



UNIVERSITY STUDENT ADAPTATION AND MENTAL HEALTH: A SYSTEMATIC REVIEW OF LITERATURE

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ABSTRACT

Students' mental health and their adaptation to the university have been investigated in several studies. The present study aimed to carry out a systematic review of the literature about the variables related to the students' adaptation to higher education that influence their mental health. A bibliographic search was carried out in six national and international databases, with 23 articles selected for analysis from six categories: difficulties and facilitators of adaptation, consequences of non-adaptation, symptoms, required repertoire and teaching strategies. The results indicate that the main obstacles are the level of demand and interpersonal relationships. As facilitators, support network, the availability of information, and academic integration. Anxiety, stress and depression were the main symptoms; repertoires of autonomy and commitment were most required for a healthy adaptation to university. There is a lack of research that characterizes the behaviors that make up these repertoires, which would lead to better interventions with this population.

Keywords: higher education; adjustment; literature review.

Adaptación y salud mental del estudiante universitario: revisión sistemática de la literatura

RESUMEN

La salud mental del estudiante y su adaptación a la universidad han sido investigados en diversas investigaciones. En el presente estudio se tuvo como objetivo realizar revisión sistemática de la literatura acerca de las variables relativas a la adaptación del estudiante a la enseñanza universitaria que influyen su salud mental. Se realizó búsqueda bibliográfica en seis bases de datos nacionales e internacionales, siendo seleccionados 23 artículos para análisis a partir de seis categorías: dificultadores y facilitadores de la adaptación, consecuencias de la no adaptación, síntomas, repertorio requerido y estrategias de enseñanza. Los resultados indican que los principales dificultadores son nivel de exigencia y relacionamientos interpersonales; como facilitadores, red de apoyo, suministro de información e integración académica. Ansiedad, estrés y depresión son los principales síntomas; repertorios de autonomía y comprometimiento los más requeridos para una adaptación saludable a la universidad. Hay escasez de investigaciones que caractericen los comportamientos constituyentes de esos repertorios, lo que posibilita intervenciones con esa población.

Palabras clave: enseñanza universitaria; adaptación; revisión de literatura.

Adaptação e saúde mental do estudante universitário: revisão sistemática da literatura

RESUMO

A saúde mental do estudante e sua adaptação à universidade têm sido investigados em diversas pesquisas. O presente estudo teve como objetivo realizar revisão sistemática da literatura acerca das variáveis relativas à adaptação do estudante ao ensino superior que influenciam a sua saúde mental. Foi realizada busca bibliográfica em seis bases de dados nacionais e internacionais, sendo selecionados 23 artigos para análise a partir de seis categorias: dificultadores e facilitadores da adaptação, consequências da não adaptação, sintomas, repertório requerido e estratégias de ensino. Os resultados indicam que os principais dificultadores são nível de exigência e relacionamentos interpessoais; como facilitadores, rede de apoio, fornecimento de informação e integração acadêmica. Ansiedade, estresse e depressão são os principais sintomas; repertórios de autonomia e comprometimento os mais requeridos para uma adaptação saudável à universidade. Há carência de pesquisas que caracterizem os comportamentos constituintes desses repertórios, o que possibilitaria intervenções com essa população.

Palavras-chave: ensino superior; ajustamento; revisão de literatura.

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INTRODUCTION

The mental health of students and their adaptation to university life have been the object of several studies. However, this literature still displays considerable gaps. Studies indicate a higher prevalence rate of anxiety and depression symptoms in the university population than in the general population. And such disparity has been increasing in recent years (Padovani et al., 2014). According to a survey on the socioeconomic profile of students attending federal universities (FONAPRACE, 2014), 58.36% of the total number of students surveyed reported suffering from anxiety; 44.72% reported apathy/lack of motivation to do things; 32.57% reported insomnia or any significant sleep disorder; 22.55% reported feeling abandonment / despair / hopelessness and 21.29% reported feelings of loneliness. In addition to these difficulties, there were reports of eating disorders (13%), fear/panic (10.56%), death anxiety (6.38%) and suicidal thoughts (4.13%).

The mental suffering of university students seems to be related to a series of demands characteristic of the context of university admission. Such demands involve the need for adaptation, accommodations, social support, autonomy, the requirements related to the content addressed in the disciplines, and so on (Padovani et al., 2014). International and national studies also indicate a concern of managers and professors of universities regarding the high incidence of academic failure among students, manifested in various ways, such as low classifications, absenteeism, and too many students changing courses or dropping out (Oliveira & Dias, 2014; Withey, Fox, & Hartley, 2014).

Several studies, in which phenomena related to the students' mental health and adaptation devices are investigated (e.g., Bore, Pittolo, Kirby, Dlużewska, & Marlin, 2016; Oliveira & Dias, 2014), highlight the need to conduct research and interventions with the university population. That is due to the fact that the transition to academic life can turn out into a potentially stressful experience for young students, which can influence how much advantage they might take out of the opportunities offered by the university, both in relation to vocational training and psychosocial development. Most studies in the area deal with the identification of the difficulties faced by students (Moreno & Soares, 2014; Padovani et al., 2014) or symptoms presented, highlighting diagnoses such as "anxiety", "stress" and "depression" (Mahmoud, Staten, Hall, & Lennie, 2012; Persaud & Persaud, 2016). This information, although important when it comes to getting to know the reality of this population and to problematize the phenomenon in question, does not describe or clarify which specific repertoires students need to develop in order to properly handle such situations, nor do they describe how interventions

should be made in this context, as ways to mitigate or solve this situation.

Although some studies indicate variables related to the behaviors that students must present in order to adapt to the academic context (e.g., Bore et al., 2016; Stoliker & Lafreniere, 2015), these studies still explain such variables in a rather systematized way and, often, make use of different nomenclatures to refer to the same phenomena. An example is the variable related to social contact among students in the first weeks, which is presented as "integration with students", "social insertion" (Teixeira, Dias, Wottrich, & Oliveira, 2008), "welcoming students" (Oliveira, Santos, & Dias, 2016) and "established friendships" (Oliveira & Dias, 2014).

