



**RECISATEC – REVISTA CIENTÍFICA SAÚDE E TECNOLOGIA**  
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**THERAPEUTIC INTERVENTIONS FOR ANXIETY DISORDERS: AN INTEGRATIVE REVIEW**

**INTERVENÇÕES TERAPÊUTICAS PARA DISTÚRBIOS DE ANSIEDADE: UMA REVISÃO INTEGRATIVA**

**INTERVENCIONES TERAPÉUTICAS PARA LOS TRASTORNOS DE ANSIEDAD: UNA REVISIÓN INTEGRADORA**

Roslaine Ifran Amaral<sup>1</sup>, Luiza Carolina Mendes Flores<sup>2</sup>, Luiza Kowalczuk<sup>3</sup>, Adriana Aparecida Paz<sup>4</sup>, Ana Cristina Wesner Viana<sup>5</sup>

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**ABSTRACT**

Background: Anxiety disorders are characterized by excessive emotional responses that generate major disturbances, causing cognitive and behavioral changes and triggering somatic manifestations. Therapeutic interventions show relevance and significant results for the treatment of anxiety. Aim: To identify therapeutic interventions used in the treatment of anxiety disorders. Method: A search for publications indexed in three electronic databases was conducted from January to March 2021. Titles, abstracts, and full-text reading by two independent reviewers were analyzed and classified by level of evidence developed by the Oxford Centre for Evidence-Based Medicine. Results: It resulted in 27 studies that observed the following therapeutic interventions: Psychoeducation; Mindfulness; Evidence-Based Behavioral Therapy; Applied Relaxation; Transdiagnostic CBT; Dialectical Behavioral Therapy; Positive Activity Techniques; Individual and Group CBT; Transcendence Technique Multifaceted Spiritually Based Intervention; Unified Protocol for Transdiagnostic Treatment of Emotional Disorders; Positive Activity Intervention Protocol; and Art Therapy. Conclusions: Of the therapeutic interventions used for the treatment of anxiety disorders, Mindfulness and Psychoeducation were the interventions of greater choice among the studies, which bring large benefit and autonomy to patients, considering that the implementation of these interventions can be performed by nurses and a multidisciplinary team in primary care services, also enabling the reduction of costs to the health system.

**KEYWORDS:** Anxiety Disorders. Therapeutics. Nursing. Psychiatric Nursing. Mental Health. Health Strategies.

**RESUMO**

Contexto: Os transtornos de ansiedade são caracterizados por respostas emocionais excessivas que geram grandes distúrbios, causando alterações cognitivas e comportamentais e desencadeando manifestações somáticas. As intervenções terapêuticas mostram relevância e resultados significativos para o tratamento da ansiedade. Objetivo: Identificar as intervenções terapêuticas utilizadas no tratamento dos transtornos de ansiedade. Método: Foram realizadas buscas de publicações indexadas em três bases de dados eletrônicas, no período de janeiro a março de 2021. Analisou-se os títulos, resumos e a leitura dos artigos na íntegra por duas avaliadoras independentes, que foram classificados por nível de evidência proposto pelo *Oxford Centre for Evidence -Based Medicine*. Resultados: Resultou em 27 estudos, dos quais se observou as seguintes intervenções terapêuticas: Psicoeducação; Atenção Plena; Terapia Comportamental Baseada em Evidências; Relaxamento Aplicado; TCC transdiagnóstica; Terapia Comportamental Dialética; Técnicas de Atividade Positiva; TCC individual e em grupo; Técnica de Transcendência Intervenção Multifacetada de Base Espiritual; Protocolo

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Unificado para Tratamento Transdiagnóstico de Transtornos Emocionais; Protocolo de Intervenção de Atividade Positiva e a Arteterapia. Conclusões: Das intervenções terapêuticas utilizadas para o tratamento dos transtornos de ansiedade, evidenciaram-se a Atenção Plena e a Psicoeducação, como as intervenções de maior escolha entre os estudos.

**PALAVRAS-CHAVE:** Transtornos de Ansiedade. Terapêutica. Enfermagem. Enfermagem Psiquiátrica. Saúde Mental. Estratégias de Saúde.

### RESUMEN

Antecedentes: Los trastornos de ansiedad se caracterizan por respuestas emocionales excesivas que generan importantes alteraciones, provocando cambios cognitivos y conductuales y desencadenando manifestaciones somáticas. Las intervenciones terapéuticas muestran relevancia y resultados significativos para el tratamiento de la ansiedad. Objetivo: Identificar las intervenciones terapéuticas utilizadas en el tratamiento de los trastornos de ansiedad. Método: Se realizaron búsquedas de publicaciones indexadas en tres bases de datos electrónicas, en el período de enero a marzo de 2021. Se analizaron los títulos, los resúmenes y la lectura del texto completo de los artículos por parte de dos revisores independientes y se clasificaron según el nivel de evidencia propuesto por el Oxford Centre for Evidence-Based Medicine. Resultados: Se obtuvieron 27 estudios, de los cuales se observaron las siguientes intervenciones terapéuticas: Psicoeducación; Atención Plena; Terapia Conductual Basada en la Evidencia; Relajación Aplicada; TCC Transdiagnóstica; Terapia Dialéctica Conductual; Técnicas de Actividad Positiva; TCC Individual y Grupal; Técnica de Trascendencia Intervención Multifacética de Base Espiritual; Protocolo Unificado de Tratamiento Transdiagnóstico de Trastornos Emocionales; Protocolo de Intervención de Actividad Positiva y Arteterapia. Conclusiones: Las intervenciones terapéuticas utilizadas para el tratamiento de los trastornos de ansiedad, evidenciaron que la Atención Plena y la Psicoeducación, fueron las intervenciones de mayor elección entre los estudios.

**PALABRAS CLAVE:** Trastornos de ansiedad. Terapêutica. Enfermagem. Enfermería Psiquiátrica. Salud mental. Estrategias de salud.

### INTRODUCTION

Anxiety disorders (AD) are characterized by excessive emotional responses that generate major disturbances, causing cognitive and behavioral changes and triggering somatic manifestations. They constitute one of the leading causes of disability around the world, with excessive and persistent fear as one of the main characteristics involved in these disorders.<sup>1</sup>

According to the DSM-V<sup>1</sup>, anxiety disorders are classified into Panic Disorder (PD), Agoraphobia, Generalized Anxiety Disorder (GAD), Social Anxiety Disorder (SAD), Specific Phobia (SP), Separation Anxiety Disorder (SAD), Selective Mutism (MS), Panic Attack Specifier (PAS), Substance/Medication-Induced Anxiety Disorder, and Anxiety Disorder due to another Medical Conditions (APA).

