Score, BSI Somatization, BSI Hostility, BSI Obsession-Compulsion, Age, and MINI Depression. Correspondence analysis provided further evidence consistent with these findings.

**Conclusions:** Depression appears to be more strongly associated with the experience of anguish than anxiety. Several demographic and psychometric factors, particularly depressive symptoms and somatization-related dimensions, may help identify individuals prone to states of anguish. These results suggest the need to differentiate anguish from anxiety and depression in both clinical assessment and theoretical models.

**Keywords:** Anguish; Thoracic pain; Anxiety; Depression; Mental health.

## Introduction

Negative life events can trigger intense discomfort that manifests not only emotionally but also physically, often in the thoracic region. This discomfort may present as a sensation of tightness, pain, pressure, or suffocation in the chest [1]. Anguish can be defined as an emotional state that generates distress in the chest area, with somatic manifestations including tightness, pain, a feeling of emptiness, suffocation, or compression [2]. The term

### Affiliation:

<sup>1</sup>PhD in Clinical Psychology, University of São Paulo, Brazil

<sup>2</sup>Associate Professor, University of São Paulo, Brazil

### \*Corresponding author:

Fernando Filipe Paulos Vieira, PhD in Clinical Psychology, University of São Paulo, Brazil

**Citation:** Fernando Filipe Paulos Vieira, Francisco Lotufo Neto. Anguish as a Clinical Marker of Depressive Vulnerability: Evidence from Outpatient Populations. *Journal of Psychiatry and Psychiatric Disorders*. 9 (2025): 304-313.

**Received:** October 31, 2025

**Accepted:** November 08, 2025

**Published:** November 15, 2025

anguish originates from the Greek angor, which in Latin became angustus, meaning “narrowness” or “constriction” [3]. This etymology reflects the dual nature of anguish, combining an intense emotional experience with a somatic sensation of constriction. Historically, the German term angst was introduced into the scientific sphere and translated into English as “anxiety” [4, 5]. While this translation was practical, it does not capture the specificity of anguish as a clinical phenomenon distinct from general anxiety or situational fear. In recent decades, conceptual confusion has emerged around emotions and states such as fear, panic, anxiety, and anguish [6]. Anguish differs from anxiety in that it centers on present-moment distress and is accompanied by specific somatic manifestations in the thoracic region, whereas anxiety typically involves future-oriented worry. Clinically, this distinction is relevant, as many patients with affective and anxiety disorders report experiences of anguish that impact daily functioning, making it a key target for assessment and intervention [7]. Despite its clinical relevance, research on anguish has been limited compared to anxiety or depression. Studying anguish addresses an epistemological and clinical gap: understanding a specific emotional and somatic phenomenon that can be distinguished from anxiety and that is closely related to depressive symptoms. This has direct implications for differential diagnosis, psychometric assessment, and the development of more precise therapeutic interventions. In this study, we analyzed differences in symptoms and comorbidities related to the experience of anguish, anticipating that anguish is more closely associated with depression than with anxiety. Additionally, we examined specific variables measured using psychometric instruments selected for their ability to capture both the somatic and emotional dimensions of anguish. This approach provides an integrative framework linking the philosophical and historical conceptualization of anguish with its clinical manifestation and empirical evaluation.

## Material and Methods

### Type of Study

A quantitative, descriptive, and correlational study was performed.

### Participants

The sample consisted of 35 patients in the group with anguish, 50 in the group without anguish, and 15 in the “doubt group,” defined as patients who reported experiencing anguish but were unable to describe it precisely. Participants were classified into these groups based on their self-reports during a structured clinical interview. It should be noted that this classification reflects subjective accounts rather than an objective diagnostic criterion, and caution is warranted in interpreting group differences (see Table 1). The study employed a convenience sampling strategy, and the sample size was determined based on feasibility rather than formal

power calculations, which limits the generalizability of the findings. Ethical approval for the study was obtained from the institutional review board (IRB) prior to data collection, and all participants provided informed consent. Psychometric instruments included multiple standardized measures of anxiety and depression, chosen to capture complementary dimensions of symptomatology; however, the rationale for including each specific scale is based on their established validity and relevance in prior psychiatric research. It is important to highlight that the small size of the doubt group (n = 15) limits the statistical power of comparative analyses involving this group. Consequently, comparisons should be interpreted cautiously, and the doubt group was primarily included to explore variability in self-reported anguish rather than to serve as a fully powered analytical category.

