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Anxiety and depression tracking methods in college students: integrative review

Métodos de seguimiento de ansiedad y depresión en estudiantes universitarios: revisión integradora**Métodos de rastreamento da ansiedade e depressão em estudantes universitários: revisão integrativa****ABSTRACT**

Objective: The present research aimed to carry out an integrative review of the literature of instruments used to track depression, anxiety and both in samples of undergraduate students. **Method:** the search took place in PubMed database, from 2009 to 2019. **Results:** Initially, 895 articles were found, of which 345 were included after reading the titles and abstracts; of these, 316 were recovered and 176 were later deleted after reading in full, totaling 140 articles. **Conclusion:** The most used instruments were: a) Anxiety: Beck Anxiety Inventory (BAI) (n = 19) and State-Trait Anxiety Inventory (STAI) (n = 17); b) Depression: Beck Depression Inventory (BDI) (n = 35); and c) Mixed: Depression, Anxiety and Stress Scale (DASS-21) (n = 40) and Hospital Anxiety and Depression Scale (HADS) (n = 19). The most evaluated course was Medicine and the countries with the most articles were China (n = 24) and the United States (n = 20). Brazil published only 7 articles.

DESCRIPTORS: Students; Mental Health; Mental Disorders.

RESUMEN

Objetivo: La presente investigación tuvo como objetivo realizar una revisión integradora de la literatura de los instrumentos utilizados para el seguimiento de la depresión, ansiedad y mixtos (ambos) en muestras de estudiantes de pregrado. **Método:** la búsqueda se realizó en la base de datos PubMed, de 2009 a 2019. **Resultados:** Inicialmente se encontraron 895 artículos, de los cuales 345 fueron incluidos luego de la lectura de títulos y resúmenes; de estos, 316 fueron recuperados y 176 fueron borrados luego de su lectura completa, totalizando 140 artículos. **Conclusión:** Los instrumentos más utilizados fueron: a) Ansiedad: Inventario de Ansiedad de Beck (BAI) (n = 19) e Inventario de Ansiedad Rasgo-Estado (STAI) (n = 17); b) Depresión: Inventario de depresión de Beck (BDI) (n = 35); y c) Mixta: Escala de Depresión, Ansiedad y Estrés (DASS-21) (n = 40) y Escala Hospitalaria de Ansiedad y Depresión (HADS) (n = 19). El curso más evaluado fue Medicina y los países con más artículos fueron China (n = 24) y Estados Unidos (n = 20). Brasil publicó solo 7 artículos..

DESCRIPTORES: Estudiantes; Salud Mental; Transtornos Mentales.

RESUMO

Objetivo: A presente pesquisa teve como objetivo realizar uma revisão integrativa da literatura de instrumentos utilizados no rastreamento de depressão, ansiedade e misto (ambos) em amostras de estudantes de graduação. **Método:** a pesquisa ocorreu na base de dados PubMed, de 2009 até 2019. **Resultados:** Inicialmente foram encontrados 895 artigos, dos quais 345 foram incluídos após a leitura dos títulos e resumos; destes, 316 foram recuperados e posteriormente 176 foram excluídos após a leitura na íntegra, totalizando 140 artigos. **Conclusão:** Os instrumentos mais utilizados foram: a) Ansiedade: Beck Anxiety Inventory (BAI) (n=19) e State-Trait Anxiety Inventory (STAI) (n=17); b) Depressão: Beck Depression Inventory (BDI) (n=35); e c) Misto: Depression, Anxiety and Stress Scale (DASS-21) (n=40) e Hospital Anxiety and Depression Scale (HADS) (n=19). O curso mais avaliado foi Medicina e os países com mais produções de artigos foram China (n=24) e Estados Unidos (n=20). O Brasil publicou apenas 7 artigos.

DESCRIPTORIOS: Estudantes; Saúde Mental; Transtornos Mentais.