It is estimated that around the world, about 264 million people suffer from some type of anxiety disorder, which means an average of 3.6% of the world population.<sup>2</sup> In Brazil, specifically, this data is even more worrisome, as 18 million Brazilians suffer from this disabling condition, which represents 9.3% of the population, being classified as the country with the highest number of anxiety cases in the world.<sup>2</sup>



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The etiology of the ADs is considered multifactorial. Although the neurobiology of individual anxiety disorders is broadly unknown, generalizations have been identified for most of them, such as alterations in the limbic system, dysfunction of the hypothalamic-pituitary-adrenal axis, and genetic factors.<sup>1,3</sup> In addition, general risk factors for anxiety disorders include female gender and family history of anxiety, although disorder-specific risk factors have also been identified.<sup>3</sup> An environment permeated with instability and adversity, such as financial difficulties, family quarrels, or stress at work can be a risk factor for the development of an anxiety condition.<sup>1</sup>

Regarding social costs, anxiety disorders are directly associated with a significant increase in health care expenses<sup>4</sup>, since individuals with AD have decreased productivity and frequently seek public health services, such as emergency rooms, medical appointments, and examinations.<sup>5,3</sup> In addition, it is important to highlight that, although ADs cause the individuals complications in their daily, social, and work activities<sup>6</sup>, it is estimated that only 23% of the individuals diagnosed with AD have access to specialized services with psychiatrists, psychologists or nurses specialized in mental health.<sup>4,7</sup>

Thus, despite their importance to public health, the vast majority of the ADs continue undetected and untreated by health systems, even in economically advanced countries. If untreated, these disorders are usually chronic, with recurrent symptoms or partial remission. The impairments associated with the ADs range from limitations in role functioning to severe impairments, such as the patient's inability to leave home as an attempt to avoid anxiogenic situations.<sup>3,8</sup>

Specifically, the treatment for ADs can be accomplished through psychopharmaceuticals and psychotherapies. And, for the choice of the therapeutic modality, one should consider specific diagnosis, response to previous treatments, availability of treatment, cost-effectiveness, patient preference, psychiatric comorbidities, clinical comorbidities, and patient goals.<sup>9</sup>

As the first choice for the pharmacological treatment of ADs, antidepressants are the most indicated, such as Selective Serotonin Reuptake Inhibitors (SSRIs) and Serotonin-Norepinephrine Reuptake Inhibitors (SNRIs).<sup>10,11</sup> Benzodiazepine medications also demonstrate efficacy in the treatment for AD and are considered second- or third-line medicinal products for the treatment.<sup>11</sup>

For treating anxiety, psychosocial therapies that show relevance and significant results are also presented. According to the National Alliance on Mental Illness<sup>12</sup>, these therapies collaborate in training the individual to develop vocational, social, and psychological skills to control anxiety, improving their quality of life and well-being. In addition, it comprises from individual aspects to the recognition of the importance of interpersonal relationships in the stability of well-being, ensuring an integrative vision of health and demonstrating, according to studies, that the application of psychosocial treatments is effective, presenting short- and long-term improvements, with similar or superior responses to the pharmacological treatment.<sup>13,14</sup> However, one of the main difficulties for the development of more effective therapeutic proposals in mental health in health services has been the insufficient number of professionals properly trained and supervised to provide mental health care.<sup>15</sup>



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Given the context of the importance of caring for patients with AD, this review study is justified with the purpose of deepening the knowledge about therapeutic interventions performed for the ADs. Moreover, it is considered that therapeutic techniques have been occupying a prominent place, as they have evidenced assertive responses in benefiting the health of the population suffering from moderate mental disorder.<sup>16</sup> This study aims to identify the therapeutic interventions used in the treatment of anxiety disorders.

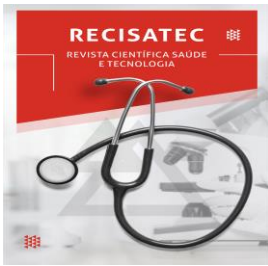
### MATERIALS AND METHODS

This is an integrative review, in which a synopsis of the literature is presented, based on a specific concept or content thematic area, generating synthesis, analysis, and the conclusions.<sup>17</sup> The steps are: construction of the review question, search on databases and selection of primary studies, data extraction, evaluation of the included studies, synthesis of the results, and presentation of the review.<sup>18</sup> To define the research question, the acronym PICO (Patient, Intervention, Comparison, Outcome) was used. The following question was proposed: For the treatment of anxiety disorder (P), which therapeutic interventions (I) are used (O)? It was chosen to omit the definition of C (control) because of the limited evidence from comparative studies. The definition of control (C) would complicate the evaluation of the research question for which the best available evidence in the literature was sought.

Based on the guiding question, the search for articles was conducted in the National Library of Medicine (PubMed), Virtual Health Library (VHL), Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Web of Science (WoS) databases, using the following search strategy with Health Science Descriptors (DeCS/MeSH): ("Anxiety disorder\*" OR anxiety) AND (Therapeutic\* OR "Therapeutic\* Approache\*" OR Treatment\*) NOT ("pharmaceutical preparations" OR pharmacology OR drug\*) AND (anxiolytic\* OR antidepressant\*) AND (children\* OR teenager\*), from January to March 2021.

Then, using the Rayyan® platform, we excluded duplicate articles and read the titles and abstracts in pairs independently, in accordance with the inclusion criteria, the exclusion criteria, and the guiding question. Inclusion criteria were adults aged 18 to 65 years, free full articles, intervention studies (comparative or not, randomized or not), clinical or structured diagnosis of anxiety, articles published in the last 10 years in Portuguese, English, and Spanish. Secondary studies and articles involving patients with chronic diseases, Covid-19, palliative care, patients taking anxiolytic drugs, interventions involving the use of apps, internet and/or cellphones were excluded.

The delimitation of the articles included in this integrative review occurred through the resolution of disagreements between the authors by a third reviewer. The articles were classified by level of evidence according to the recommendations proposed by the Oxford Centre for Evidence-based Medicine<sup>19</sup>: **1A** – systematic review of randomized controlled trials; **1B** – randomized controlled trial with narrow confidence interval; **1C** – all-or-nothing therapeutic outcomes; **2A** – systematic review of cohort studies; **2B** – cohort study (including lower quality randomized controlled trial); **2C** – observation of



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therapeutic outcomes or ecological studies; **3A** – systematic review of case-control studies; **3B** – case-control study; **4** – case report (including lower quality cohort or case-control); **5** – expert opinion (CEBM).