**Table 1:** Sociodemographic characteristics of patients with/without anguish and doubt (n=100).

| Sociodemographic variables |                                | Percentages (%) |        |
|----------------------------|--------------------------------|-----------------|--------|
| Age (Mean)                 |                                |                 | 44.54  |
|                            | (Min)                          |                 | 17     |
|                            | (Max)                          |                 | 77     |
| Sex                        | Female                         | 69 (69.0%)      |        |
|                            | Male                           | 29 (29.0%)      |        |
|                            | Other                          | 2               | -2.00% |
| Education                  | Complete Higher Education      | 47 (47.0%)      |        |
|                            | Not completed Higher Education | 21 (21.0%)      |        |
|                            | Complete high school           | 19 (19.0%)      |        |
|                            | Incomplete high school         | 2 (2.0%)        |        |
|                            | Complete primary education     | 2 (2.0%)        |        |
| Marital status             | Incomplete primary education   | 9 (9.0%)        |        |
|                            | Single                         | 47 (47.0%)      |        |
|                            | Married                        | 32 (32.0%)      |        |
|                            | Divorced                       | 13 (13.0%)      |        |
|                            | Widower                        | 7 (7.0%)        |        |
|                            | No answer                      | 1 (1.0%)        |        |

### 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 (BSI):** The Psychopathological Symptom Inventory refers to the Portuguese adaptation of

the BSI – Brief Symptom Inventory by L. Derogatis. This inventory evaluates psychopathological symptoms related to nine different dimensions and culminates in a summary evaluation consisting of three global indices [8]. The nine dimensions, as described by Derogatis [9], are as follows:

- Somatization: includes items 2, 7, 23, 29, 30, 33, and 37;
- Obsessions-Compulsions: includes items 5, 15, 26, 27, 32, and 36;
- Interpersonal Sensitivity: includes items 20, 21, 22, and 42;
- Depression: includes items 9, 16, 17, 18, 35, and 50;
- Anxiety: includes items 1, 12, 19, 38, 45, and 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.

**Defense Styles Inventory (DSQ-40):** Ego defense mechanisms, a central concept in psychoanalytic theory, have been defined as indicators of how individuals manage internal conflicts and external stressors [10]. The Defense Styles Inventory (DSQ-40) is a self-report instrument designed to assess these mechanisms empirically, classifying them into different categories of defensive styles. The defensive style represents a significant dimension of an individual's personality structure and reflects the predominant ways of coping with psychological distress. It became the first psychoanalytic construct formally recognized by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) as a relevant dimension for guiding future research on personality and psychopathology [11]. The DSQ-40 distinguishes three broad defense categories—mature, neurotic, and immature—which together provide a psychometrically grounded assessment of ego defenses and their adaptive value. This instrument has been widely used in both clinical and non-clinical samples, supporting its reliability and cross-cultural validity [10,11].

**Hospital Anxiety and Depression Scale (HADS):** The HADS is divided into two subscales: The anxiety subscale (HADS-A), which evaluates tension or contraction, fear, worry, difficulty relaxing, butterflies or tightness in the stomach, restlessness, and panic; and the depression subscale (HADS-D), which assesses 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, and lack of pleasure when watching television programs, listening to the radio, or reading something. 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.

**Hamilton Anxiety Scale (HAM-A):** The HAM-A contains fourteen items distributed in two groups. The first group, composed of seven items, evaluates symptoms of anxious mood, including insomnia, depressed mood, loss of interest, mood swings, early awakening, and general feelings of depression. The second group, also composed of seven items, assesses the physical symptoms of anxiety, including motor somatization, sensory somatization, cardiovascular symptoms, respiratory symptoms, gastrointestinal symptoms, genitourinary symptoms, and neurovegetative symptoms.

