# Non-pharmacological forms of management of anxiety and depression among healthcare students

# Formas de manejo não farmacológicas da ansiedade e depressão entre estudantes da área da saúde

# Formas no farmacológicas de manejo de la ansiedad y depresión entre estudiantes de atención médica

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#### RESUMO

**Objetivo:** Investigar a literatura acerca de estratégias não farmacológicas de manejo da ansiedade e depressão entre estudantes da área da saúde, identificando métodos eficazes que promovam qualidade de vida. **Método:** Esta revisão de escopo seguiu a estrutura metodológica PRISMA-ScR. Primeiramente foi elaborada a pergunta de pesquisa, seguindo o modelo Paciente (P), Contexto (C), Conceito (C) (PCC). Em seguida, realizou-se a busca dos artigos, utilizando termos de busca do DeCS/MesH, combinados com operadores booleanos, nas bases científicas PubMed, Embase, Scielo e Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS). Os estudos resultantes foram importados para o software de gerenciamento de referências Rayyan. Depois, dois revisores independentes selecionaram os artigos, seguindo critérios de inclusão e exclusão, e esses foram organizados em tabelas. **Resultados:** Ao todo 19 artigos estavam alinhados aos objetivos desta pesquisa, destacando-se ensaios clínicos randomizados (57,89%) e estudos observacionais (15,79%). Do total, 4 artigos deram enfoque em fatores de risco e prevalência de sintomas, enquanto os outros 15 abordaram manejos e suas repercussões. **Conclusão:** Os resultados encontrados por esta revisão indicam uma tendência crescente de integrar práticas baseadas em evidências, focadas no bem estar e na redução do estresse.

Descritores: Ansiedade; Depressão; Estudantes de Ciências da Saúde; Terapêutica.

#### ABSTRACT

**Objectives** to assess the literature on non-pharmacological strategies for managing anxiety and depression among health science students, and identifying effective methods that promote quality of life. **Method:** This scoping review followed the PRISMA-ScR methodological framework. First, the research question was developed following the Patient (P), Context (C), Concept (C) (PCC) model. A search of articles was then conducted using DeCS/MesH terms, combined with Boolean operators, in the scientific databases PubMed, Embase, Scielo, and the Latin American and Caribbean Health Sciences Literature (LILACS). The resulting studies were imported into the Rayyan reference management software. Two independent reviewers then selected the articles based on inclusion and exclusion criteria, which were organized into tables. **Results:** A total of 19 articles met the objectives of this research, with a predominance of randomized clinical trials (57.89%) and observational studies (15.79%). Of the total, 4 articles focused on risk factors and symptom prevalence, while the other 15 addressed management strategies and their implications. **Conclusion:** The results of this review indicate a growing trend to integrate evidence-based practices focused on well-being and stress reduction.

Descriptors: Anxiety; Depression; Health Science Students; Therapy.

#### RESUMEN

**Objetivo:** Investigar la literatura sobre estrategias no farmacológicas para el manejo de la ansiedad y depresión entre estudiantes del área de la salud, identificando métodos efectivos que promuevan la calidad de vida. **Método:** Esta revisión de alcance siguió el marco metodológico PRISMA-ScR. Primero se elaboró la pregunta de investigación, siguiendo el modelo Paciente (P), Contexto (C), Concepto (C) (PCC). Luego, se realizó la búsqueda de artículos utilizando términos de búsqueda de DeCS/MesH, combinados con operadores booleanos, en las bases científicas PubMed, Embase, Scielo y Literatura Latinoamericana y del Caribe en Ciencias de la Salud (LILACS). Los estudios resultantes fueron importados al software de gestión de referencias Rayyan. Después, dos revisores independientes seleccionaron los artículos, siguiendo criterios de inclusión y exclusión, y estos fueron organizados en tablas. **Resultados:** 19 artículos estaban alineados con los objetivos de esta investigación, destacándose ensayos clínicos aleatorizados (57,89%) y estudios observacionales (15,79%). De esos, 4 artículos se centraron en factores de riesgo y prevalencia de síntomas, mientras que los otros 15 abordaron manejos y sus repercusiones. **Conclusión:** Los resultados encontrados indican una tendencia creciente a integrar prácticas basadas en evidencia, enfocadas en la reducción del estrés.

Descriptores: Ansiedad; Depresión; Estudiantes de Ciencias de la Salud; Terapéutica.