Data extraction with the purpose of synthesizing the main contributions and information of the studies was performed using a review table that can be found in the results as Table 1.



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Table 1- Distribution of trial (title, authors' names, year of publication, journal, country of origin) according to objective, design, level of evidence, interventions and main results (n = 27)

<b>Trial</b>	<b>Objective</b>	<b>Delineation Level of evidence</b>	<b>Interventions</b>	<b>Main results</b>
Acceptance-based behavioral therapy for GAD: Effects on outcomes from three theoretical models <b>Treanor et al. (2011)</b> Depress Anxiety USA	To examine the effect of an acceptance-based behavioral therapy for Generalized Anxiety Disorder (GAD).	RCT  1B	Psychoeducation; PA exercises; Diaphragmatic breathing and muscle relaxation (adapted from the Cognitive Behavioral Therapy protocol)	There was evidence that acceptance-based behavioral therapy for GAD has significant effects on the unique targets of intervention highlighted in several prominent theoretical models of GAD.
Cognitive therapy vs interpersonal psychotherapy in social anxiety disorder a randomized controlled trial <b>Stangier et al. (2011)</b> Arch Gen Psychiatry Germany	To compare the effectiveness of Cognitive Therapy (CT) and Interpersonal Psychotherapy (IPT) for symptoms of social phobia.	RCT  1B	Cognitive Therapy (CT); Interpersonal Psychotherapy (IPT).	CT and IPT led to considerable improvements that were maintained one year after treatment; CT was more efficacious than was IPT in reducing social phobia symptoms.
Effectiveness of guided self-help for depression and anxiety disorders in primary care: A pragmatic randomized controlled trial <b>Seekles et al. (2011)</b> Psychiatry Res Netherlands	To evaluate the effectiveness of (guided) self-help in primary care for patients with a diagnosis of mood and/or minor or major anxiety disorder.	RCT  1B	Guided self-help; Problem-solving Medication. Vigilance; treatment;	For patients with an anxiety disorder only, the anxiety symptoms decreased significantly compared to the care-as-usual group. Self-help seems only slightly superior to care-as-usual and therefore might not be an effective tool in general practice.



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<p>A randomized clinical trial of transdiagnostic cognitive-behavioral treatments for anxiety disorder by comparison to relaxation training  <b>Norton (2012)</b>          Behavior Therapy          USA</p>	<p>To compare the effectiveness of a transdiagnostic Cognitive Behavioral Therapy (CBT) treatment for Anxiety Disorder (AD) with a relaxation training program.</p>	<p>RCT          1B</p>	<p>Transdiagnostic CBT; Applied Relaxation Training Program (RLX).</p>	<p>Significant and statistically equivalent/non-inferior outcomes across conditions, although relaxation was associated with a greater rate of dropout despite no differences in treatment credibility.</p>
<p>Transdiagnostic versus diagnosis-specific CBT for anxiety disorders: A preliminary randomized controlled noninferiority trial  <b>Norton &amp; Barrera (2012)</b>          Depress Anxiety          USA</p>	<p>To compare the effectiveness of Transdiagnostic Cognitive Behavioral Therapy (CBT) with diagnosis-specific CBT for panic disorder (PD), social anxiety disorder (SAD), and Generalized Anxiety Disorder (GAD).</p>	<p>RCT          1B</p>	<p>Transdiagnostic CBT: Psychoeducation; Cognitive introduction and restructuring; compared to diagnosis-specific CBT.</p>	<p>The efficacy of Transdiagnostic CBT for anxiety disorder is as strong as that of specific CBT, with the benefit of facilitating the dissemination of and increasing access to evidence-based treatments for anxiety.</p>
<p>A multifaith spiritually based intervention versus supportive therapy for generalized anxiety disorder: A pilot randomized controlled trial  <b>Koszycki et al. (2014)</b>          J Clin Psychol          USA</p>	<p>To test whether a spiritually based intervention has greater efficacy than a non-specific control condition in generalized anxiety disorder.</p>	<p>RCT          1B</p>	<p>SBI (spiritually based multifaceted intervention).</p>	<p>A nondenominational spiritually based intervention has greater efficacy than a rigorous control in improving symptoms of GAD and enhancing spiritual well-being.</p>
<p>A preliminary study of individual cognitive behavior therapy for social anxiety disorder in Japanese clinical settings: A single-arm, uncontrolled trial  <b>Yoshinaga et al. (2013)</b>          BMC Research Notes          Japan</p>	<p>To identify the feasibility of individual CBT for Social Anxiety Disorder (SAD) in Japanese clinical settings. To examine baseline predictors of outcomes associated with receiving Cognitive Behavioral Therapy (CBT).</p>	<p>RCT          1B</p>	<p>Individual CBT (based on the Clark and Mells model).</p>	<p>A 14-week individual CBT program seems feasible and may achieve favorable treatment outcomes for SAD in Japanese clinical settings.</p>
<p>Decentering as a potential common mechanism across two therapies for generalized anxiety disorder  <b>Hayes-Skelton et al. (2013)</b></p>	<p>To examine whether a treatment combining mindfulness (Applied Relaxation) and acceptance-based strategies with behavioral approaches would improve outcomes in Generalized Anxiety Disorder</p>	<p>RCT          1B</p>	<p>Acceptance-Based Therapy (ABBT); Applied Relaxation (AR).</p>	<p>ABBT is a viable alternative for the treatment of GAD.</p>