The objective of this study was to systematize the variables described in the literature, seeking to identify and describe aspects related to the difficulties and facilitators for adaptation, as well as to the consequences of these variables for the mental health of students. The repertoire required of them to adapt in a healthy way to the university context, as well as the teaching strategies of this repertoire can contribute to (1) give consistency to what is already known about the student's adaptation to higher education, (2) to highlight gaps that still need to be investigated, as well as (3) to support the development of future interventions. When reviewing the literature on this phenomenon, only one systematic review was found to investigate the relationship between the use of coping strategies and adaptation by university students (Oliveira, Carlotto, Vasconcelos, & Dias, 2014). This demonstrates the need for a broader systematic review, which explains other aspects involved in the adaptation to the university context, such as those mentioned above. Thus, this study aimed to conduct a systematic review of the literature about the variables related to the student's adaptation to higher education that have an effect on their mental health.

METHOD

To respond to the proposed objective, a systematic review of the literature was conducted, a method that aims to identify as many studies as possible on a given phenomenon in an organized way. The result is a reflexive, critical and comprehensive analysis of the selected material (Costa & Zoltowski, 2014).

The bibliographic search was performed in six national and international databases: INDEXPSI, SCIELO, LILACS, PSYCNET, PUBMED and ERIC. In the national databases, the following descriptors were used: mental health and university student; adjustment, academic and student; higher education and adaptation. In the international databases, the descriptors used were: mental health, undergraduate students and adaptation; mental health, undergraduate students and adjustment.

The selected articles were of empirical nature and presented information on: (a) main difficulties faced by students in their transition to higher education; (b) how interventions are carried out in this context; (c) how students adapt to the necessary changes; (d) complaints made by higher education students in this context; (e) factors that benefit or hinder adaptation to higher education. Articles in Portuguese, English and Spanish were selected. The exclusion criteria used were: (a) mental health studies with other populations; (b) studies on specific disorders not related to the adaptation process (e.g., ADHD, learning disorders); (c) difficulties encountered in specific courses (e.g., health, sportsmen); (d) studies that only presented prevalence data, without description of the variables related to adaptation; (e) aspects related to differences in gender, race, prejudice; (f) studies of evidence of validity of psychometric instruments; (g) theoretical studies; (h) languages other than Portuguese, English and Spanish. Two researchers were in charge of the definition of keywords, inclusion and exclusion criteria, and selection of articles for review.

The bibliographic survey was conducted from September to November 2017, and a new search to update the review was conducted in October 2020, four

new articles to include in the review were selected. A total sum of 925 publications were found, out of which 139 were selected and 42 were recovered. The studies found were selected after an examination of titles and keywords followed by a reading of abstracts. After a complete reading of the articles, considering the inclusion and exclusion criteria, 23 references were included in the review (Table 1).

INSTRUMENTS AND MATERIALS

For data recording, a table containing the following variables was created: (1) general characteristics of the studies (article number - ID, authors, objectives, instruments, variables investigated, design, participants - quantity, age and year of course, course/area and Institution) and (2) variables related to adaptation: difficulties for adaptation, consequences of non-adaptation, facilitators of adaptation, symptoms, repertoire required for adaptation and teaching strategies. For storage and reading of the selected texts, the *Mendeley* bibliographic management software was used.

Data collection, registration, and analysis procedure

The selected articles were read in full, and the

Table 1 – Studies selected for review.

Code	Full reference
Art. 1	Ababu, G. B.; Yigzaw, A. B.; Besene, Y. D.; Alemu, W. G. (2018). Prevalence of adjustment problem and its predictors among first-year undergraduate students in Ethiopian university: A cross-sectional institution based study. <i>Psychiatry Journal</i> , 2018, 1-7. doi: 10.1155/2018/5919743
Art. 2	Barbosa, M. M. F.; Oliveira, M.C.; Melo-Silva, L. L.; Taveira, M. C. (2018). Delineamento e avaliação de um programa de adaptação acadêmica no ensino superior. <i>Revista Brasileira de Orientação Profissional</i> , 19(1), 61-74. doi: 1026707/1984-7270/2019v19n1p61
Art. 3	Bore, M., Pittolo, C., Kirby, D.; Dlużewska, T.; Marlin, S. (2016). Predictors of psychological distress and well-being in a sample of Australian undergraduate students. <i>Higher Education Research & Development</i> , 35(5), 869-880. doi: 10.1080/07294360.2016.1138452
Art. 4	Fernández-Rodríguez, C.; Soto-López, T.; Cuesta, M. (2019). Needs and demands for psychological care in university students. <i>Psicothema</i> , 31(4), 414-421. doi:10.7334/psicothema2019.78
Art. 5	Hartley, M. T. (2011). Examining the relationships between resilience, mental health, and academic persistence in undergraduate college students. <i>Journal of American College Health</i> , 59(7), 596-604. doi:10.1080/07448481.2010.515632
Art. 6	Igue, E. A.; Bariani, I. C. B.; Milanesi, P. V. B. (2008). Vivência acadêmica e expectativas de universitários ingressantes e concluintes. <i>Psico-USF</i> , 13(2), 155-164. doi: 10.1590/S1413-82712008000200003
Art. 7	Klainin-Yobas, P.; Ramirez, D.; Fernandez, Z.; Sarmiento, J.; Thanoi, W.; Ignacio, J.; Lau, Y. (2016). Examining the predicting effect of mindfulness on psychological well-being among undergraduate students: A structural equation modelling approach. <i>Personality and Individual Differences</i> , 91, 63-68. doi:10.1016/j.paid.2015.11.034
Art. 8	Levin, M. E.; Pistorello, J.; Seeley, J. R.; Hayes, S. C. (2014). Feasibility of a prototype web-based acceptance and commitment therapy prevention program for college students. <i>Journal of American College Health</i> , 62(1), 20-30. doi:10.1080/07448481.2013.843533.
Art. 9	Macaskill, A. (2018). Undergraduate mental health issues: The challenge of the second year of study. <i>Journal of mental health (Abingdon, England)</i> , 27(3), 214-221. doi: 10.1080/09638237.2018.1437611
Art. 10	Moreno, P. F.; Soares, A. B. (2014). O que vai acontecer quando eu estiver na universidade? Expectativas de jovens estudantes brasileiros. <i>Aletheia</i> , (45), 114-127. Recovered from http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1413-03942014000200009&lng=pt&tlng=pt .