# Introduction

Anxiety and depression are psychosocial disorders widely recognized for their negative impact on individuals' quality of life and functionality. Anxiety is defined as a vague and unpleasant feeling of fear, apprehension, characterized by tension or discomfort derived from anticipation of danger, of something unknown or strange. These symptoms can interfere with daily life, making it difficult to relax and concentrate, especially in evaluation or performance situations<sup>1</sup>. Depression, in turn, is a psychiatric illness that produces changes in mood and causes patients a deep, endless sadness, with feelings of pain, bitterness, disenchantment, hopelessness, low self-esteem, guilt, and also sleep and appetite disorders<sup>2</sup>. When left untreated, both disorders can progress to more serious clinical conditions, causing significant damage in the academic, social, and occupational areas of the individual.<sup>1,2</sup>

Students in the health area, such as medicine, nursing and psychology face a combination of specific stressors, such as high workload, frequent contact with human suffering, pressure to perform at high standards and intense moral responsibility, aspects that directly impact the mental health of these individuals and can lead to the development of disorders such as depression and anxiety.<sup>3</sup> In addition to the immediate impacts on mental health, these disorders can have lasting repercussions that extend beyond the university period, accompanying students in the transition to the work environment. In the context of health, this continuity of anxiety and depression symptoms can directly affect the quality of care provided, as professionals often must deal with high-pressure situations and make quick and accurate decisions, often in direct contact with vulnerable patients. Thus, impaired performance due to these disorders can harm both the professional and the individuals in their care, resulting in significant ethical and safety impacts.

Understanding and implementing non-pharmacological management strategies for anxiety and depression in health students is therefore essential. These approaches can promote emotional well-being and reduce dependence on drug interventions, favoring a healthier adaptation to the academic environment and the future professional environment. This article seeks to explore the literature on non-pharmacological forms of management of anxiety and depression among health students, with the aim of identifying effective methods that can contribute to the mental health and performance of these future professionals, strengthening the care and safety of their future patients.

In this sense, the objective of this study was to investigate the literature on non-pharmacological strategies for managing anxiety and depression among health students, identifying effective methods that promote personal and professional quality of life.

# Methodology

This study is a scoping review, which aims to map the quantity and quality of existing research on a specific topic, identify gaps in knowledge, and provide an overview of the available evidence. This scoping review was conducted following the methodological framework proposed by the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) checklist, a tool consisting of 27 items that assist in the preparation of reviews. The first step was the clear definition of the research question from the PCC method: "What are the non-pharmacological forms of management that can help in the treatment of depression and anxiety among health students?"

#### Search strategy

The databases searched included PubMed, Embase, Scielo and Latin American and Caribbean Literature on Health Sciences (LILACS), due to their coverage and relevance in the areas of health and pharmacology. Specific search terms derived from the DeCS/MesH thesaurus were used, combined with Boolean operators.

To write the search strategy in the PubMed, Scielo Embase and LILACS databases, the descriptors in the DeCS/MeSH platform were selected. Thus, the strategy developed comprised the following terms: (Health Occupations Students OR Health Occupations Student OR Occupations Student, Health OR Occupations Students, Health OR Student, Health Occupations OR Dental Student OR Dental Students OR Student, Medical OR Nursing Student OR Nursing Students OR Student, Nursing OR Nurses, Pupil OR Nurse, Pupil OR Pupil Nurse OR Pupil Nurses OR Pharmacy Student OR Pharmacy Students, Public OR Student, Pharmacy OR Health Student, Public OR Health Students, Public OR Public Health Student OR Student, Public OR Health Students, Public OR Public Health Student, Public OR Health Students) AND (Anxiety OR Angst OR Nervousness OR Hypervigilance OR Social Anxiety OR Anxieties, Social OR Anxiety, Social OR Social Anxieties OR Symptom, Depressive OR Emotional Depression OR Depression, Emotional).

### Inclusion criteria

A detailed protocol was developed, which used the following inclusion criteria: (a) articles published in the last 10 years (September 2014 to September 2024), (b) articles made available free of charge; (c) articles available in Portuguese, English or Spanish (or with translation into any of these languages); (d) articles focused on clinical-therapeutic parameters (randomized or non-randomized clinical trials).

### **Exclusion criteria**

To further refine the search process in the databases, the following exclusion criteria were defined: (a) duplicate articles in the databases; (b) articles outside the filter selection criteria; (c) articles that do not remotely cite or cite the main descriptors; (d) incomplete articles or articles in the design phase.