**State-Trait Anxiety Inventory (STAI):** The State-Trait Anxiety Inventory (STAI) is a self-report instrument that relies on the subject's conscious reflection when evaluating both their transient anxiety state and their stable personality characteristics. The STAI differentiates between state anxiety (A-State) and trait anxiety (A-Trait) components, allowing a comprehensive assessment of the individual's anxiety experience [12]. State anxiety refers to a temporary emotional condition characterized by consciously perceived feelings of tension, apprehension, and heightened autonomic nervous system activity. Its intensity may fluctuate over time and is typically related to specific situations or stressors. Individuals with high state anxiety experience anxiety predominantly in response to situational demands [12]. In contrast, trait anxiety represents a relatively stable tendency to perceive a wide range of situations as threatening and to respond to them with elevated levels of state anxiety. It is considered a more enduring personality dimension, less sensitive to environmental changes, and tends to remain consistent across time and contexts [12,13].

The STAI is one of the most widely used measures in both clinical and research settings for assessing anxiety, offering robust psychometric properties and cross-cultural applicability [1, 2].

**Mini International Neuropsychiatric Interview (MINI):** The Mini International Neuropsychiatric Interview (MINI) was developed by researchers from the Pitié-Salpêtrière Hospital in Paris and the University of Florida [14]. It is a brief, structured diagnostic interview designed to assess major psychiatric disorders according to the Diagnostic and

Statistical Manual of Mental Disorders (DSM-III-R and later DSM-IV) and the International Classification of Diseases (ICD-10). The administration time typically ranges from 15 to 30 minutes, and it can be conducted by clinicians following brief training sessions of approximately one to three hours. The MINI is organized into independent diagnostic modules, each corresponding to a specific psychiatric disorder. This modular structure was designed to optimize the instrument's sensitivity, even at the cost of a potential increase in false positives, thus ensuring that clinically relevant cases are not missed during screening. Two main versions of the MINI were developed to meet different diagnostic objectives: The standard MINI, intended primarily for use in primary care and clinical research, includes 19 modules assessing 17 DSM-IV Axis I disorders, as well as Suicide Risk and Antisocial Personality Disorder. The MINI-Plus, an extended version, offers greater diagnostic precision and is suitable for specialized clinical settings and research protocols requiring comprehensive assessment. The MINI is recognized for its brevity, reliability, and international validation, and it has become one of the most widely used structured diagnostic tools in psychiatry and psychology.

### Data Collection Procedures

While waiting for care, patients were invited to participate in the research, received an explanation about its objectives, and signed the Free and Informed Consent Form. Patients completed the Mini International Neuropsychiatric Interview (MINI), a diagnostic instrument that evaluates psychiatric disorders according to DSM-III (or DSM-5, depending on the version used) criteria for anxiety and affective disorders, as well as a questionnaire designed to identify the presence of distress. In addition, patients were asked to respond to the Brief Symptom Inventory (BSI), Defense Style Questionnaire (DSQ-40), Hospital Anxiety and Depression Scale (HADS), Hamilton Anxiety Rating Scale (HAM-A), and the State-Trait Anxiety Inventory (STAI). Patients were also asked to record a statement regarding their experience of anguish; these recordings were later listened to and analyzed to determine whether or not the patients were experiencing anguish.

### Data processing and 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

### Descriptive Analysis

The first stage of the descriptive analysis involved comparing the groups with anguish and without anguish across numerical and categorical variables. Descriptive tables were created to summarize the quantitative variables, while frequencies and percentages were reported for qualitative variables across the groups with anguish, without anguish, and the doubt group. In addition, graphs were generated to facilitate data visualization.

Regarding sociodemographic variables, anguish was more prevalent among women than men. This association was supported by the Chi-Square test ( $p = .041$ ), providing statistical evidence for a relationship between anguish and gender. No notable differences were observed in marital status between groups, with the sample predominantly composed of single participants. For educational level, there was a suggestion of group differences ( $p = .048$ ), as the group without anguish had a higher proportion of participants with completed higher education. Although the mean and median age were lower in the group with anguish, the difference was not statistically significant according to the Wilcoxon-Mann-Whitney test ( $p = .248$ ).

Analysis of the MINI questionnaire revealed that contingency tables displaying the distribution of MINI variables across the levels of anguish did not show a significant relationship between anguish and depression, anxiety, or other diagnoses. This finding was reinforced by the Chi-Square test.

A correspondence analysis was also conducted on the MINI data to visually explore potential associations among the groups formed by the contingency table composed of anguish, MINI Anxiety, MINI Depression, and MINI other diagnoses. It was observed that the group with depression (D\_S) was positioned closer to the group with anguish (Ang\_S) than to the group with anxiety (A\_S), suggesting that anguish may be more strongly associated with depression than with anxiety. Similarly, the group without depression (D\_N) was close to the group without anxiety (Ang\_N).