Code	Full reference
Art. 11	Oliveira, C. T.; Dias, A. C. G. (2014). Dificuldades na trajetória universitária e rede de apoio de calouros e formandos. <i>Psico</i> , 45(2), 187-97. doi https://doi.org/10.15448/1980-8623.2014.2.13347
Art. 12	Oliveira, C. T.; Dias, A. C. G.; Piccoloto, N. M. (2013). Contributions of cognitive behavioral therapy for difficulties in college adjustment. <i>Revista Brasileira de Terapias Cognitivas</i> , 9(1), 10–18. doi:10.5935/1808-5687.20130003.
Art. 13	Oliveira, C. T. de; Santos, A. S. dos; Dias, A. C. G. (2016). Expectativas de universitários sobre a universidade: sugestões para facilitar a adaptação acadêmica. <i>Revista Brasileira de Orientação Profissional</i> , 17(1), 43-53. Recovered from http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1679-33902016000100006&lng=pt&tling=pt .
Art. 14	Polydoro, S. A. J.; Primi, R.; Serpa, M. N. F.; Zaroni, M. M. H.; Pombal, K. C. P. (2001). Desenvolvimento de uma escala de integração ao ensino superior. <i>Psico-USF</i> , 6(1), 11-17. doi:10.1590/S1413-82712001000100003.
Art. 15	Ridner, S. L.; Newton, K. S.; Staten, R. R.; Crawford, T. N.; Hall, L. A. (2016). Predictors of well-being among college students. <i>Journal of American College Health</i> , 64(2), 116-124. doi:10.1080/07448481.2015.1085057.
Art. 16	Sarriera, J. C.; Paradiso, A. C.; Schütz, F. F.; Howes, G. P. (2012). Estudo comparativo da integração ao contexto universitário entre estudantes de diferentes instituições. <i>Revista Brasileira de Orientação Profissional</i> , 13(2), 163-172. Recovered from http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S16793902012000200004&lng=pt&tling=pt .
Art. 17	Schweitzer, R. D. (1996). Problems and awareness of support services among students at an urban Australian university. <i>Journal of American College Health</i> , 45(2), 73–77. doi:10.1080/07448481.1996.9936865.
Art. 18	Soares, A. B.; Francischetto, V.; Dutra, B. M.; Miranda, J. M.; Nogueira, C. C. C.; Leme, V. R.; Araújo, A.M.; Almeida, L. S. (2014). O impacto das expectativas na adaptação acadêmica dos estudantes no Ensino Superior. <i>Psico-USF</i> , 19(1), 49–60. doi:10.1590/S1413-82712014000100006
Art. 19	Stoliker, B. E.; Lafreniere, K. D. (2015). The influence of perceived stress, loneliness, and learning burnout on university students' educational experience. <i>College Student Journal</i> , 49(1), 146-160.
Art. 20	Teixeira, M. A. P.; Castro, A. K. S. S.; Zoltowski, A. P. C. (2012). Integração acadêmica e integração social nas primeiras semanas na universidade: percepções de estudantes universitários. <i>Gerais: Revista Interinstitucional de Psicologia</i> , 5(1), 69-85. Recovered from de:http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1983-82202012000100006&lng=pt&tling=pt .
Art. 21	Teixeira, M. A. P.; Castro, G. D.; Piccolo, L. D. R. (2007). Adaptação à universidade em estudantes universitários: Um estudo correlacional. <i>Interação em Psicologia</i> , 11(2), 211–220. doi:10.5380/psi.v11i2.7466.
Art. 22	Teixeira, M. A. P.; Dias, A. C. G.; Wottrich, S. H.; Oliveira, A. M. (2008). Adaptação à universidade em jovens calouros. <i>Psicologia Escolar e Educacional</i> , 12(1), 185-202. doi:10.1590/S1413-85572008000100013.
Art. 23	Withey, L.; Fox, C. L.; Hartley, J. (2014). 'I cannot mess this up anymore': The experiences of undergraduates who withdraw and start again elsewhere. <i>Psychology Teaching Review</i> , 20(1), 78-89.

Source: the authors.

excerpts containing information on the following categories established *a priori* were added: hindering adaptation (e.g., characteristics of higher education; level of requirement), facilitators of adaptation (e.g., support network; provision of information), consequences of non-adaptation (e.g., low student commitment; poor academic performance), symptoms (e.g., stress, anxiety, depression), students' repertoire required to adapt (e.g., resilience; self-efficacy; autonomy; coping) and teaching strategies of this repertoire (e.g., resilience training; time management workshop). These categories were established after a reading of the most frequently mentioned texts in the articles recovered (Art. 6, Art. 21, Art. 22) and were created by naming the most cited variables in the research concerning adaptation to the university. To record the data related to the adaptation variables, the researcher read the text in full and added the excerpts that contained information about variables related to the pre-established categories.

Based on the section highlighted according to the *a priori* category, subcategories were created on the basis

of the nature of the information indicated in that section. The subcategory was transcribed to the table according to the column showing the category represented, in the line corresponding to the article being categorized. For example, in the excerpt: "And when entering university, perhaps it would be very beneficial for freshmen to take part in integration projects that effectively address the fundamental services already offered by the institution," the subcategory "providing information" was identified, which was transcribed into the table in the column "Facilitators of adaptation". Finally, a review of the listed variables was made in order to group those that referred to the same aspect (e.g., student reception and integration activities – refer to the "support network"). To control this grouping of variables, a table was created in text editor with the name of the subcategories and with the variables that were grouped in each of them.

Data analysis was based on the general characteristics of the studies and the variables of adaptation to the academic context. In order to do so, tables were created with the name of each category, followed by

the grouping of variables referring to that category, as well as the absolute and relative frequency with which such variables were mentioned in the studies.

RESULTS AND DISCUSSION

General characteristics of studies

Based on an analysis of the studies, it is possible to

observe that the majority was published in the years 2014, 2016 and 2018. Of the total number of articles analyzed, only one was published before the 2000s (Art. 17).¹ There were *three publication gaps*: from 1997 to 2000, from 2002 to 2006, and from 2009 to 2010. From

¹The references of the articles mentioned here were presented in Table 1.

Table 2 - Characteristics of the articles analyzed regarding the course (Year), participants, Institution, and research design.