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INTRODUCTION

Mental health is closely related to physical health, and physical illnesses and mental disorders result from the interaction of several biological, psychological and social factors. The state of psychopathology interferes with the endocrine and immune systems, increasing the susceptibility to physical diseases.¹

The young population is widely affected by common mental disorders, such as depression, anxiety and stress, mainly university students.² Admission to a university requires students to have several cognitive and emotional resources to deal with the demands of the new environment that they are facing.³ Some characteristics can trigger stress processes in university students, from the entrance exam, of a highly competitive nature; the teaching-learning methodologies different from those used in high school, the choice of specialty, the long periods of class and the amount of new information.⁴

In 2015, it is estimated that 322 million people suffered from depression, equivalent to 4,4% of the world population, and this number has been increasing, especially in low-income countries. Likewise, it is estimated that 264 million people had anxiety, around 3,6% of the world population, and like depression, they are more common in females.⁵

Worldwide, there are several studies of mental health in university students, however, most of them are done through data collection in mental health service units provided by universities⁶ or they are epidemiological surveys carried out with very specific populations, mainly in medical students.^{4,7,8} Given this context, the objective of this research was to carry out an integrative

review of the world scientific literature regarding the most used depression, anxiety and/or stress screening tools in undergraduate students.

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METHODS

An integrative review was carried out according to the six phases of the process of preparing an integrative review^{9,10} and the PRISMA method was used to assist the development of this integrative review. The guiding question was: What are the scales or instruments most used to assess symptoms of anxiety, depression and /or stress in undergraduate students?

The database used was PubMed and the search was carried out on October 15th,

2019. All descriptors used were in English and were chosen according to the interest of the search, using the Boolean operators AND and OR. Thus, the selected terms were anxiety OR anxiety disorder OR anxiety symptoms OR anxiety state AND depression OR depressive disorder OR depressive syndrome OR depressive symptoms AND scale OR instrument OR assessment tool AND adults AND undergraduate OR student. The search included articles in the English language only, published until October 2019, with no time limit applied.

Data collection took place between October 15th and 29th, 2019. The inclusion criteria were: scientific works that used scales to track depression, anxiety and/or stress and samples that contained undergraduate or graduate students. Articles with samples from non-students, children and high school students were excluded.

The search was carried out by one researcher and validated by two other researchers. The selected articles were exported to the Mendeley platform, where those that met the inclusion criteria were selected and stored, according to the reading of the title and abstract. After recovering and reading the full articles, articles published before 2009 were excluded, those with samples that were not exclusive to undergraduate students and those with different interventions. Finally, only articles published between 2009 and 2019 were included, with exclusive samples of undergraduate students over 18 and without the use of interventions.

The articles included at the end of the process had their information compiled in the Excel spreadsheet, where the variables analyzed were: instruments used, area of study, country of conduct of the research and study design.

RESULTS

Initially, 895 articles were found in PubMed and after reading the titles and abstracts, 550 were excluded for presenting samples of non-students, children and/or adolescents. Of 345 remaining articles, 316 were recovered and read in full. 176 articles were excluded for having been published before 2009, or for having non-exclusive samples of undergraduate students and those with interventions; making a total of 140 articles for the final stage. The flowchart of the steps can be seen in Figure 1.

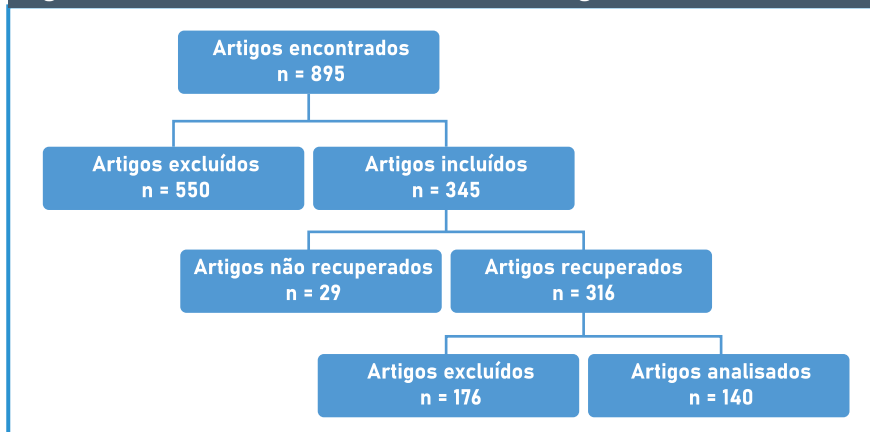
The instruments found in the articles included in the study were divided into three categories: those that evaluated only anxiety, those that evaluated only depression and mixed instruments, that evaluated, among other disorders, anxiety and depression. Table 1 shows all the instruments found.