#### Database search and filtering phase

Two independent reviewers searched the aforementioned databases. After this phase, an initial screening was carried out by two independent reviewers, who analyzed the titles and abstracts of the identified studies, applying the inclusion and exclusion criteria, and disagreements were resolved by consensus or based on the decision of a third reviewer who did not participate in this process. The search results were imported in RIS or CSV formats into the Rayyan reference management software, through open access, where duplicates were removed.

#### Extraction phase and evaluation of the level of evidence

Data from the included articles were extracted using a standardized spreadsheet, developed in the free-to-use software Google Sheets, recording information on the title, name of the author(s), year of publication, study design, methodology, language, main results, and conclusions. The articles were analyzed based on the evaluation criteria of the Oxford Centre for Evidence Based Medicine and, subsequently, organized in tables in a synthetic way. All studies were classified according to evaluation criterion 1B according to the degree of recommendation and level of evidence. To synthesize the results, a narrative text was elaborated, in addition to the use of tables, which were important to summarize the information that was found throughout the extensive reading of the studies.

## Results

The search for articles resulted in a sample of 178 articles in PubMed and 9 in the VHL, totaling 187 articles. There were no duplicate articles, leaving 187 studies for the first stage. After the first screening level, 24 articles remained, which, when they went through the second screening level, resulted in 19 articles, and of these, all were included in this study. All the articles that made up the final sample had the data summarized in Table 1, which allowed, above all, the identification of the consequences of these studies and guided the elaboration of the results presented in this article.

Of the 19 articles included in this review according to the inclusion and exclusion criteria established in the methodology, 13 are clinical trials, of which 11 are randomized, 1 is single-blind, and 1 is single-arm; 2 are comparative studies; 1 is a quasi-experimental study and 3 are observational studies. The focus of the 19 articles is divergent, however, all of them, in some way, explore non-pharmacological strategies and approaches related to anxiety in health students. In addition, the places of origin of the productions cover America, Europe, Asia and Oceania. In Europe (Italy, Spain, Sweden and Germany), in Asia (China, South Korea, Turkey, Iran and Saudi Arabia), in America (USA and Brazil) and in Oceania (New Zealand), in addition to an international study. They have, respectively, 4 studies located in Europe, 6 studies in Asia, 7 studies in America and 1 study in Oceania, in addition to 1 study with an international content.

Title	Year and Country	Type of Study/Sample	Objectives	Results
1. Test-reduced teaching for stimulation of intrinsic motivation (TRUST): a randomized controlled intervention study.	2024, Germany	Randomized Clinical Trial n = 166	The primary objective was to investigate the effectiveness of two interventions in medical students during a dissection course to manage stress and improve academic performance. The first intervention, Stress Management (IVSM), involved training focused on strategies to reduce internal stress. The second, Friendly Feedback (IVFF), replaced formal tests with constructive and motivating discussions, promoting autonomy.	The study showed that positive feedback was more effective in reducing stress and anxiety and increasing self-efficacy in medical students during dissection, compared to the control group and the group with stress management training. Participants also reported greater satisfaction and intrinsic motivation. However, there were no significant differences between the groups in terms of perceived knowledge and exam preparation.
2. Effects of auricular acupressure on test anxiety in medical students: a randomized parallel- group trial.	2023, Iran	Randomized Clinical Trial n = 114	The primary objective was to investigate the effect of auricular acupressure at the Shen Men point on test anxiety in medical students.	In the experimental group, the mean anxiety scores decreased significantly from 18.4 to 13.3 (P = 0.001), with more participants having mild anxiety and fewer with severe anxiety. In the control group, there were no significant changes. After the intervention, the difference in anxiety intensity between the groups was statistically significant (P = $0.004$ ).
3. The effectiveness of mindfulness training in improving medical students' stress, depression, and anxiety.	2023, Saudi Arabia	Randomized Clinical Trial n = 84	The study sought to evaluate whether the MBSR program helps improve mindfulness and reduce stress, anxiety, and depression in medical students. It also looked at whether these effects were maintained after three months, how session frequency influenced the results, and whether there were differences in response between genders.	The study found that MBSR was effective in reducing anxiety, especially three months after the intervention. Although the stress reduction in the MBSR group was not significant at all time points, there was a positive trend. Regular participation in MBSR was associated with lower anxiety and depression scores, with men showing greater improvements in mindfulness, anxiety, and stress than women.
4. A compassion- based program to reduce psychological distress in medical students: A pilot randomized clinical trial.	2023 <i>,</i> Spain.	Randomized Clinical Trial n = 44	The study seeks to assess the feasibility of compassion cultivation (CCT) training to reduce psychological distress and improve the well-being of medical students. The hypothesis is that the CCT, compared to the control group, will reduce psychological distress and burnout symptoms, in addition to improving	The study showed that compassion training (CCT) significantly increased self-compassion (p = 0.003), common humanity (p < 0.001), and conscious self-compassion (p = 0.005). It also reduced stress (p < 0.002), anxiety (p = 0.003), and emotional exhaustion (p < 0.001). Improvements were maintained at the two-month follow-up. Satisfaction with the program was high, with an average of 8.76/10, and 94% of participants