Code. article	Course (year)	Participants		Instruments	Research design
		Qty.	age		
Art. 1	N. E (first year)	633	N.E.	- <i>Student Adaptation to College Questionnaire (SACQ)</i>	Descriptive, cross-sectional and correlational
Art. 2	Psychology, Environmental Engineering and Production Engineering, Nursing, Physiotherapy, Food Engineering, Medicine, Electrical Engineering, Physics and Nutrition (first to fourth year)	22	18-25	- Academic Adjustment Questionnaire - Career Adaptability Scale	Action research with a near-experimental design
Art. 3	N.E(first and last year)	150	M=23,2	- <i>Kessler Psychological Distress Scale (K10)</i> - <i>General Health Questionnaire (GHQ-12)</i> - <i>Brief Symptom Inventory (BSI)</i> - <i>Warwick Edinburgh Mental Well Being Scale (WEMWBS)</i> - <i>Brief Resilience Scale (BRS)</i>	Descriptive, cross-sectional and correlational
Art. 4	Health Sciences, Sciences, Engineering, Social Sciences, Arts and Humanities (sophomore year)	706	M=20,2	- <i>Evaluation of the Need for Psychological Assistance Questionnaire (NPAQ)</i> - <i>Hospital Anxiety and Depression Scale (HADS)</i>	Descriptive, cross-sectional and correlational
Art. 5	Arts, Biology, Science, Communication, Education, Journalism, Psychology (first and last year)	605	M=21,03	- <i>Variables Related to Academic Persistence and Demographics</i> - <i>Sense of Belonging (SOB)- Connor-Davidson Resilience Scale (CD-RISC)- Social Support Questionnaire (SSQ-6)- Mental Health Inventory-5 (MHI-5)</i>	Descriptive, cross-sectional and correlational
Art. 6	Psychology (second, third and fourth year)	203	M=20,17	- Academic Experiences Questionnaire - Reduced Version (QVA-r) - Question about the expectations at the entrance	Descriptive, cross-sectional and correlational
Art. 7	Administration, Arts Sciences, Nursing, Medicine, Health (first year)	630	M=19,56	- <i>Psychological Well-Being Scale (PWB)</i> - <i>The mindful attention awareness scale (MAAS)- The Generalized Self-Efficacy Scale (GSES)- The 12-item multi-dimensional scale of perceived social support (MSS)</i>	Descriptive, cross-sectional and correlational
Art. 8	N.E (first year)	76	M=18,37	- <i>System Usability Scale (SUS)- ACT Knowledge Questionnaire</i> - <i>Depression, Anxiety and Stress Scale (DASS)- Acceptance and Action Questionnaire-II (AAQ-II)- Personal Values Questionnaire (PVQ)</i>	Group experimental with pre and post test and follow up

Code. article	Course (year)	Participants		Instruments	Research design
		Qty.	age		
Art. 9	Criminology, Law, Geography, English, Education, Sociology, Politics and Psychology (sophomore year)	23	M=20,81	- Interview - <i>General Health Questionnaire-28</i> (GHQ- 28)	Qualitative descriptive
Art. 10	Administration, Biomedicine, Engineering, Nursing, Statistics, History, Mathematics, Psychology (first and last year)	13	M=19,54	- Semi-structured interview	Qualitative descriptive
Art. 11	Economics, Psychology (N.E)	24	17-26	- Semi-structured interview	Qualitative descriptive
Art. 12	Administration, Agribusiness, Performing Arts, Biological Sciences, Accounting Sciences, Special Education, Nursing, Speech Therapy, Mathematics, Veterinary Medicine, Information Systems, Superior in Grain Production (first, penultimate and last year)	504	M=23,5	- Open question about the main difficulties encountered in the academic context during the first year of graduation	Qualitative descriptive
Art. 13	Economics, Psychology (N.E)	20	M=21,95	Semi-structured interview	Qualitative descriptive
Art. 14	Systems Analysis, Computer Engineering, Pharmacy, Letters, Mechatronics, Dentistry, Psychology (N.E)	633	N.E.	- Integration Scale to Higher Education (EIES)	Correlacional
Art. 15	N.E (N.E)	568	M=20,4	- <i>The National College Health Assessment</i> (NCHA II)- <i>The Public Health Surveillance Well-Being Scale</i> (PHS-WB)	Descriptive, cross-sectional and correlational
Art. 16	Psychology (N.E)	273	M=23,89	- Academic Experiences Questionnaire - Reduced Version (QVA-r)	Descriptive, cross-sectional and correlational
Art. 17	Law, Engineering, Humanities (first year)	441	N.E.	- Questionnaire developed for the study	Descriptive, cross-sectional and correlational
Art. 18	Medicine, Others, Pedagogy, Psychology (every year)	182	M=26,2	- Academic Experiences Questionnaire - reduced version (QVA-r) - Academic Involvement Questionnaire (QEA)- Brazilian Economic Classification Questionnaire	Descriptive, cross-sectional and correlational
Art. 19	Psychology (first year)	150	M=21	- <i>Perceived Stress Scale</i> (PSS) - <i>Academic Coping Strategies Scale</i> (ACSS)- <i>Maslach Burnout Inventory-Student Survey</i> (MBI-SS)- <i>Utrecht Work Engagement Scale for Students</i> (UWES-S) - <i>The University of California, Los Angeles Loneliness Scale-Version 3</i> (UCLA-3)	Descriptive, cross-sectional and correlational
Art. 20	Nursing, Civil Engineering, Pharmacy, Journalism (every year)	17	18-28	- Semi-structured interview	Qualitative and exploratory with collective case study
Art. 21	Law, Psychology, Veterinary (first year)	342	M=21,2	- Academic Experiences Questionnaire - reduced version (QVA-r)- Level of participation in extracurricular activities- Likert scales developed for the study	Descriptive, cross-sectional and correlational

Code. article	Course (year)	Participants		Instruments	Research design
		Qty.	age		
Art. 22	Administration, Agronomy, Law, Special Education, Physical Education, Civil Engineering, Electrical Engineering, Mechanical Engineering, Mathematics, Chemistry (N.E)	14	18-22	- Semi-structured interview	Descriptive, phenomenological qualitative
Art. 23	Social Sciences, English, Music, Politics (first and last year)	5	18-21	- Semi-structured interview	Qualitative descriptive

Source: the authors.