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Journal of consulting and clinical psychology USA	(GAD) in relation to empirically supported treatment.			
Randomized controlled trial of transdiagnostic group treatments for primary care patients with common mental disorders <b>Ejebby et al. (2014)</b> Fam Pract United Kingdom	To compare the effects of cognitive-behavioral therapy and multimodal intervention on quality of life and psychological symptom relief in patients with common mental disorders or problems treated in primary health care centers.	RCT 1B	Cognitive Behavioral Therapy (CBT); Multimodal Intervention (MMI).	No significant differences emerged over follow-up. Participants receiving CBT were significantly more improved than those in the care-as-usual (CAU) group. On four of the secondary outcome measures, the MMI group was significantly more improved than the CBT and CAU groups. The course of improvement did not differ between the CBT group and the CAU group on these measures.
An open trial of emotion regulation therapy for generalized anxiety disorder and cooccurring depression <b>Mennin et al. (2015)</b> Depress Anxiety USA	To evaluate the effectiveness of emotion regulation therapy to patients with Generalized Anxiety Disorder (GAD) and depressive symptoms.	RCT 1B	Emotion regulation; Full attention to somatic and emotional cues.	GAD patients, half with comorbid major depression, evidenced statistically, and clinically meaningful improvements in symptom severity, impairment, quality of life, and in model-related outcomes including emotional/motivational intensity, mindful attending/acceptance, decentering, and cognitive reappraisal. Patients maintained gains across the three- and nine-month follow-up periods.
Decentering as a potential common mechanism across two therapies for generalized anxiety disorder <b>Hayes-Kelton et al. (2015)</b> Journal of consulting and clinical psychology USA	To evaluate the effectiveness of two treatments for Generalized Anxiety Disorder (GAD): an acceptance-based behavioral therapy (ABBT) and applied relaxation (AR).	RCT 1B	Evidence-Based Behavioral Therapy (EBBT); Applied Relaxation (AR).	In this sample, results suggest that increased decentering was associated with decreases in anxiety and that changes in decentering appear to precede changes in symptoms within both ABBT and AR, indicating that decentering may be an important common mechanism of action.
Effectiveness of a tailored implementation programme to improve recognition, diagnosis and treatment of anxiety and depression in general practice: A cluster randomised controlled trial <b>Sinnema et al. (2015)</b> Implementation Science USA	To verify the effectiveness of a tailored implementation program to improve the recognition, diagnosis, and treatment of anxiety and depression in general practice.	RCT 1B	Psychoeducation.	The tailored implementation programme led to recognition of a higher proportion of patients presenting with anxiety and depression, more consultations after recognition and did not lead to more prescriptions of antidepressants or referral to specialist mental health services. Patients in the intervention group reported better accessibility of care and provision of information and advice.





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<p>Interpersonal problems, mindfulness, and therapy outcome in an acceptance-based behavior therapy for generalized anxiety disorder</p> <p><b>Millstein et al. (2015)</b> Cogn Behav Ther USA</p>	<p>To evaluate the response to two treatments for Generalized Anxiety Disorder (GAD); an Acceptance Based Behavioral Therapy (ABBT) and Applied Relaxation (AR) and examine how the development of mindfulness may be related to change in interpersonal problems during treatment and at follow-up.</p>	<p>RCT  1B</p>	<p>Full Attention – EBBT and AR.</p>	<p>Decrease in interpersonal problems during treatment. Increases in mindfulness over treatment and through follow-up were associated with decreases in interpersonal problems, even when accounting for reductions in overall GAD severity. Developing mindfulness in individuals with GAD may help ameliorate interpersonal difficulties among this population.</p>
<p>Metacognitive therapy applications in social anxiety disorder: An exploratory study of the individual and combined effects of the attention training technique and situational attentional refocusing</p> <p><b>Vogel et al. (2016)</b> Journal Experimental Psychopathology Norway</p>	<p>To verify the effectiveness of Attention Training Techniques (ATT) and Situational Attention Refocusing (SAR) for decreases in Anxiety Disorders (AT).</p>	<p>RCT  1B</p>	<p>Attention Training Technique (ATT); Situational Attention Refocusing (SAR).</p>	<p>Made significant reductions on interview rated and self-reported measures of social and general levels of anxiety by the end of the first intervention (either ATT or SAR). Overall, these brief techniques aimed at increasing attentional flexibility were associated with large and clinically significant changes in Social Anxiety Disorder symptoms.</p>
<p>Reductions in experiential avoidance as a mediator of change in symptom outcome and quality of life in acceptance-based behavior therapy and applied relaxation for generalized anxiety disorder</p> <p><b>Eustis et al. (2016)</b> Behav Res Ther USA</p>	<p>To examine reductions in Experiential Avoidance (EA) relative to receiving Evidence-Based Behavioral Therapy (ABBT) or Applied Relaxation (AR) among participants with a principal diagnosis of Generalized Anxiety Disorder (GAD).</p>	<p>RCT  1B</p>	<p>Evidence-Based Behavioral Therapy (EBBT); Applied Relaxation (AR).</p>	<p>A greater change in Experiential Avoidance (EA) across treatment significantly predicted change in worry (PSWQ) and quality of life (QOLI) across both treatments. These results contribute to the body of literature on common mechanisms of change across traditional CBTs and mindfulness and acceptance-based approaches.</p>
<p>Collaborative nurse-led self-management support for primary care patients with anxiety, depressive or somatic symptoms: Cluster-randomised controlled trial (findings of the SMADS study)</p> <p><b>Zimmermann et al. (2016)</b> Int J Nurs Stud Germany</p>	<p>To evaluate the effectiveness of a complex primary care-based, nurse-led intervention to promote self-care in patients with anxiety, depressive or somatic symptoms.</p>	<p>RCT  1B</p>	<p>Management techniques to promote self-management; problem-solving techniques; relaxation exercises (RA); strengthening and self-confidence activity.</p>	<p>A complex, nurse-led intervention, implemented as a collaborative care model, increased perceived self-efficacy in patients with symptoms of anxiety, depression or somatization compared to control patients. For the first time in the German healthcare system, the trial validated the belief that a nurse can successfully complement the work of a general practitioner - particularly in supporting self-management of patients with psychosomatic symptoms and their psychosocial needs.</p>