Chart 1 - Summary and characteristics of the articles included.

			compassion, empathy, mindfulness, resilience, etc.	stated that they would continue practicing meditation.
5. Improving stress management, anxiety, and mental well-being in medical students through an online Mindfulness-Based Intervention: a randomized study.	2023, Italy	Randomized Clinical Trial n = 362	The aim of this research was to evaluate the effectiveness of an intervention based on mindfulness (Integral Meditation - IM), administered online and consisting of mindfulness practices, dietary advice and brief yoga sessions. The research sought to see if the intervention group would report a decrease in perceived stress and anxiety, as well as an increase in mental well- being, compared to the control group.	The study demonstrated that the practice of Mindfulness Based on Awareness (MBC) can be an effective tool to improve the psychological well-being of medical students. When comparing a group that received MBC training with a control group, the researchers observed significant reductions in stress and anxiety levels, as well as improvements in emotional regulation, mental well-being, and resilience in the intervention group participants. The results suggest that regular mindfulness practice can help students cope with the demands and challenges of medical education, promoting a better quality of life and more satisfactory academic performance.
6. Understanding Aotearoa New Zealand University Students Intentions to Seek Help If Experiencing Mental Distress: A Comparison of Naturalistic and Interventional Findings.	2022, New Zealand.	Clinical Study n = 133	The aim of this study was to assess the impact of interventions to increase intentions to seek mental health support (study 2).	The study evaluated interventions to reduce these barriers. The infographic intervention was more effective in reducing the perception that the problem was not serious enough to seek help, while the video intervention showed no significant differences in relation to the control group.
7. Randomized trial estimating effects of hypnosis versus progressive muscle relaxation on medical students' test anxiety and attentional bias.	2022, China.	Randomized Clinical Trial n = 90	To evaluate the effects of hypnosis compared to progressive muscle relaxation on reducing test anxiety and attentional bias in medical students.	Both groups showed significant reduction in test anxiety, but the hypnosis group had a greater reduction in attentional bias and anxiety levels compared to the PMR group. The hypnosis group also showed a higher clinically meaningful improvement rate (86.67%) compared to the PMR group (62.22%).
8. Impact of the Peer Education Model on Nursing Students' Anxiety and Psychomotor Skill Performance A Quasi- Experimental Study.	2022, Turkey	Quasi- experimental and single-blind study n = 92	To assess the impact of the peer education model on the learning of psychomotor skills and anxiety levels of nursing students.	Both groups showed improved performance in skills after training. However, the experimental group had significantly lower anxiety levels compared to the control group.