2010, publications were found in all the following years, until 2019. Out of the 23 articles analyzed, 12 were published internationally and 11 in Brazil. International studies are divided into the United States (13%), Australia (8.7%), United Kingdom (8.7%) Canada (4.3%), Spain (4.3%), Ethiopia (4.3%) and Singapore (4.3%). Among the international studies, four were published in the Journal of American College Health (Art. 5, Art. 8, Art. 15(e) 17). Most studies were conducted with public university students (Art. 1, Art. 4, Art. 11, Art. 12, Art. 13, Art. 16, Art. 18, Art. 19, Art. 20, Art. 21, Art. 22, Art. 23), two of these also included students from private universities (Art. 16 and Art. 18). Data on the characteristics of the participants, instruments and study design are described in Table 2.

Regarding the year of graduation, 14 studies selected first-year students. Except for three studies that selected only psychology students, in general, the studies sought to cover a diversity of courses in the sample. The most frequent course was Psychology (43%), followed by Engineering (26%), Law (17%), Nursing (17%), Administration (8.7%), Economics (8.7%) and Veterinary (8.7%). From the methodological point of view, most of the studies examined are descriptive (78%), i.e., describe the characteristics of a given population or phenomenon and establish relationships between variables (Gil, 1999), in this case, the student's adaptation to higher education and its relationship with mental health. The analyzed articles contribute to the description of the phenomenon, allowing knowledge of the reality of students and correlational analyses of variables that can influence their adaptation to higher education.

These analyses are important to indicate aspects to be investigated empirically, but in themselves they are still insufficient, since they deal with correlations and not causal relationships. Despite the importance of this type of research, there is also a need to develop experimental and applied studies, because as the variables related to this phenomenon are better known, it is also necessary to investigate how it is possible to intervene on this phenomenon. Regarding interventions

with this population, only two studies were found (Art. 2 and Art. 8), which, despite presenting the development of an intervention and evaluation of their results, do not specify the behaviors that were taught to students. This specification could help in the development of training and other types of intervention, since it produces visibility about what students need to be able to do (skills to develop) (Santos, Kienen, Viécili, Botomé, & Kubo, 2009) to deal with the university context in order to perform well academically and to remain physically and psychologically healthy.

Among the instruments applied, the Questionnaire of Academic Experiences - Reduced Version (QVA-r), which was used in four of the analyzed studies, stands out. All quantitative studies used at least two instruments, and all aimed to make correlations between variables, both sociodemographic and specific variables, such as levels of anxiety, depression, and academic variables. Regarding the participants, there was a wide variety of students who participated in the studies. Such variety was greater in quantitative studies. There were variations also in the average age, but it remained between 18 and 26.2 years.

Variables of adaptation to the academic context

The identification of the specific variables present in the context of higher education leads to a greater understanding of which aspects experienced by students may be related to their adaptation to this context and their health, which would be conducive to the development of more direct and effective interventions. Table 3 describes the main facilitators and difficulties of adaptation, as well as the consequences of not adapting to higher education.

Factors related to the support network (47.8%), providing information (39.1%), and academic integration (34.8%) appeared more frequently as facilitators of adaptation to higher education, followed by the institution's infrastructure characteristics (26.1%), and social integration (26.1%). These data indicate the importance and feasibility of performing interventions

on environmental variables, as well as the responsibility of university administrations and professors. Among the environmental variables, providing information and support services to university students can contribute to adaptation, in order to guarantee access to the opportunities offered by the institution (Art. 6; Art. 11; Art. 16). This is because most students enter higher education feeling “lost” and not knowing where to seek help or have their questions answered. They sometimes are of the existence of the institution’s support services.

In addition, teachers can contribute to the adaptation of students by being available to answer questions and listen to contributions by the students (Art. 13). Therefore, the training of teachers is another relevant factor for academic adaptation. Considering that the mental health of university students is connected to their adaptation to this context, having a support network so that they can fully participate in university’s social environment is extremely important for students. It will also provide them with opportunities to talk about the difficulties they are facing, share experiences. They will know where to seek help when they need it and feel welcomed in this new context, characterized by several new and challenging situations for many students, especially in the early years (Macaskill, 2018; Oliveira & Dias, 2014).

Another important aspect is that students are encouraged to perform extracurricular activities (Art. 10; Art. 18; Art. 20) because they lead to a closer contact with professional practice and career exploration since the beginning of graduation courses. That motivates students to continue their studies and to establish relationships between the studied theory and practice. Exploring the opportunities of the academic environment involves the search for information about the reality of work and the area of knowledge, enabling greater clarity about the existing educational and professional alternatives (Teixeira, Bardagi, & Hutz, 2007). This exploration is important because, often, the courses do not address all the possibilities of professional performance existing in the professional world, which can frustrate the initial expectations of students and hinder their adaptation.

As for the complicating factors for adaptation to higher education, both personal and specific aspects of academic life were described. Personal factors such as interpersonal relationships (56.5%), leaving home (56.5%), lack of a support network (52.2%), and financial situation (43.5%) were more frequently identified in the articles analyzed. Regarding specific aspects of academic life, the level of demand stood out (73.9%) along with the characteristics of Higher Education (39.1%). These difficulties seem to require a problem-solving capacity on the part of university students, since this new context, which includes excitement

over university admission and expectations concerning possible departure from home, presents new situations for students, who often have problems that they need to learn to deal with and solve on their own. Problem solving is characterized as a complex behavioral process that involves not only changes in environment, but also changes in individuals themselves and their situation, so that the occurrence of a solution response is possible (Skinner, 1974). Learning how to manage aspects of the environment to make solving a problem more likely seems to be an important step for students, as they may encounter new and complex situations for which they will not have a solution up their sleeves, which requires previous thinking over each solution.

One of these previous answers may be within the scope of interpersonal relationships, since asking for help, asking questions, and searching for information can increase the likelihood of solving a problem. For this, the student needs to relate to different people, and with authorities such as professors, managers, and employees of the institution in order to set up a repertoire that may not have been developed previously while attending other levels of education. It is necessary to develop behaviors related to social skills, which imply the ability to start and maintain conversations, speak to groups of people, express feelings, defend their own rights, ask for help, refuse requests, and so on (Horse, 1996; Del Prette & Del Prette, 2009). This could help students be able to express themselves regarding dissatisfaction with grades or corrections, doubts about the way the institution operates, questions about the curricula or forms of evaluation. The list goes on and on.