Among 140 articles, 79 (56,43%) did not specify the area or course of the students; and among those who specified, it was possible to find 25 study areas. Representing the majority, 43 (30,71%) articles evaluated the mental health of the Medicine course, and other courses, such as Psychology and Dentistry, were evaluated in seven (5%) articles and Pharmacy and Nursing, in 5 (3,57%) articles.

In total, 41 countries were found, from five continents. The continent that produced the most articles was Asia ($n = 68$; 48,57%), with emphasis on China, with 24 (17,14%) productions. Then, Europe and America, with the production of 38 (27,14%) and 36 (25,71%) articles, respectively. Among these two continents, Turkey stands out, with 12 (8,57%) articles; and the United States of America, with 20 (14,29%) productions.

The different study designs were also evaluated in this integrative review. Most ($n = 82$, 58,57%) of the studies carried out cross-sectional studies, 54 (38,57%) of the articles did not specify the type of design used; and cohort, longitudinal and case-control studies were used by two (1,43%), 1 (0,71%) and one (0,71%) of the authors, respectively.

Figure 1. Flowchart of studies selected for the integrative review



Source: author (2020)

Table 1. Anxiety, Depression and Mixed Assessment Instruments used in undergraduate students.

Instrumentos	n	%
Ansiedade		
Beck Anxiety Inventory (BAI)	19	13,57
State Trait Anxiety Inventory (STAI)	17	12,14
Generalized Anxiety Disorder 7 (GAD-7)	9	6,43
Self-rating Anxiety Scale (SAS)	5	3,57
Kuwait University Anxiety Scale (KUAS)	3	2,14
Hamilton Anxiety Rating Scale (HAMA)	1	0,71
Generalized Anxiety Disorder 2 (GAD-2)	1	0,71
Situational Anxiety Scale	1	0,71
The Anxiety Symptom Questionnaire	1	0,71
Depressão		
Beck Depression Inventory I e II (BDI)	35	25,00
Center for Epidemiologic Studies—Depression Scale (CES-D)	13	9,29
Patient Health Questionnaire 9 (PHQ-9)	12	8,57
Self-Rating Depression scale (SDS)	7	5,00
Patient Health Questionnaire 2 (PHQ-2)	2	1,43
Hamilton Rating Scale for evaluation of depression (HAMD)	2	1,43
Depressive Experiences Questionnaire (DEQ)	1	0,71
Adolescent Depression Inventory (ADI)	1	0,71
Misto		
Depression, Anxiety and Stress Scale (DASS-21)	40	28,57
Hospital Anxiety and Depression Scale (HADS)	19	13,57
The symptom check-list 90-R (SCL-90-R)	5	3,57
General Health Questionnaire 28 (GHQ-28)	4	2,86
General Health Questionnaire 12 (GHQ-12)	3	2,14
Patient Health Questionnaire 4 (PHQ-4)	2	1,43

The Mood and Anxiety Symptom Questionnaire e Short Form (MASQ-SF)	1	0,71
Chinese College Student Mental Health Scale	1	0,71
Depression and Generalized Anxiety versions of the Mini International Neuropsychiatric Interview (MINI)	1	0,71
Anxiety and Depression subscales of the Brief Symptom Inventory (BSI)	1	0,71
The Hopkins Symptoms Checklist (HSCL-25)	1	0,71
Composite International Diagnostic Interview Screening Scales (CIDI-SC)	1	0,71
Aga Khan University Anxiety and Depression Scale (AKUADS)	1	0,71
Mood and Anxiety Symptom Questionnaire-90 (MASQ-90)	1	0,71