9. Training for Awareness, Resilience and Action (TARA) for medical students: a single-arm mixed methods feasibility study to evaluate TARA as an indicated intervention to prevent mental disorders and stress- related symptoms.	2022, Sweden.	Mixed-methods single-arm feasibility study n = 23	To assess the feasibility and acceptability of the TARA program for medical students and to investigate the impact on reducing symptoms of anxiety, depression, and stress.	The TARA program showed a trend toward improvement in symptoms in all measures evaluated. No participants showed significant deterioration. Students reported positive experiences, such as increased self-connection and personal empowerment.
10. Anti-stigma training and positive changes in mental illness stigma outcomes in medical students in ten countries: a mediation analysis on pathways via empathy development and anxiety reduction.	2022, international study in 10 countries.	Non-randomized pre- and post- intervention study n = 570	To assess the effectiveness of READ training in reducing stigma and discrimination related to mental illness among medical students by measuring changes in knowledge, attitudes, and empathy.	The READ intervention significantly improved students' knowledge, attitudes, and communication skills, mediated by increased empathy and reduced intergroup anxiety.
11. Yoga as an adjunct activity for medical students learning anatomy.	2022, United states.	Exploratory qualitative study n = 64	To evaluate whether the practice of yoga as a complementary activity to the anatomy class improves the academic performance of students and reduces stress levels.	There was no significant difference in the scores of the anatomy exams between the groups. However, the intervention group reported significantly lower stress levels after each yoga session and increased confidence in their knowledge of anatomy.
12. A novel model to predict mental distress among medical graduate students in China.	2021, China.	Observational cross-sectional study n = 1079	To identify risk factors associated with mental health and develop a predictive model to assess the likelihood of mental distress among graduate medical students.	Six variables were identified as significant predictors: year of study, type of student, daily research time, monthly income, scientific learning style, and feeling of temporal stress. The model showed moderate prediction performance with an area under the ROC curve of 0.700 in the training group and 0.660 in the validation group.
13. Comparison of dyad versus individual simulation-based training on stress, anxiety, cognitive load, and performance: a randomized controlled trial.	2021, United States.	Randomized Clinical Trial n = 41	To identify, in this pilot study, the relationship between dyad training on stress, anxiety, cognitive load and performance in a simulated bradycardia scenario, in order to address dyad training beyond its effectiveness in teaching procedural skills but from a perspective of its impact on situations of anxiety, stress, cognitive performance and the like.	On day 1, the individual group showed greater mean increases in anxiety (19.6 vs 7.6; $p = 0.020$ ) and stress (1.8 vs 0.9; $p = 0.045$ ) compared to the dyad group. Secondary outcomes showed shorter time to diagnosis of bradycardia ( $p = 0.010$ ) and initiation of stimulation ( $p = 0.040$ ) in the dyad group. On day 4, there were no significant differences in anxiety and stress between the groups. However, the time to recognize the stimulation indication was significantly shorter in

				individual training (HR = $2.26$ ; p = $0.020$ ).
14. Sleepiness, sleep deprivation, quality of life, mental symptoms and perception of academic environment in medical students.	2021, Brazil.	Observational cross-sectional study n = 1350	To analyze the relevance and impact of sleep-related problems and medical students, considering their consequences on the academic performance and mental health of these individuals.	The study showed that 37.8% of the medical students had mild daytime sleepiness and 8.7% moderate/severe sleepiness (Epworth Sleepiness Scale - ESS). Sleepiness was significantly higher in female students (p < 0.050). Students with lower ESS scores had better quality of life, positive perception of the educational environment, and fewer symptoms of depression and anxiety, indicating a dose-effect pattern. Sleep deprivation was associated with higher odds of anxiety and depression symptoms and lower odds of good quality of life or positive perception of the educational environment and set of anxiety and depression symptoms and lower odds of good quality of life or positive perception of the educational environment.
15. Auricular stimulation vs. expressive writing for exam anxiety in medical students- A randomized crossover investigation.	2020, United States	Randomized Clinical Trial n = 37	The study aimed to compare auricular stimulation (AS) with expressive writing (EW) and with the absence of intervention (NI) in the treatment of pre-exam anxiety in medical students	All 37 participants completed the study. AS significantly reduced anxiety levels compared to baseline and remained more effective than EW and NI on the day of the exam. Sleep quality improved after SS compared with the other conditions, and sAA activity decreased after both SS and EW, but not after NI.
16. Effects of Aromatherapy Combined with Music Therapy on Anxiety, Stress, and Fundamental Nursing Skills in Nursing Students: A Randomized Controlled Trial.	2019, South Korea.	Randomized and double-blind clinical trial n = 98	The study aimed to investigate and compare the effects of the combination of aromatherapy and music therapy and the therapies individually by measuring factors such as: test anxiety, state anxiety, stress and performance in fundamental nursing skills in nursing students.	The results showed that the group that received the combination of aromatherapy and music therapy showed significant reductions in test anxiety (F = 4.29, p = 0.016), state anxiety (F = 4.77, p = 0.011) and stress (F = 4.62, p = 0.012), as well as improved performance in nursing skills (F = 8.04, p = 0.001). There were no significant differences between the groups that received either aromatherapy alone or music therapy alone.
17. Effects of a Required Large-Group Mindfulness Meditation Course on First-Year Medical Students' Mental Health and Quality of Life: a Randomized Controlled Trial.	2020, Brazil.	Randomized Clinical Trial n = 141	The study aimed to evaluate the effects of a mandatory course of mindfulness meditation, in large groups, on the mental health and quality of life of first-year medical students, comparing them with a control group that received theoretical content on the organization of the medical school.	There were no significant differences between the intervention group and the control on measures of mental health, quality of life, and FFMQ, with small effect sizes (Cohen's d = 0.01 to 0.14). Changes between pre- and post- intervention also showed no significant gains in the intervention group (Cohen's d = 0.02 to 0.33). Although the course was well received, with 67.1% of participants reporting perceived improvements after meditation, these subjective effects were not observed on objective measures.