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<p>The unified protocol for transdiagnostic treatment of emotional disorders compared with diagnosis-specific protocols for anxiety disorders: A randomized clinical trial</p> <p><b>Barlow et al. (2017)</b>          JAMA Psychiatry          USA</p>	<p>To determine whether the Unified Protocol for Transdiagnostic Treatment of Emotional Disorders (UP) is at least as effective as Single Disorder Protocols (SDPs) in treating anxiety disorders.</p>	<p>RCT  1B</p>	<p>Unified Protocol for Transdiagnostic Treatment of Emotional Disorders (UP); Single Disorder Protocol (SDPs)</p>	<p>UP produces symptom reduction equivalent to standard evidence-based psychological treatments for anxiety disorders with less stress. Thus, it may be possible to use one protocol rather than multiple SDPs to treat more efficiently the most commonly occurring depressive and anxiety disorders.</p>
<p>Trajectories of social anxiety, cognitive reappraisal, and mindfulness during an RCT of CBGT versus MBSR for social anxiety disorder</p> <p><b>Goldin et al. (2017)</b>          Behav Res Ther          USA</p>	<p>To investigate the impact of Cognitive Behavioral Group Therapy (CBT) vs. Mindfulness-Based Stress Reduction (MBSR) on social anxiety trajectories, cognitive reappraisal, and mindfulness.</p>	<p>RCT  1B</p>	<p>Full Attention (FA) exercises; Psychoeducation. Cognitive restructuring (skill training exercises and practices).</p>	<p>CBGT and MBSR produced similar trajectories showing decreases in social anxiety and increases in reappraisal (changing the way of thinking) and mindfulness (mindful attitude). Compared to MBSR, CBGT produced greater increases in disputing anxious thoughts/feelings and reappraisal success. Compared to CBGT, MBSR produced greater acceptance of anxiety and acceptance success. Granger Causality analyses revealed that increases in weekly reappraisal and reappraisal success predicted subsequent decreases in weekly social anxiety during CBGT (but not MBSR), and that increases in weekly mindful attitude and disputing anxious thoughts/feelings predicted subsequent decreases in weekly social anxiety during MBSR (but not CBGT). This examination of temporal dynamics identified shared and distinct changes during CBGT and MBSR that both support and challenge current conceptualizations of these clinical interventions.</p>
<p>Upregulating the positive affect system in anxiety and depression: Outcomes of a positive activity intervention</p> <p><b>Taylor, Lyubomirsky, &amp; Stein (2017)</b>          Depress Anxiety          United Kingdom</p>	<p>To evaluate the efficacy of a new Transdiagnostic Positive Activity Intervention (PAI) for anxiety and depression.</p>	<p>RCT  1B</p>	<p>PAI.</p>	<p>The PAI group displayed significantly larger improvements in positive affect and psychological well-being from pre- to posttreatment compared to the waitlist group. The PAI regimen also resulted in significantly larger reductions in negative affect, as well as anxiety and depression symptoms, compared to the waitlist group.</p>
<p>Anxiety reduction through art therapy in women. Exploring stress regulation and executive</p>	<p>To verify anxiety reduction in women with anxiety disorders, treated with Art Therapy (AT).</p>	<p>RCT  1B</p>	<p>Anthropophosic Art Therapy.</p>	<p>AT improves heart rate and resting heart rate variability and daily behavioral and cognitive performance aspects of executive functioning.</p>



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functioning as underlying neurocognitive mechanisms

**Abbing et al. (2019)**  
 PloS one  
 Netherlands

Approaching cognitive behavior therapy for generalized anxiety disorder from a cognitive process perspective

**Hirsch et al. (2019)**  
 Frontiers in Psychiatry  
 United Kingdom

To investigate the effectiveness of Cognitive Behavioral Therapy (CBT) in the treatment for Generalized Anxiety Disorder (GAD).

RCT  
 1B  
 CBT.

Techniques that maximize the impact of interventions on key cognitive processes that maintain worry can lead to effective treatment. Formal evaluation of CBT for GAD guided by a cognitive process view of GAD in the form of a full randomized control trial is consequently indicated to continue to strengthen client outcome for this common and debilitating condition.

Emotion regulation as the mediator of reductions in anxiety and depression in the Unified Protocol (UP) for transdiagnostic treatment of emotional disorders: Double-blind randomized clinical trial

**Khakpoor, Saed, & Armani Kian (2019)**  
 Trends Psychiatry Psychother  
 Iran

To investigate the treatment outcomes of therapy using the Unified Protocol (UP) for the transdiagnostic treatment of emotional disorders.

RCT  
 1B  
 UP.

UP can significantly reduce anxiety and depression in the treatment group compared to the control group. The present study provides promising evidence showing, in addition to the efficacy of the UP for reducing anxiety and depressive symptoms, that emotion regulation plays an important role in the UP for emotional disorders.

Enhancing autonomy-connectedness in patients with anxiety disorders: A pilot randomized controlled trial

**Maas et al. (2019)**  
 Frontiers in Psychiatry  
 France

To examine the relative effectiveness of 15 sessions of Autonomy Enhancing Treatment (AET) compared to a waitlist control condition in a sample of patients with anxiety disorders.

RCT  
 1B  
 AET – Psychoeducation.

Both analyses suggested a larger decrease in agoraphobic symptoms in the experimental treatment than in the waitlist condition. The effect size was small. The completers analyses showed additional beneficial effects in two of three autonomy-connectedness components, as well as psychoneuroticism, anxiety, and depression, which disappeared after correcting for multiple testing. AET may alleviate agoraphobic symptoms in a patient sample with severe anxiety.

The effectiveness of art therapy for anxiety in adult women: a randomized controlled trial

**Abbing et al. (2019)**  
 Front Psychol

To study the effectiveness of Anthropophosic Therapy (AT) on anxiety in adult women.

RCT  
 1B  
 Anthropophosic Therapy.

AT is effective in reducing anxiety symptoms, improving quality of life and aspects of emotional regulation.



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Netherlands				
<p>A randomized clinical trial of group and individual cognitive-behavioral therapy approaches for social anxiety disorder</p> <p><b>Neufeld et al. (2020)</b>            International Journal of Clinical and Health Psychology            Brazil</p>	<p>To evaluate the effect of two Cognitive Behavioral Therapy (CBT) interventions for social anxiety: individual Test-Based Cognitive Therapy (TBCT), a new therapy in the field, and Group CBT (GBCT), a group therapy based on exposure through high social cost and cognitive restructuring.</p>	<p>RCT            1B</p>	<p>Individual CBT and GCBT.</p>	<p>Both interventions reduced psychiatric symptoms from pre- to post-test and primary social anxiety and depression symptoms relative to waitlist controls.</p>
<p>Enhancing social connectedness in anxiety and depression through amplification of positivity: Preliminary treatment outcomes and process of change</p> <p><b>Taylor et al. (2020)</b>            Cogn Ther Res            USA</p>	<p>To evaluate the response to the anxiety disorder (AD) and depression treatment using a positive activity intervention protocol – Amplification of Positivity (AMP)</p>	<p>RCT            1B</p>	<p>Positive Activity Intervention Protocol.</p>	<p>The AMP group displayed significantly larger improvements in social connectedness from pre- to post-treatment compared to waitlist; improvements were maintained through 6-month follow-up. Within the AMP group, increases in PA and decreases in NA both uniquely predicted subsequent increases in connectedness throughout treatment.</p>
<p>The effectiveness of acceptance and commitment therapy for social anxiety disorder: A randomized clinical trial</p> <p><b>Khoramnia et al. (2020)</b>            Trends Psychiatry Psychother            Iran</p>	<p>To evaluate the effectiveness of acceptance and commitment therapy (ACT) for improving psychological symptoms in students with social anxiety disorder.</p>	<p>RCT            1B</p>	<p>ACT.</p>	<p>ACT can be appropriate to reduce the symptoms of people with social anxiety disorder and help them to promote psychological flexibility.</p>

Delineation RCT: Randomized Controlled Trial.