Source: author (2020)

Cronbach's α of 0,85 on the "State" scale and 0,88 on the "Trait" scale. ¹⁴ The Beck Depression Inventory (BDI) questionnaire in its Brazilian version was validated in a sample of university students, with Cronbach's α of 0,89. ¹⁵

Regarding mixed instruments, their Brazilian versions have also been validated. The Depression, Anxiety and Stress Scale (DASS) presented Cronbach's α values of 0,92 for the depression scale, 0,90 for the stress scale and 0,86 for the anxiety scale ¹⁶; e a Hospital Anxiety and Depression Scale (HADS) foi somente validada em amostras de pacientes, apresentando valores de α de Cronbach de 0,68 para a escala de ansiedade e 0,77 para a escala de depressão. ¹⁷

Some similarities can be pointed out in relation to a systematic review carried out in 2019, where the instrument found by the authors as the most used for assessing depression was the Depression, Anxiety and Stress Scale (DASS), found in 11 studies, of a total of 34 analyzed. ¹⁸ The present study showed that the same scale was the most used mixed instrument in the research, found in 40 of the 140 articles analyzed. Likewise, in another survey 11 the instrument most used to assess depression was the Beck Depression Inventory (BDI), found in 105 articles, among 175 evaluated. This data can be compared with the results found in this research, which show the same instrument as the most used among those who only evaluate depression.

Most of the articles paid special attention to the medical course and other health courses. This can be justified due to the direct contact of health agents with patients, their families, their difficulties and overcoming. The influence of patients on the mental state of professionals may be one of the reasons why researchers are so concerned with the mental health of health agents, especially doctors. The responsibility of health professionals on the quality of life and health of other people can also be a stressful factor for this class.

The present study has some limitations, such as the use of only one database. For this reason, the results should be analyzed

DISCUSSION

Through the elaboration of this integrative review it was possible to find several instruments for tracking anxiety and depression used in samples of undergraduate students, on all continents, by different populations. The large number of articles found may be due to the ease and convenience of using a sample of students, with the population of the University where the study is conducted. ¹¹ Another fact that may justify the interest of authors in assessing the mental health of university students is the age group in which the majority are, since young people under 21 years of age are at greater risk of developing mental disorders. ¹²

Despite the large number of articles recovered, few researches were carried out in Brazil (5%), which can be justified by the fact that the volume of publications of studies aimed at assessing mental health in Brazil cannot be considered growing. ¹¹

Despite the large number of articles recovered, few researches were carried out in Brazil (5%), which can be justified by the fact that the volume of publications of studies aimed at assessing mental health in Brazil cannot be considered growing.

The instruments used to track anxiety and depression have been validated in their Brazilian versions. The Beck Anxiety Inventory (BAI) was validated and presented adequate reliability, with Cronbach's α of 0,87 for the university student population. ¹³ Likewise, the State Trait Anxiety Inventory (STAI) was also validated and showed high internal consistency, with

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with caution, as there may be other articles in other databases with different results. Another limitation is the inclusion of articles in only one language, so that the results of articles published in other languages may present results different from those found in this integrative review. Thus, we suggest that new research be carried out with more databases, by more researchers and in several languages.

CONCLUSION

It is possible to conclude that many countries, especially China and the United States of America, carry out research regarding the evaluation of the mental health of their students, exceptionally in the area of Medicine. In these studies, various instruments were found to assess anxiety and depression, the most found being the Depression,

Anxiety and Stress Scale (DASS) and the Beck Depression Inventory (BDI). Most of the articles found did not evaluate the psychometric properties of the instruments used, data that could provide valuable information on the structure of the questionnaires. Thus, we encourage new studies that use samples from different students and that assess the psychometric characteristics of these instruments. ■

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