It is important to note that these groups were defined based on the presence or absence of corresponding diagnostic categories in the MINI, rather than as mutually exclusive classifications. Therefore, participants could

simultaneously belong to more than one category (e.g., presenting both depressive and anxious symptomatology). The original classification based on anguish was retained, and the correspondence analysis served to explore its relative proximity to the MINI diagnostic dimensions rather than to redefine the initial grouping. These results are illustrated in Figure 1.

Regarding the BSI questionnaire, only the distribution of the somatization variable differed notably between the groups. The median value was higher in the group with anguish, and the Wilcoxon-Mann-Whitney test indicated a significant difference ( $p = .020$ ). For the DSQ-40, no ego defense mechanism appeared to be associated with anguish, and the Wilcoxon-Mann-Whitney tests did not reveal any significant differences. With respect to the HADS, no evidence was found for an association between either anxiety or depression and anguish. This finding suggests that the experience of anguish may represent a distinct emotional construct not fully captured by conventional measures of anxiety or depressive symptoms. It highlights the need for more specific instruments or qualitative approaches to explore the experiential and phenomenological dimensions of anguish beyond standardized symptom scales. Analysis of the HAM-A revealed that the variables fears, depressive mood, gastrointestinal symptoms, and neurovegetative symptoms differed significantly with respect to anxiety,

using an individual significance level (Cronbach's  $\alpha = .05$ ). In each case, participants in the anxiety group scored higher. Regarding the STAI questionnaire, neither trait nor state anxiety showed any association with anguish.

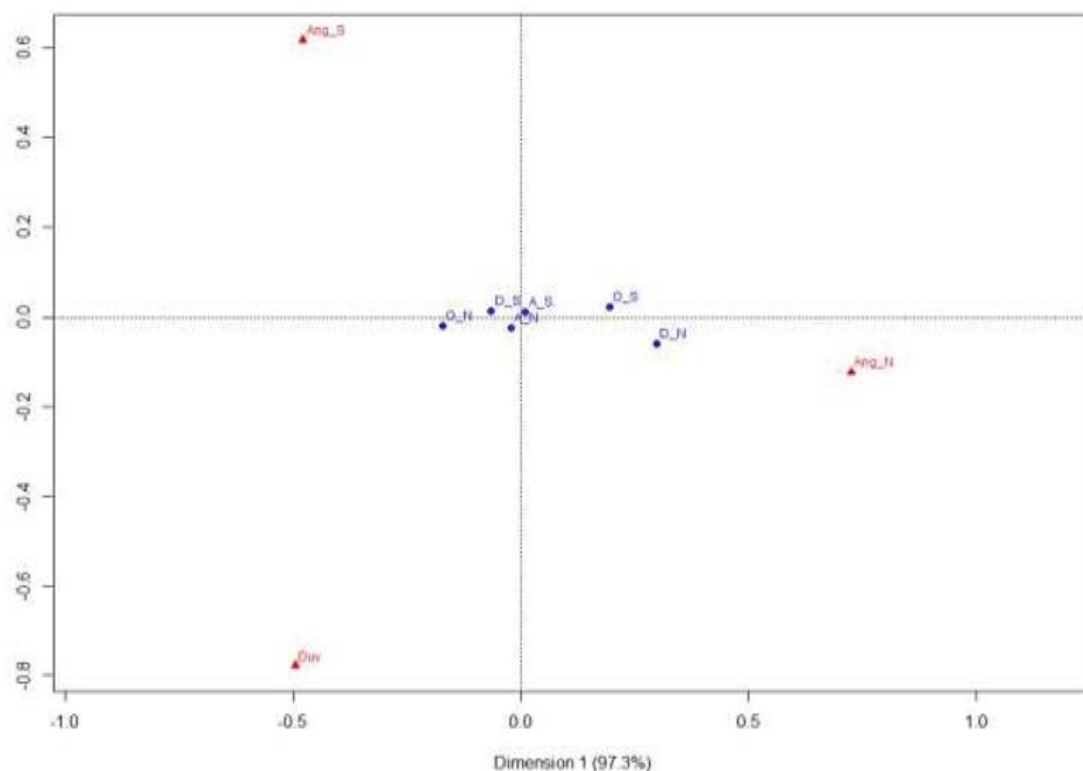
In summary, the variables most strongly related to anguish were gender, BSI somatization, and HAM-A variables including fears, depressive mood, gastrointestinal symptoms, and neurovegetative symptoms. No variable specifically related to anxiety was associated with anguish in this descriptive context. For depression, only the HAM-A variable “depressive mood” reached significance.