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### RESULTS

A total of 6,646 articles related to the theme was found. The PubMed database search resulted in 2,395; in WoS, 3,814 articles were identified; in CINAHL, 102 articles were selected; finally, in the VHL database, a total of 335 studies were obtained. When duplicates were removed by automation complemented with checking through the Rayyan app<sup>20</sup>, 5,463 articles were catalogued. Of these, 135 articles were eligible for evaluation with full reading by two independent authors. Because they did not match the research question, 97 articles were disregarded and 2 were excluded for not following the full-text criteria.

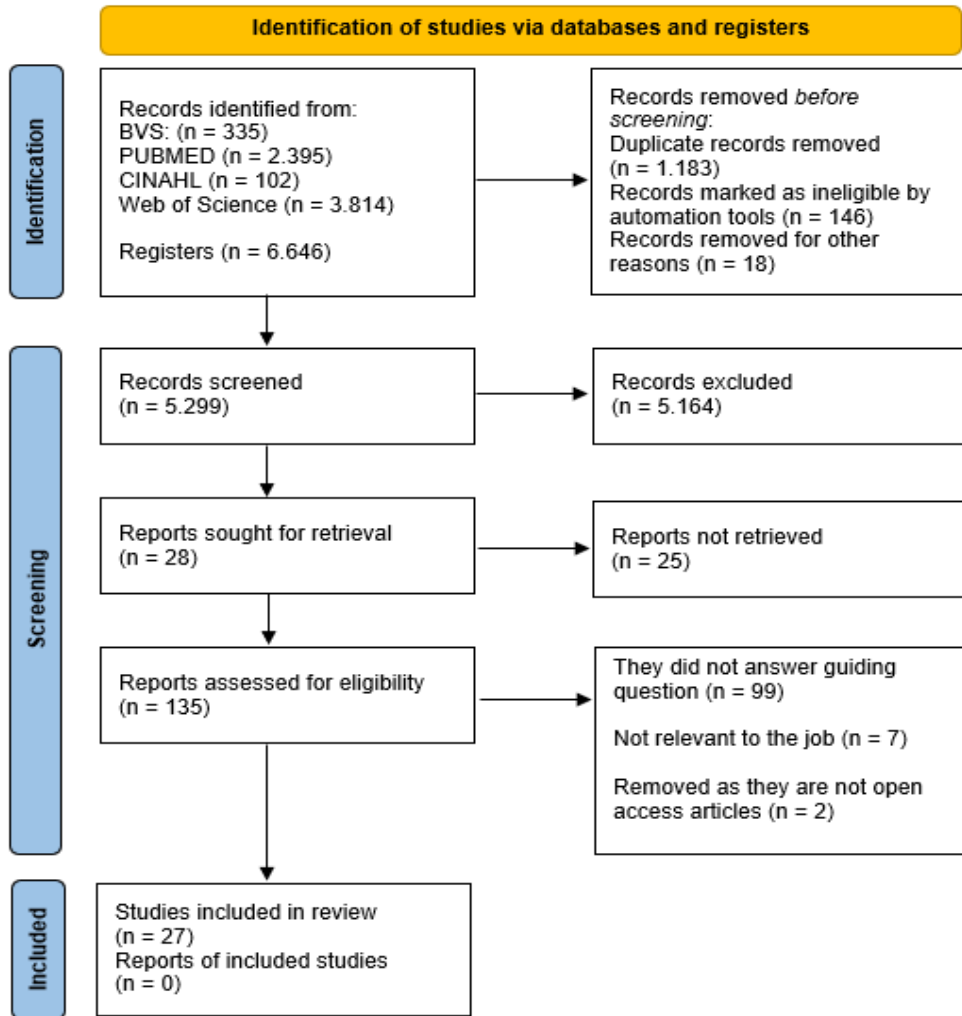
Subsequently, another nine articles were considered irrelevant to the current study, and these were excluded by a third opinion. This resulted in 27 articles that were included because they were within the inclusion criteria of this research. The reference lists of these articles were also considered to assess if there was further research to be selected. The study inclusions and exclusions are illustrated in the PRISMA flow chart (Figure 1).<sup>21</sup>



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Figure 1 - SR development flow diagram for inclusion and exclusion of studies. Porto Alegre, 2021



Regarding the interventions used, in eight studies<sup>22-28</sup> the proposed intervention comprised Psychoeducation. Mindfulness was found in four studies.<sup>22,27-31</sup> Acceptance-Based Behavioral Therapy (ABBT) and Applied Relaxation (AR) were applied in three studies.<sup>32-34</sup> Dialectical Behavioral Therapy (DBT) was the intervention used in three studies.<sup>30,35,36</sup> Transdiagnostic Cognitive Behavioral Therapy (CBT) was described in two studies.<sup>24,37</sup> Positive activity techniques were applied in two studies.<sup>38,39</sup> Individual and group CBT were used in three studies.<sup>40-42</sup> Two studies<sup>35,36</sup> used the Unified Protocol for Transdiagnostic Treatment of Emotional Disorders (PU), and one study<sup>39</sup> used the Positive Activity Intervention Protocol. Art therapy (AT) was an intervention tool in two studies.<sup>43,44</sup> The transcendence technique multifaceted spiritually based intervention (SBI) was identified in only one study.<sup>45</sup> It is worth



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noting that in some studies more than one intervention was applied in order to obtain effective results for anxiety reduction.<sup>22,24,25,27,28,31,32,34,37,41</sup>

With reference to the setting, five studies<sup>23,25,27,31,46</sup> took place in Specialized Mental Health Centers; three studies<sup>35,40,42</sup> were conducted in General Outpatient Clinics; two studies<sup>43,44</sup> took place in 25 private art therapy clinics spread across the Netherlands; and one study<sup>37</sup> was held in a Primary Health Care (PHC) Center. The remaining studies did not report the care settings for AD.