As regards the consequences of non-adaptation to higher education, the main categories identified were dropping out of the course (52.2%) and poor academic performance (34.8%), followed by low commitment (13%) and mental and physical health (13%). The problem of dropping out of higher education seems to be directly related to the difficulties students have when adapting to the university environment (Moreno & Soares, 2014; Polydoro et al., 2001; Withey, Fox, & Hartley, 2014). The identification and systematization of the main variables that hinder adaptation by the students and, consequently, their stay at the university, enables the development of actions in the university environment that modify these difficulties or that provide conditions for students to deal with problem situations in a healthier and more productive way.

In addition to the description of the problems that occur when entering higher education, the articles also contain information about the symptoms presented by the students in this context as well as the factors and behaviors of these students that facilitate adaptation, as shown in Table 4.

The main symptoms presented by university

Table 3 - *Facilitators and complicators of adaptation and consequences of non-adaptation.*

Facilitators of adaptation	Articles % (N)
Support network	47.8 (N=11)
Providing information	39.1 (N=9)
Academic integration	34.8 (N=8)
Characteristics of the institution - infrastructure	26.1 (N=6)
Social integration	26.1 (N=6)
Extracurricular activities	21.7 (N=5)
Pedagogical issues	21.7 (N=5)
Interpersonal relationships	17.4 (N=4)
Contact with the profession	13 (N=3)
Leisure/physical activity	13 (N=3)
Characteristics of the institution – others	8.7 (N=2)
Expectations about the transition to University	8.7 (N=2)
Difficulties for adaptation	Articles % (N)
Level of requirement	73.9 (N=17)
Interpersonal relationships	56.5 (N=13)
Distance from home	56.5 (N=13)
Lack of support network	52.2 (N=12)
Financial situation	43.5 (N=10)
Individual characteristics - cognitive and personality	39.1 (N=9)
Characteristics of higher learning	39.1 (N=9)
New responsibilities	34.8 (N=8)
Lack of information	30.4 (N=7)
Expectations regarding university life	30.4 (N=7)
Academic performance	26.1 (N=6)
Time management	26.1 (N=6)
Characteristics of the institution - curriculum	21.7 (N=5)
Characteristics of the institution - bureaucratic issues	17.4 (N=4)
Pedagogical issues	17.4 (N=4)
Emotion management repertoire	17.4 (N=4)
Study repertoire	13 (N=3)
Activity overload	13 (N=3)
Characteristics of the institution - infrastructure	13 (N=3)
Individual characteristics - health conditions	4.3 (N=1)
Consequences of non-adaptation	Articles % (N)
Drop out	52.2 (N=12)
Poor academic performance	34.8 (N=8)
Low commitment	13 (N=3)
Mental and physical health	13 (N=3)
Low intellectual development	8.7 (N=2)
Low personal development	8.7 (N=2)
Low motivation	8.7 (N=2)

Low professional self-efficacy	8.7 (N=2)
Low self-confidence	4.3 (N=1)
Difficulties in career progress	4.3 (N=1)
Slow professional development	4.3 (N=1)
Frustrations	4.3 (N=1)
Quality of interpersonal relationships	4.3 (N=1)

Source: the authors.

students were anxiety (54.2%), stress (52.2%), and depression (52.2%). These symptoms, in an analytical-behavioral view, are understood as a complex set of behaviors that occur due to each person's pattern of interaction with their environment (Cavalcante, 1997). Some environmental contingencies commonly produce emotional patterns, or "symptoms". In the university context, some specific factors that hinder adaptation

Table 4 - Symptoms Presented by Students and Repertoire Required to Adapt.

Symptoms	Articles % (N)
anxiety	52.2 (N=12)
stress	52.2 (N=12)
depression	47.8 (N=11)
Physical illnesses	4.3 (N=1)
Mood swings	4.3 (N=1)
Difficulty to concentrate	4.3 (N=1)
Psychosomatic disorders	4.3 (N=1)
Suicidal ideation	4.3 (N=1)
Eating and/or sleep disorders	4.3 (N=1)
Repertoire of students required to adapt	Articles % (N)
Autonomy	43.5 (N=10)
Commitment	34.8 (N=8)
Study behaviors	26.1 (N=6)
Emotional management	26.1 (N=6)
Self-efficiency	26.1 (N=6)
Coping	26.1 (N=6)
Adjustment	21.7 (N=5)
Vocational exploratory behavior	21.7 (N=5)
Resilience	17.4 (N=4)
Self confidence	13 (N=3)
Responsibility	13 (N=3)
Asking for help	8.7 (N=2)
Pro-activity	8.7 (N=2)
Creativity	4.3 (N=1)
Psychological flexibility	4.3 (N=1)

Source: the authors.

can contribute to the development of these symptoms, such as the level of requirements of the course (Art. 10), the institution's infrastructure (Art. 13), and interpersonal relationships (Art. 9). The identification of these factors seems to indicate that students are not intrinsically anxious or stressed, but that some aspects of their interaction with the university environment are maximizing these symptoms. By identifying these aspects, it is possible to develop strategies to modify this interaction and, consequently, minimize the symptoms presented. In addition to the development of these symptoms, often the hinderers interfere in the students' decision to stay or drop out, in their academic performance itself, in their commitment to academic activities, and in the intellectual and personal development of students, and also in the motivation keep on studying and pursue a professional career (Art. 8, Art. 13, Art. 18).

To prevent these symptoms and reduce the number of dropouts, it is important to better prepare students to deal with the new demands of this context by means of the development of specific repertoires for this. Upon entering higher education, students have to face several new situations, problems that they will need to solve routinely, interpersonal relationships with colleagues, professors, employees, and managers, as well as a level of demand and overload of activities with which they are not accustomed in high school (Art. 6, Art. 11). Although many of these factors are outside the students' control, it is possible that they will learn to behave in order to deal with the difficulties that exist in this context and adapt to higher education more successfully, reducing the damage to mental health and consequences such as dropping out, demotivation, poor academic performance, and so on (Art. 21; Art. 22). Therefore, it is necessary that students learn to behave effectively in the face of problem situations in this context, and not just "talk about" what can be done (Kubo & Botomé, 2001), based on specific topics such as resilience, personal development, and time management (Art. 3, Art. 13). Knowing how to define what resilience is and what kind of situations require students to be resilient is still not enough for them to behave resiliently during their experience in higher

education. This again highlights the importance of research that clearly describes the behaviors students need to develop to properly manage such situation.