An additional analysis compared anxiety and depressive symptoms (using MINI diagnoses) to identify which symptoms were most closely associated with anguish. The Wilcoxon-Mann-Whitney and Chi-Square tests indicated that, between anguish and depression, BSI somatization and HAM-A neurovegetative symptoms were significant, while between anguish and anxiety, only HAM-A fears was significant.

These results are summarized in Table 2 and Table 3.

### Inferential Analysis

The inferential analysis was conducted in three stages. The first stage focused on reducing the dimensionality of certain questionnaires and constructing latent variables that could better discriminate between groups with and without



**Figure 1:** Correspondence analysis graphs between the variables Distress, MINI Depression, MINI Anxiety and MINI Other Diagnoses. Ang = Anguish

**Table 2:** Statistical Significance of Psychopathological Symptoms Across Patient Groups

| Variable                      | Anguish (P-Value) | Anxiety   | Depression |
|-------------------------------|-------------------|-----------|------------|
|                               |                   | (P-Value) | (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*     |

**Table 3:** Comparative table of the significance (Chi-square test) of symptoms and defense mechanisms of anguish with those of anxiety and depression.

|                                 | Anguish   | Anxiety   | Depression |
|---------------------------------|-----------|-----------|------------|
| Variable                        | (P-Value) | (P-Value) | (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      |

anguish, for which Item Response Theory (IRT) was employed. The second stage aimed to identify the variables with the greatest predictive power for anguish. To this end, a binomial logistic regression model was fitted using the stepwise method for variable selection, adopting the lowest AIC criterion. The third stage involved selecting variables using IRT for questionnaires associated with psychiatric disorders.

For the HAM-A, two IRT-based scores were generated. The first, the Hamilton TRI Score, included all 13 items, while the second, the Reduced Hamilton TRI Score, included only the items most significant for anguish in the Chi-Square tests and of interest to the researcher: HAM-A Fears, HAM-A Depressive Mood, HAM-A Gastrointestinal Symptoms, and

HAM-A Neurovegetative Symptoms. Additionally, two sum scores were calculated: the HAM-A Sum Score and the HAM-A Reduced Sum Score, the latter derived from the same subset of items. These results indicate two main points: first, the HAM-A questionnaire is indeed related to anxiety, and second, IRT demonstrates superior discriminatory power compared to the simple sum method in distinguishing between groups.

The DSQ-40 includes three latent variables based on the literature: Neurotic DSQ, Immature DSQ, and Mature DSQ. Both the sum and IRT scores of the DSQ-40 showed no significant association with the presence or absence of anguish.

To investigate whether anguish is more closely related to depression than to anxiety, a logistic regression model was fitted. The dependent variable was the presence or absence of anguish, and the model was fitted excluding the doubt group, resulting in 85 observations. The model included 23 explanatory variables: DSQ-40 Mature TRI Score; DSQ-40 Immature TRI Score; DSQ-40 Neurotic TRI Score; Reduced Hamilton TRI Score; STAI State; STAI Trait; MINI Depression; MINI Anxiety; MINI Other Diagnoses; 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; and Marital Status. The variables selected by the stepwise procedure were: Gender, Reduced Hamilton Score, BSI Somatization, BSI Hostility, BSI Obsession-Compulsion, Age, and MINI Depression.

Key findings from the model include:

- Each one-point increase in BSI Somatization increases the odds of experiencing anguish by 9.4%, holding other variables constant.
- Each additional year of age reduces the expected odds of anguish by 4.6%, holding other variables constant.
- Each one-point increase in the HAM-A Reduced Score increases the odds of anguish by 185%, controlling for other variables.
- For BSI Hostility, each point increase decreases the odds of anguish by 15.5%, and for BSI Obsession-Compulsion, each point increase decreases the odds by 12.6%, controlling for other variables.
- Women are 2.76 times more likely than men to experience anguish, holding other variables constant.
- Participants with depression are 3.64 times more likely to experience anguish than those without depression, controlling for all other variables.