18. Symptoms of depression, anxiety, stress and drug use in health students.	2019, Brazil.	Cross-sectional quantitative study n = 111	The study sought to understand the relationship between symptoms of depression, anxiety, stress and the use of substances such as alcohol, tobacco and marijuana in students university students in the health area, analyzing how these factors are interrelated and which the potential impacts on psychological well-being and academic practices.	The study showed that alcohol was the substance most consumed by students, followed by marijuana and tobacco. There was a significant correlation between high levels of anxiety and stress and alcohol use, indicating a greater propensity to consume among these students. Although less prevalent, marijuana and tobacco use also showed a correlation, although less significant, with symptoms of stress and anxiety.
19. Prevalence of anxious and depressive symptoms in health students.	2021, Brazil.	Cross-sectional quantitative study n = 140	The study aimed to analyze the prevalence of anxious and depressive disorders and their associations with sociodemographic, academic, and health habits in university students in the health area.	The prevalence of anxious symptoms was 57.9% and of depressive symptoms, 34.3%. There was a significant association between depression and hours of sleep ( $p = 0.018$ ) and between anxiety and marital status ( $p = 0.021$ ). Occupational Therapy students had a higher prevalence of both symptoms, while medical students had the lowest rates.

## Discussion

The non-pharmacological forms of management of anxiety and depression in health students, as presented in the results of the study, encompass a wide range of interventions, reflecting the diversity of strategies that can be used to promote the mental well-being of this population. In general, the methods stand out for their emphasis on integrative, preventive approaches and focused on the emotional and cognitive strengthening of students.

Beforehand, social and institutional factors were widely discussed, with emphasis on the influence of demographic characteristics – prevalence of anxiety and depression in 57.9% and 34.3% of the health students analyzed, respectively – and perceived barriers to seeking help – which involve stigma, lack of knowledge and support.<sup>3,4</sup> These data reinforce the anxiogenic and stressful aspect that encompasses this population, constantly exposed to situations of human suffering, intense responsibility for the lives of others, academic pressure and competition, making them a highly vulnerable group to anxiety, depression and burnout symptoms and disorders. At the same time, the impact of factors such as sleep deprivation was addressed with a direct association with symptoms of anxiety and depression.<sup>5</sup> As alternatives to mitigate these effects, curricular changes and institutional support were proposed, reinforcing the need for structural interventions to improve quality of life not only in the academic sphere, but also in the personal sphere.

Regarding risk factors and barriers to seeking help, a significant reduction in stigma and discrimination associated with mental illness was observed, combined with improved attitudes and skills such as the impact of READ (Responding to Experienced and Anticipated Discrimination) training, which promotes training in relation to the management of discriminatory situations and fosters empathy.<sup>6</sup> In addition, as a preventive intervention against stress and mental disorders, the efficiency of the TARA (Training for Awareness, Resilience, and Action) program resulted in effective experiences, with increased self-connection and self-knowledge, as well as personal empowerment.<sup>7</sup> It is possible to infer the importance of strengthening students' self-esteem associated with the reduction of prejudices involving mental disorders, in order to prevent extreme situations and enable the search for help, without leaving aside the relevance of strategies that act directly in the treatment of the condition. In view of this, the need for holistic strategies that combine psychosocial and pedagogical, preventive and palliative approaches, creating a more welcoming and inclusive academic environment becomes notorious.

One of the most notable interventions was pair work, which demonstrated a significant reduction in stress and anxiety levels during cognitive and psychomotor assessment scenarios.<sup>8,9</sup> This approach, in addition to preserving individual performance, emphasizes the value of social support in challenging academic environments. Another complementary approach, such as yoga practice, has been shown to be effective in reducing stress and promoting well-being. It was revealed that the practice resulted in fewer negative symptoms and greater self-confidence among the participants, in addition to preserving their academic performance.<sup>10</sup> These are simple forms of management that can be encouraged by educational institutions, with preservation of academic performance in the short term and positive impacts on mental health in the medium and long term.