In the articles analyzed, repertoires of autonomy (43.5%), and commitment (34.8%) stood out, followed by study behaviors (26.1%), emotion management (26.1%), self-efficacy (26.1%), and coping (26.1%). Learning how to manage academic and personal activities, and also developing a study repertoire (Art. 3), seems important for students to be able to deal with the demands and, at the same time, reconcile their academic responsibilities with their personal lives. Other important factors were the establishment of more satisfying interpersonal relationships and a support network to share their frustrations, difficulties and experiences at university (Art. 7), which seem to facilitate adaptation (Table 3). Managing academic and personal activities and developing a study repertoire are complex and required behaviors throughout academic and professional life, but are rarely pedagogical targets (Kienen et al., 2017; Yoshiy and Kienen, 2018). Developing interventions that aim to teach these repertoires can help students learn to study more efficiently, identifying their main difficulties and creating strategies to deal with them, in addition to planning activities in order to include leisure and social interaction activities in their routine.

Another relevant repertoire to be developed by university students is coping, especially because the academic environment, given its complexity, may involve a number of stressors that students will have to deal with in their daily lives. Coping refers to the emotional resources that an individual uses to deal with stressful situations (Lazarus & Folkman, 1984). Students deal in different ways with stressors, being able to use positive methods, such as those related to problem solving and search for social support or leisure activities, or non-adaptive strategies, such as dodging stressful events (Deasy, Coughlan, Pironom, Jourdan, & Mannix-McNamara, 2014). Developing interventions related to coping focused on the problem and social support can help students manage the stressful situations they experience in order to favor their adaptation to the university context, reducing, minimizing, or condoning the stress generated by these situations (Carlotto, Teixeira, & Dias, 2015).

Concerning the teaching strategies used to develop repertoires required for adaptation, the most frequent strategy was *time* management workshops (13%), followed by promoting an increase in internal resources (8.7%), and resilience training (8.7%). "Teaching Strategies" was the category less described in the articles analyzed, since only nine studies (Art. 3; Art. 5; Art. 7; Art. 8; Art. 12; Art. 13; Art. 15; Art. 16; Art. 18) mentioned strategies that could help teachers or course managers to intervene in the process of

adapting students to higher education. Although they cite some strategies, they do not describe in detail how they could be applied in the university context, what conditions should be set up what behaviors should be themes for pedagogical interventions (e.g., time management, resilience) or theories that could subsidize these strategies (e.g., Cognitive-Behavioral Therapy, Acceptance, and Commitment Therapy). It is important that these strategies are better operationalized so that other professionals who need to intervene with students can start from systematized data to elaborate their own interventions.

The university context is complex and some of its characteristics can maximize the suffering of students. This can occur either due to a lack of basic repertoires to deal with some situations, by external events that occur during the university period or by specific situations that occur at this stage. It is important to understand that many of these situations that can be stressful for students at university are also present in the job market. This indicates the even greater need to teach students behaviors to deal with these situations, as they will continue to come across them throughout their lives. Interventions carried out in the university environment (e.g., improve the university's infrastructure, provide information on bureaucratic processes, improve the curriculum to include practical and career-related activities) may favor adaptation, but they are not enough for students to learn how to deal with the problem situations that they are likely to come up against.

FINAL CONSIDERATIONS

This study made it possible to systematize variables related to the problem situations faced by students in the university context, as well as the consequences of these for students, either in relation to motivation, permanence in the course, or for the development of symptoms such as anxiety, depression and stress. It was also possible to identify basic repertoires required of students to deal with these situations (e.g., autonomy, emotion management). However, such repertoires are still described in a generic way, requiring more specification of the types of behaviors that students need to develop in order to be able to integrate into the university in a healthier way. There should be more research that aims to characterize such behaviors, as well as intervention research with this population in order to describe in detail the behaviors that have been taught and also the results of these interventions.

Some limitations of this study should be considered. First, as the study intended to understand how students generally adapt to the university, several more specific studies were excluded from the analysis, such as those related to the difficulties present in some undergraduate courses (e.g., health courses) and with

populations diagnosed with some specific disorder (e.g. ADHD, learning disorders). Moreover, as national and international articles were analyzed, a separate analysis of cultural variables that can influence academic adaptation was not performed.

Despite these limitations, it is noteworthy that the systematization of variables related to the adaptation of students to higher education and the consequences on their mental health indicate the role of psychological knowledge, as well as the resulting interventions, for the promotion of academic success and integral formation of students as professionals and citizens. The implementation of preventive actions aimed at the physical and psychological well-being of students, as well as their healthy adaptation to higher education, and involving the entire university community (e.g., students, professors, course coordinators, administrative technical collaborators) seem to be an alternative that enables a critical and reflective action on the part of psychologists, in addition to expanding the possibilities of professional performance in this context, traditionally marked by individual clinical interventions aimed at the student public.