These results are summarized in Table 4 and Table 5, providing a detailed overview of the estimated odds ratios and confidence intervals for the selected variables.

## Discussion

The present study aimed to investigate differences in symptomatology and comorbidities associated with the experience of anguish and to determine whether anguish is more closely linked to depression than to anxiety. The findings provide clear empirical evidence that anguish constitutes a distinct emotional construct with partial overlap with depressive symptomatology and limited overlap with anxiety [15-17]. Patients experiencing anguish reported a combination of somatic and emotional symptoms, including chest, head, and back pain, limb stiffness, tachycardia,

gastrointestinal complaints, neurovegetative symptoms, and depressed mood [18, 19]. Chest pain and neurovegetative symptoms emerged as particularly prominent, highlighting the strong somatic dimension of anguish [20]. While HAM-A fears were associated with anxiety, they reflected a non-object-directed existential fear (e.g., fear of dying) rather than situational anxiety, further distinguishing anguish from conventional anxiety constructs [21, 22]. Dimensionality reduction using Item Response Theory (IRT) demonstrated that specific HAM-A items provided greater discriminatory power for identifying anguish than simple sum scores, a finding reinforced by logistic regression analyses [23]. Variables such as BSI somatization, HAM-A reduced scores, hostility, obsession-compulsion, age, and MINI depression significantly predicted the presence of anguish [24]. Notably, patients with depression were 3.64 times more likely to experience anguish than those without depression, whereas only HAM-A fear was shared with anxiety, supporting the hypothesis that anguish is more strongly associated with depressive than anxiety symptomatology [25, 26]. Patient narratives corroborated these quantitative findings, situating anguish within experiences of loneliness, bereavement, high workload, hopelessness, suicidal thoughts, and other psychosocial stressors commonly linked to depression [27-29]. Gender also played a moderating role, with anguish more prevalent among women, consistent with epidemiological data indicating higher rates of depression and suicide attempts in females [30, 31]. These findings underscore the importance of considering gender in the assessment and conceptualization of anguish [32].

Clinically, the results highlight the limitations of conventional anxiety and depression scales in capturing the full phenomenology of anguish [33]. The observed somatic and neurovegetative components suggest that assessment and treatment should integrate both emotional and bodily dimensions [34]. Interventions may need to address the existential and phenomenological aspects of anguish in addition to conventional symptom-focused strategies [35, 36]. In summary, anguish emerges as a distinct clinical construct with unique somatic and emotional features, partially overlapping with depression but largely independent of traditional anxiety measures [37, 38]. This study underscores the need for more precise psychometric instruments, larger samples, and targeted diagnostic strategies to improve the identification, prediction, and treatment of anguish. The findings have important implications for psychiatry, psychology, and neuroscience, emphasizing the value of integrating conceptual, empirical, and clinical perspectives to enhance understanding and management of this complex emotional phenomenon [39]. 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 [40].

## Conclusions

The present study provides strong empirical and theoretical evidence that anguish constitutes a distinct emotional construct, partially overlapping with depressive symptomatology but largely independent of conventional anxiety. The findings indicate that anguish involves a predominant somatic and neurovegetative dimension, characterized by symptoms such as chest pain, tachycardia, and muscle stiffness, alongside emotional features of hopelessness and existential fear. These characteristics suggest that traditional scales for anxiety and depression fail to capture the full phenomenology of anguish.

Depression emerged as the strongest predictor of anguish, with patients experiencing depressive symptoms being significantly more likely to report anguish than those without depression. In contrast, anxiety was related only to specific fear components, indicating a more limited overlap. Gender differences were also observed, with women showing higher prevalence rates, consistent with broader epidemiological patterns of mood disorders.

Clinically, these results underscore the need for refined diagnostic instruments capable of assessing both the emotional and bodily aspects of anguish. Future research should prioritize the development and validation of psychometric tools that can differentiate anguish from related affective constructs. Larger and more diverse samples, including socioeconomic and cultural variables, are necessary to enhance generalizability. Integrating phenomenological, biological, and psychological perspectives may contribute to more comprehensive treatment strategies that address both the existential and somatic dimensions of human suffering.