The interventions for decreasing AD and depression were delivered by professionals with expertise in mental health.<sup>23,25,37,40,42</sup> No different results were evident in studies conducted by nonexpert professionals.<sup>22,24,26-36,38,39,41,43-48</sup>

Seekles et al.<sup>25</sup> noted in their study that a self-help group showed better results in decreasing anxiety symptoms compared to the usual care group, however, self-help seems only slightly superior to the usual care and therefore may not be an effective tool in general practice. Yoshinaga et al.<sup>42</sup> used individual CBT, demonstrating favorable outcomes for social anxiety disorder (SAD). Maas et al.<sup>23</sup> evaluated whether autonomy enhancing treatment (AET) could alleviate agoraphobic symptoms in a sample of patients with severe anxiety. Analyses showed additional beneficial effects on two of the three connection components of autonomy, as well as nervous habits, anxiety, and depression, which disappeared after correction for multiple testing. Hirsch et al.<sup>40</sup> investigated the effectiveness of the CBT for generalized anxiety disorder, highlighting the indication of the intervention to strengthen the positive outcome in decreasing this common and debilitating condition. Ejeby et al.<sup>37</sup> compared the effects of the CBT and the multimodal intervention (MMI) on quality of life and psychological symptoms relief in patients with common mental disorders or problems treated in primary health care centers. Analyses showed that both interventions significantly improved the psychological symptoms of study participants.

Norton and Barrera<sup>24</sup> compared transdiagnostic CBT interventions to diagnosis-specific CBT, and found that the group approach (transdiagnostic), coupled with psychoeducation and cognitive restructuring, provide effective and efficient treatment for AD. In another study, Norton<sup>46</sup> compared the effectiveness of a transdiagnostic CBT treatment for AD with a comprehensive relaxation training program (RLX). Despite a higher dropout rate from relaxation treatment, significant and equivalent results were observed between the two interventions, not altering treatment credibility, and decrease of anxiety symptoms.

Among the interventions delivered by non-specialists, there was a prevalence of psychoeducation<sup>22,26-28,31,38</sup> with emphasis on mindfulness exercises, breathing and muscle relaxation, diaphragmatic breathing, problem restructuring, autonomy improvement, and strengthening and self-confidence activity.

Sinnema et al.<sup>26</sup> worked with individual and group practices for anxiety recognition and, after implementation of the intervention program for anxiety and depression, showed positive results on adaptation, with decreased prescriptions for antidepressants or referrals to specialized mental health



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services. Zimmermann et al.<sup>28</sup> report in their study that a nurse-led psychoeducation intervention, implemented as a collaborative care model, increased perceived self-efficacy in patients with anxiety symptoms. This German study also validated the belief that a nurse aide can successfully complement the work of a general practitioner by supporting the self-management of patients with psychosomatic symptoms and psychosocial needs.

In Goldin et al.'s<sup>22</sup> study, which compared CBGT and Mindfulness-Based Stress Reduction (MBSR), with mindfulness practices, psychoeducation, and cognitive restructuring (skill training exercises and practices), showed similar trajectories in the groups, showing decreases in social anxiety and increases in reappraisal (changing the way of thinking) and mindfulness (conscious attitude).

Treanor et al.<sup>27</sup>, in using the psychoeducation interventions, mindfulness exercises, diaphragmatic breathing, and muscle relaxation (adapted from the CBT protocol), obtained promising evidence for the treatment of generalized anxiety disorders, with significant effects, as did Vogel et al.<sup>31</sup>, who validated the effectiveness of Attention Training Techniques (ATT) and Situational Attention Refocusing (SAR) for decreasing ADs, brief techniques designed to increase attention flexibility, which pointed to significant changes in symptoms of Social Anxiety Disorder.

Other studies<sup>29,30,32-34,38,41,45,46-48</sup> delved into the SBIs Acceptance-Based Behavioral Therapy (ABBT), Acceptance Therapy (ACT), transdiagnostic CBT and interpersonal psychotherapy, and Emotional Regulation Therapy (ERT).

In the study by Koszycki et al.<sup>45</sup>, which aimed to evaluate the acceptability and initial effectiveness of an SBI intervention, the intervention was applied to patients from diverse religious and spiritual backgrounds, with basic teachings found in many religious traditions as opposed to teachings of a specific faith group. The intention-to-treat analysis revealed that the SBI and the CBT demonstrated comparable effectiveness in reducing anxiety, excessive worry, and depressive symptoms.

Interventions delivered through Acceptance-Based Behavioral Therapy (ABBT) and Applied Relaxation (AR), on the other hand, showed significant changes in worry and quality of life in the individuals treated in the studies by Eustis et al.<sup>32</sup>. These results compare with Millstein et al.'s<sup>47</sup> study in ABBT and Applied Relaxation based approaches, which highlight how developing mindfulness can be related to significant change in interpersonal problems during treatment and at the follow-up.

Hayes-Skelton et al.<sup>34</sup> examined decentralization as a potential mechanism of action in two treatments for generalized anxiety disorder compared to ABBT and AR interventions; in another study, Hayes-Skelton et al.<sup>33</sup> examined whether an empirically and theoretically derived treatment combining mindfulness and acceptance-based strategies with behavioral approaches would improve outcomes in the treatment of generalized anxiety disorder (GAD) compared to an empirically supported treatment. In both studies it was noted that there was no significant difference during the follow-up, indicating maintenance of gains with both interventions. In the study that addressed the Acceptance Therapy





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(ACT), effectiveness for improving psychological symptoms in students with SAD was evaluated, showing significant results for decreasing symptoms and promoting psychological flexibility.<sup>29</sup>

Stangier et al.'s<sup>48</sup> study compared interpersonal relationships, through Interpersonal Psychotherapy (IPT) with Cognitive Therapy (CT) and found that CT and IPT maintained significant improvements after one year of treatment. However, CT was more effective than IPT in reducing social phobia symptoms.

Taylor et al.<sup>38</sup> evaluated the effectiveness of a new transdiagnostic positive activity intervention (PAI) for anxiety and depression. The transdiagnostic positive activity intervention group exhibited significantly greater improvements in positive affect and psychological well-being from pre-to posttreatment and resulted in reductions of negative effects, as well as anxiety and depression symptoms, compared to the waitlist group.

Mennin et al.<sup>30</sup> aimed in an open study to investigate the effectiveness of emotion regulation therapy in patients with GAD and recurrent depressive symptoms. Over the three-to-nine-month period, patients-maintained gains, evidencing significant improvements in symptom severity, impairment, quality of life, and model-related outcomes, including emotional/motivational intensity, attendance/acceptance, decentralization, and cognitive reappraisal.

Neufeld et al.<sup>41</sup> evaluated the effect of two interventions for patients with symptoms of anxiety and social depression: individual Test-Based Cognitive Therapy (TBCT) versus CBGT, based on exposure through high social cost and cognitive restructuring. Both have reduced psychiatric symptoms from pre- to post-test and symptoms of anxiety and primary social depression.