REFERENCES

- Bore, M.; Pittolo, C.; Kirby, D.; Dluzewska, T.; Marlin, S. (2016). Predictors of psychological distress and well-being in a sample of Australian undergraduate students. *Higher Education Research & Development*, 35(5), 869-880. doi: 10.1080/07294360.2016.1138452.
- Caballo, V. E. (1996). O treinamento em habilidades sociais. In: V. E. Caballo (Ed.). *Manual de técnicas de terapia e modificação do comportamento* (pp. 3-42). São Paulo: Santos Livraria Editora.
- Carlotto, R. C.; Teixeira, M. A. P.; Dias, A. C. G. (2015). Adaptação acadêmica e coping em estudantes universitários. *Psico-USF*, 20(3), 421-432. doi: 10.1590/1413-82712015200305
- Cavalcante, S. N. (1997). Notas sobre o fenômeno depressão a partir de uma perspectiva analítico-comportamental. *Psicologia: Ciência e Profissão*, 17(2), 2-12. doi:10.1590/S1414-98931997000200002
- Costa, A. B. C.; Zoltowski, A. P. C. (2014). Como escrever um artigo de revisão sistemática. In: S.H. Koller; M. C. P. de Paula Couto; J. Hohendorff (Eds.), *Manual de produção científica* (pp. 55-70). Porto Alegre: Penso.
- Deasy, C.; Coughlan, B.; Pironom, J.; Jourdan, D.; Mannix-McNamara, P. (2014). Psychological distress and coping amongst higher education students: A mixed method enquiry. *PLoS ONE*, 9(12), e115193. doi: 10.1371/journal.pone.0115193.
- Del Prette, Z. A. P.; Del Prette, A. (2009). Avaliação de habilidades sociais: Bases conceituais, instrumentos e procedimentos. In A. Del Prette; Z. A. P. Del Prette (Eds.), *Psicologia das habilidades sociais: Diversidade teórica e suas implicações* (pp.187-229). Petrópolis: Vozes.
- FONAPRACE (2014). *IV Pesquisa do perfil do socioeconômico e cultural dos estudantes de graduação das instituições federais de ensino superior brasileiras*. Brasília: Fonaprace. Recuperado de: http://www.andifes.org.br/wp-content/uploads/2017/11/Pesquisa-de-Perfil-dos-Graduando-das-IFES_2014.pdf. Accessed on September 18, 2017.
- Gil, A. C. (1999). *Métodos e técnicas de pesquisa social*. (5ª ed.). São Paulo: Atlas.
- Kienen, N.; Sahão, F. T.; Rocha, L. B.; Ortolan, M. L.; Soares, N. G.; Yoshiy, S. M.; Prieto, T. (2017). Comportamentos pré-requisitos do "Estudar textos em contexto acadêmico". *Ces Psicología*, 10(2), 28-49. doi: 10.21615/cesp.10.2.3
- Kubo, O. M.; Botomé, S. P. (2001). Ensino-aprendizagem: Uma interação entre dois processos comportamentais. *Interação*, 5, 133-170. doi: <http://dx.doi.org/10.5380/psi.v5i1.3321>
- Lazarus, R. S.; Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Mahmoud, J. S. R.; Staten, R. T.; Hall, L. A.; Lennie, T. A. (2012). The relationship among young adult college students' depression, anxiety, stress, demographics, life satisfaction, and coping styles. *Issues in Mental Health Nursing*, 33(3), 149-156. doi: 10.3109/01612840.2011.632708.
- Moreno, P. F.; Soares, A. B. (2014). O que vai acontecer quando eu estiver na universidade?: Expectativas de jovens estudantes brasileiros. *Aletheia*, 45, 114-127. Recovered from <http://pepsic.bvsalud.org/pdf/aletheia/n45/n45a09.pdf>
- Oliveira, C. T.; Carlotto, R. C.; Vasconcelos, S. J. L.; Dias, A. C. G. (2014). Adaptação acadêmica e coping em estudantes universitários brasileiros: Uma revisão de literatura. *Revista Brasileira de Orientação Profissional*, 15(2), 177-186. Recovered from <http://pepsic.bvsalud.org/pdf/rbop/v15n2/08.pdf>
- Oliveira, C. T. de; Santos, A. S. dos; Dias, A. C. G. (2016). Expectativas de universitários sobre a universidade: sugestões para facilitar a adaptação acadêmica. *Revista Brasileira de Orientação Profissional*, 17(1), 43-53. Recovered from <http://pepsic.bvsalud.org/pdf/rbop/v17n1/06.pdf>
- Oliveira, C. T.; Dias, A. C. G. (2014). Dificuldades na trajetória universitária e rede de apoio de calouros e formandos. *Psico*, 45(2), 187-97. doi <https://doi.org/10.15448/1980-8623.2014.2.13347>
- Padovani, R. C.; Neufeld, C. B.; Maltoni, J.; Barbosa, L. N. F.; Souza, W. F.; Cavalcanti, H. A. F.; Lameu, J. N. (2014). Vulnerabilidade e bem-estar psicológicos do estudante universitário. *Revista Brasileira de Terapias Cognitivas*, 10(1), 02-10. doi:10.5935/1808-5687.20140002.
- Persaud, N.; Persaud I. (2016). The Relationship between socio-demographics and stress levels, stressors, and coping mechanisms among undergraduate students at a university in Barbados. *International Journal of Higher Education*, 5(1), 11-27. doi:10.5430/ijhe.v5n1p11.
- Santos, G. C. V.; Kienen, N.; Viceli, J.; Botomé, S. P.; Kubo, O. M.

- (2009). "Habilidades" e "Competências" a desenvolver na capacitação de psicólogos: Uma contribuição da Análise do Comportamento para o exame das diretrizes curriculares. *Interação em Psicologia*, 13(1), 131-145.
- Skinner, B. F. (1974). *About behaviorism*. New York: Alfred A. Knopf.
- Stoliker, B. E.; Lafreniere, K. D. (2015). The influence of perceived stress, loneliness, and learning burnout on university students' educational experience. *College Student Journal*, 49(1), 146-160. Recuperado de <https://eric.ed.gov/?id=EJ1095547>
- Teixeira, M. A. P.; Bardagi, M. P.; Hutz, C. S. (2007). Escalas de exploração vocacional (EEV) para universitários. *Psicologia em Estudo*, 12(1), 195-202. doi:10.1590/S1413-73722007000100023
- Teixeira, M. A. P.; Dias, A. C. G.; Wottrich, S. H.; Oliveira, A. M. (2008). Adaptação à universidade em jovens calouros. *Psicologia Escolar e Educacional*, 12(1), 185-202. doi:10.1590/S1413-85572008000100013.
- Withey, L.; Fox, C. L.; Hartley, J. (2014). 'I cannot mess this up anymore': The experiences of undergraduates who withdraw and start again elsewhere. *Psychology Teaching Review*, 20(1), 78-89. Recuperado de <https://files.eric.ed.gov/fulltext/EJ1149779.pdf>
- Yoshiy, S. M.; Kienen, N. (2018). Gerenciamento de tempo: Uma interpretação analítico-comportamental. *Psicologia da Educação*, 47(2), 67-77. doi: 10.5935/2175-3520.20180019

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