## Authors Contributions

FFPV and FLN: study concept, critical revision of the manuscript, and design. FFPV and FLN: study concept, and design, and critical revision of the manuscript. FFPV and FLN: recruitment of cases, analysis, interpretation of data, writing and editing the manuscript. FFPV and FLN: study concept, analysis, design, interpretation of data, and critical revision of the manuscript. All authors approved the final version of the manuscript and the manuscript submission to the specific reports.

## Ethics declarations

The nature of the study was discussed with each participant and written informed consent was obtained from all participants before participating in the study. This study was approved by Institute of Psychiatry, Faculty of Medicine, University of São Paulo Ethics Committee after a very clear statement that provided information on the following points;

study rationale, participation in this study was completely free and voluntary, participation in the study had no direct benefit to the participant, although the data obtained could be used for the benefit of other patients, they may be withdrawn at any time without giving any justification and without affecting their care service, and the results of the study may be used for scientific publication but the identities of the patients and would be completely secret.

## Human Rights and Animal Rights

No animal was used in this research. All human research procedures followed were in accordance with the ethical standard of the committee responsible for human experimentation (institutional and national) and with Helsinki Declaration of 1975, as revised in 2008.

## Consent for Publication

Written informed consent was obtained from each participant prior to the study for publication of this research.

## Availability of Data and Materials

Data supporting the findings of the article isn't publicly available as a result of the privacy policies of the health facilities involved in the study, but it can be provided by the corresponding author on reasonable request.

## Funding

"This research received no specific grant from any funding agency, commercial or not-for-profit-sectors".

## Competing interests

The authors report no conflict of interest.

## Acknowledgments

The authors are deeply grateful to all patients from the Institute of Psychiatry, Faculty of Medicine, University of São Paulo, for their participation in this study. We also thank the collaborating mental health institutions for providing access to data and facilitating contact with the volunteers whose contributions made this research possible.

## References

1. Kaur S, Gupta P, Singh R, et al. Chest discomfort and emotional distress: psychosomatic manifestations of negative life events. *J Psychosom Res* 167 (2023): 111110.
2. Feray C, Bouaziz E, Daban C. Somatic correlates of emotional anguish: a clinical perspective. *Front Psychiatry* 14 (2023): 1038921.
3. Swenne G, Ter Haar E. The etymology and semantics of anguish: historical roots and medical implications. *Hist Psychiatry* 34 (2023): 78-86.