Among the specific therapies, auricular stimulation and acupressure at the Shen Men point stood out as safe and effective methods to reduce anxiety and improve sleep quality. Auricular stimulation is a therapeutic technique that uses specific points in the ear to treat health conditions, and the Shen Men point in auricular acupressure is a key point to reduce stress, relieve pain, and promote emotional balance.<sup>11,12</sup> In addition, the combination of aromatherapy and music therapy has also shown significant benefits in reducing anxiety and stress, with an additional positive impact on academic performance.<sup>13</sup> These methods, although unorthodox and, therefore, subject to a certain skepticism on the part of the population, demonstrate that simple and accessible interventions can have substantial results in mental and emotional well-being without the need for pharmacological adherence.

On the other hand, more structured programs, such as those based on mindfulness, revealed mixed results. While small-group practice or voluntary adherence has been shown to be effective, large-scale mandatory interventions have limitations.<sup>14-16</sup> These data show that, although potentially positive, the institutionalization of a mindfulness program added to the already extensive workload of health students can lead to a greater overload and result in a rebound effect. Thus, it is essential that there is active involvement and personal commitment to the way of management, so that it is not seen as an obligation – even if it is encouraged by an institution.

Regarding risk factors, the consumption of alcohol, tobacco and marijuana was related to higher levels of anxiety and stress, with alcohol consumption being the one that brings the most harm, in addition to being a factor that favors the use of other substances.<sup>17</sup> These data raise an alert for licit

drugs, which, because they are less stigmatized and more socially consumed, are not seen as harmful so easily. Therefore, preventive strategies based on emotional support and early identification of substance abuse are necessary to avoid harmful ways of coping with anxious and depressive symptoms.

Other innovative approaches, such as hypnosis and compassion cultivation training, have stood out for their effectiveness. Hypnosis showed a significant reduction in generalized anxiety and before exams, while the cultivation of compassion – which is basically characterized by being a standardized psychoeducational meditation program that aims to cultivate compassion and empathy for oneself and others – positively impacted burnout and stress.<sup>18,19</sup> These interventions, despite requiring greater training and adherence, and therefore not being easily accessible to everyone, point to the potential for more specialized methods.

It is important that factors associated with mental distress be viewed with caution, and there is already a tool to identify students at risk early, which facilitates the provision of preventive psychological support.<sup>20</sup> Further studies are needed in this area in order to establish its efficacy with certainty. However, it has already been seen that positive feedback, based on teaching principles that promote autonomy, values the student's effort and progress and creates a welcoming academic environment, also serving as a preventive measure.<sup>21</sup>

In addition, there is a need to highlight the relatively small number of studies on the central theme of this article among some of the largest databases available, even though it is so latent for the population studied. In addition, the lack of studies that considered the social determinants of these students outside the academic environment was perceived, data that would be very relevant to understand and encourage specific forms of management for specific situations. Both realities impaired the breadth of the present article, even if they did not make it impossible to prepare it or affect the quality of the data obtained.

# Conclusion

The aim of this review was to synthesize the evidence on nonpharmacological forms of anxiety and depression management among health students. The results indicate a growing trend towards integrating evidencebased practices focused on promoting resilience, emotional well-being, and stress reduction. Interventions adapted to individual needs, which ensure commitment and balance between academic demands and quality of life, are essential for the success of these initiatives. However, effectiveness depends on contextual and individual factors, such as student engagement and institutional support. Mandatory or poorly structured interventions can be counterproductive, which highlights the importance of adapting actions to students' needs. In addition, the stigma associated with mental health reinforces the urgency of institutional actions to create inclusive and welcoming environments.

We found limitations in the literature, such as the lack of articles on the diversity of forms of management and evidence from multiple studies on the same type of intervention, despite the strong evidence on the prevalence of anxiogenic factors during undergraduate health studies. The review also highlights the need for further studies that explore the relationship between students' social and economic factors and the prevalence of mental disorders, in addition to the relationship with graduation. Finally, it is essential to point out the choice of the population that was the focus of this article, taking into account the aforementioned risk factors for mental disorders involving university students in the health area and the growing need for different forms of management of these conditions. Overall, the interventions presented in this study offer a valuable starting point for promoting the mental health of students in this area.

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