In two studies that addressed Anthroposophic Art Therapy as an intervention, Abbing, Sonnevile et al.<sup>44</sup> explored possible working mechanisms of anxiety reduction in women with AD, treated with art therapy (AT), evidenced improvement in heart rate and resting heart rate variability and daily behavioral aspects. Abbing, Baars et al.<sup>43</sup>, in a second study, which verified the effectiveness of AT on anxiety in adult women, showed that AT is effective in reducing anxiety symptoms, improving quality of life and aspects of emotional regulation.

Regarding the two studies in which the Unified Protocol for Transdiagnostic Treatment of Emotional Disorders (UP) was used<sup>35,36</sup> as an intervention tool, it was evidenced that the UP provides efficacy in reducing anxiety, playing an important role for emotional disorders. In a third study, Taylor et al.<sup>39</sup> used the Positive Activity Intervention Protocol, which suggests that positive emotions, negative emotion reduction, and positive activity interventions can be valuable for increasing social connection in individuals with anxiety or depression.

Taking into consideration the characteristics of the studies and their aggregated results, the quality of evidence produced in this review was analyzed in the research design, using the Oxford Centre for Evidence-Based Medicine<sup>19</sup> Classification, with the presentation of grade of recommendation "A" and level of evidence 1B, as visualized in Table 1.



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### DISCUSSION

Understanding the importance of a multidisciplinary team for the treatment of people with AD, in this integrative review, no restrictions were made regarding the specialty of the professionals who performed the therapeutic interventions for AD. Regardless of the training of the professionals presented, whether they were specialists in mental health and psychiatry or not, it was identified among the studies that the therapeutic interventions presented showed a reduction in anxiety levels.

In the studies in which the practices were carried out by non-specialist professionals, they had a brief training in specific CBT techniques with the supervision of professionals experienced in the techniques of the chosen interventions. The treatments varied among the studies, demonstrating, however, that common therapeutic intervention practices among them evidenced that the choice of one approach does not exclude the others, according to numerous clinical trials and meta-analyses that demonstrated the effectiveness of psychotherapies in various disorders.<sup>49</sup>

In the studies that addressed AD with women, Abbing, Sonnevile et al.<sup>44</sup> and Abbing, Baars et al.<sup>43</sup> identified the reduction of anxiety levels and the improvement of health and quality of life, which is in line with other studies that emphasize the relevance of actions for prevention and treatment, preventing ATs from raising the rates of comorbidities and morbidities.<sup>50,51,52</sup> It is worth noting that although the studies refer that the interventions were performed by professionals specialized in anthroposophic art therapy, no references were found in the literature indicating the need for specialization in art therapy intervention.

In this research, only one study addressed spirituality as an intervention<sup>45</sup>, through the SBI intervention that, in conjunction with the CBT, obtained significant improvements in GAD, contemporizing with previous study<sup>53</sup>, which demonstrated how religious psychotherapy can increase spiritual well-being, contributing to positive mental health outcomes.<sup>45</sup> However, it is known that this study was incipient, as it is not aware of the interaction mechanisms, being corroborated by the study of Oliveira and Junges<sup>53</sup>, which noted the absence of evidence that the SBI would present differentiation compared to any other psychotherapy.

Among the most commonly performed interventions in the studies<sup>22-28</sup>, psychoeducation stood out, with effective resolution for the AD, associated with the application of the mindfulness approach, with diaphragmatic breathing exercises, muscle relaxation, management technique to promote self-management, problem-solving technique, and empowerment and self-confidence activity. Nogueira, Crisostomo, Souza, and Prado<sup>54</sup> reinforce that psychoeducation is a relevant CBT technique, with significant improvement in the domains of autonomy, leisure, and interpersonal relationships. According to Beentjes, Gaal, Achterberg, and Goossens<sup>55</sup>, the script for building a self-care intervention should be considered an essential model of care in supporting self-management for people with mental health problems.



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An important aspect to note is about the care setting. The studies that reported the level of complexity of care were mostly conducted in mental health centers.<sup>23,25,27,31,46</sup> However, it is possible to note that the effectiveness of the interventions delivered does not differ from the outcomes of the interventions delivered in non-specialized mental health settings, such as in a PHC center<sup>37</sup>, in which the participants had a significant improvement in quality of life and relief of psychological symptoms of common mental disorders when receiving the CBT, corroborating another study that reinforces that the PHCs have the potential to act in improving mental health, in addition to promoting a short-term economic benefit for patients with mild to moderate anxiety and depression.<sup>56</sup>

In the study by Ejeby et al.<sup>37</sup>, Yoshinaga et al.<sup>42</sup>, and Zimmermann et al.<sup>28</sup>, interventions delivered by non-specialist nurses and with different CBT techniques, such as individual CBT (CBT based on Clark and Mells' model), transdiagnostic and psychoeducation, showed significant reduction in anxiety. In previous studies, CBT intervention techniques performed by non-specialist nurses, but with adapted training for anxiety, evidenced anxiety symptom reduction, showing no differentiation in outcomes from interventions performed by specialist nurses.<sup>56-60</sup> Zimmermann et al.<sup>28</sup> validated that a nurse aide can successfully complement the work of a general practitioner by supporting the self-management of patients. This finding should be taken into consideration, since the prevalence of anxiety disorders is significant<sup>2</sup> and that patients affected with these disorders have functional impairments<sup>61</sup> and seek more health services.<sup>62</sup> The implementation of a model of care performed by a nurse with education or training to perform mental health interventions in primary health care (PHC), individually and/or in groups, may minimize the problems listed.

### LIMITATIONS

A limiting aspect of this study, when searching the databases, was the scarcity of national publications that explore the use of therapeutic interventions, presenting only the reference of one study pertinent to the theme, which may be related to the fact that, in the last 10 years, the application of therapeutic interventions has been recent in Brazil.

### CONCLUSION

The therapeutic interventions used for the treatment of ADs that were identified in this study proved to be effective in reducing anxiety symptoms. Among the interventions, Mindfulness and Psychoeducation have stood out.

Many of these interventions are widely described in the literature. This allows the execution of the interventions by a multidisciplinary team and the implementation of primary health care services, reaching a larger number of beneficiaries. Among health professionals, it was pointed out that nurses



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can promote self-management of patients, which enables autonomy and cost reduction for the health system.

However, this research indicates the need for new Brazilian studies focused on evidence of positive results to treatments for AD, in which therapeutic actions are present, using the interventions described in this study.

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