4. Koskinen A, Hovatta I. Revisiting Angst: linguistic and cultural nuances of anxiety and anguish. *Eur Arch Psychiatry Clin Neurosci* 273 (2023): 245-254.
5. MacIntyre A, Halliwell J, Lomas D. Translating Angst: conceptual evolution of anxiety and anguish in 20th-century psychiatry. *Br J Hist Psychol* 96 (2023): 512-523.
6. Gentil V, Gentil M. Anguish, fear, and anxiety: conceptual distinctions and clinical implications. *Rev Bras Psiquiatr* 31 (2009): S1-S7.
7. Muller S, Costa R, Baptista M. Clinical differentiation between anguish and anxiety in affective disorders. *World J Psychiatry* 13 (2023): 591-603.
8. Canavarro MC. Inventário de Sintomas Psicopatológicos: BSI – Brief Symptom Inventory. In: Simões MR, Gonçalves MM, Almeida LS, editores. *Testes e Provas Psicológicas em Portugal*. Coimbra: Quarteto (2007): 305-331.
9. Derogatis LR. The Brief Symptom Inventory (BSI): Administration, Scoring and Procedures Manual. Baltimore (MD): Clinical Psychometric Research (1982).
10. Gallani NR, Amato T, Battaglia F, et al. Assessing defense mechanisms with the Defense Style Questionnaire: A comprehensive psychometric evaluation of the DSQ-40. *Front Psychol* 11 (2020): 1501.
11. Scaini S, Battaglia F, Somma A. Revisiting ego defenses: Empirical validation and clinical implications of the Defense Style Questionnaire (DSQ-40). *BMC Psychiatry* 22 (2022): 833.
12. Knowles KA, Olatunji BO. Specificity of trait anxiety in anxiety and depression: Meta-analysis of the State-Trait Anxiety Inventory. *J Affect Disord* 274 (2020): 991-1002.
13. Spielberger CD, Gorsuch RL, Lushene RE. Manual for the State-Trait Anxiety Inventory (STAI). Palo Alto (CA): Consulting Psychologists Press (1983).
14. Sheehan DV, Lecrubier Y, Sheehan KH, et al. The Mini-International Neuropsychiatric Interview (MINI): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *J Clin Psychiatry* 59 (1998): 22-33.
15. Freud S. *The Problem of Anxiety*. New York: Norton (1936).
16. May R. *The Meaning of Anxiety*. New York: Ronald Press (1950).
17. Kristeva J. *Black Sun: Depression and Melancholia*. New York: Columbia University Press (1989).
18. Barsky AJ, Wyshak G, Klerman GL. The somatosensory amplification scale and its relationship to hypochondriasis. *J Psychiatr Res* 24 (1990): 323-334.
19. Fava GA, Cosci F, Sonino N. The psychosomatic view of anxiety and depression. *Acta Neuropsychiatr* 29 (2017): 311-320.
20. Sartre JP. *Being and Nothingness*. New York: Washington Square Press (1956).
21. Hamilton M. The assessment of anxiety states by rating. *Br J Med Psychol* 32 (1959): 50-55.
22. Spielberger CD. *Manual for the State-Trait Anxiety Inventory (STAI)*. Palo Alto: Consulting Psychologists Press; 1983.
23. Embretson SE, Reise SP. *Item Response Theory for Psychologists*. Mahwah: Lawrence Erlbaum Associates (2000).
24. Derogatis LR. *Brief Symptom Inventory (BSI): Administration, Scoring, and Procedures Manual*. Minneapolis: NCS Pearson (1993).
25. Beck AT, Steer RA, Brown GK. *Manual for the Beck Depression Inventory-II*. San Antonio: Psychological Corporation (1996).
26. Kendler KS, Gardner CO, Prescott CA. Toward a comprehensive developmental model for major depression in women. *Am J Psychiatry* 159 (2002): 1133-1145.
27. Joiner TE. *Why People Die by Suicide*. Cambridge: Harvard University Press (2005).
28. Van Orden KA, Witte TK, Cukrowicz KC, Braithwaite SR, Selby EA, Joiner TE Jr. The interpersonal theory of suicide. *Psychol Rev* 117 (2010): 575-600.
29. Kirmayer LJ. Cultural variations in the clinical presentation of depression and anxiety. *J Clin Psychiatry* 62 (2001): 22-28.
30. Nolen-Hoeksema S. Gender differences in depression. *Curr Dir Psychol Sci* 10 (2001): 173-176.
31. World Health Organization. *Depression and Other Common Mental Disorders: Global Health Estimates*. Geneva: WHO (2017).
32. Seedat S, Scott KM, Angermeyer MC, et al. Cross-national associations between gender and mental disorders in the WHO World Mental Health Surveys. *Arch Gen Psychiatry* 66 (2009): 785-795.
33. Cosci F, Fava GA. Staging of mental disorders: systematic review. *Psychother Psychosom* 82 (2013): 20-34.
34. Panksepp J. *Affective Neuroscience: The Foundations of Human and Animal Emotions*. New York: Oxford University Press (1998).
35. Yalom ID. *Existential Psychotherapy*. New York: Basic Books (1980).

36. Frankl VE. Man's Search for Meaning. Boston: Beacon Press (2006).
37. Clark LA, Watson D. Tripartite model of anxiety and depression: psychometric evidence and taxonomic implications. J Abnorm Psychol 100 (1991): 316-336.
38. Barlow DH, Ellard KK, Sauer-Zavala S, et al. The origins of neuroticism. Perspect Psychol Sci. 2014;9(5):481–96.
39. Fuchs T. The phenomenology of depression. Psychopathology 46 (2013): 338-360.
40. Ferreira VR, Hauck Filho N. Adaptação do Inventário de Sintomas Psicopatológicos (PSI) para a população brasileira. Psico-USF 23 (2018): 23-34.



This article is an open access article distributed under the terms and conditions of the [Creative Commons Attribution \(CC-BY\) license 4.0](https://creativecommons.org/licenses/by/4.0/)