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ARTICLE

Stress in undergraduate students: knowing the effect of remote activities in the pandemic daily routine

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ABSTRACT

The coronavirus pandemic brought an unprecedented disruption to society, with this, the impacts fostered by the crisis also extended to educational institutions. The aim of this study was to investigate whether higher education activities can be considered a stressor in a pandemic context. The sample consisted of 136 students with remote academic activities and 131 with suspended academic activities, who answered a sociodemographic questionnaire and an open question about the factors that have raised the level of stress in the months of April, May, June and July 2020. The textual corpus was processed with the aid of the *Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires* software. As a result, there were several stressors related or not related to academic activities for both groups, although the performance of digital academic activities has been pointed out with great frequency. Thus, digital academic activities are related to the level of stress among students.

KEYWORDS

covid-19; stress; remote activities; higher education.

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ESTRESSE EM UNIVERSITÁRIOS: CONHECENDO O EFEITO DAS ATIVIDADES REMOTAS NO COTIDIANO PANDÊMICO

RESUMO

A pandemia do coronavírus trouxe uma ruptura sem precedentes à sociedade, com isso, os impactos fomentados pela crise também se estenderam para as instituições de ensino. O objetivo deste trabalho foi investigar se as atividades de ensino superior podem ser consideradas um fator estressor no contexto pandêmico. A amostra foi constituída por 136 alunos com atividades acadêmicas remotas e 131 com atividades acadêmicas suspensas, os quais responderam um questionário sociodemográfico e uma pergunta aberta sobre os fatores que têm elevado o seu nível de estresse nos meses de abril, maio, junho e julho de 2020. Os *corpora* textuais foram processados com o auxílio do *software Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*. Como resultados, observaram-se diversos fatores estressores relacionados ou não com as atividades acadêmicas para ambos os grupos, embora a realização de atividades acadêmicas digitais tenha sido apontada com grande frequência. Assim, as atividades acadêmicas digitais estão relacionadas com o nível de estresse entre os alunos.

PALAVRAS-CHAVE

covid-19; estresse; atividades remotas; ensino superior.

ESTRÉS EN UNIVERSITARIOS: CONOCIENDO EL EFECTO DE LAS ACTIVIDADES REMOTAS EN LA VIDA DIARIA DE LA PANDEMIA

RESUMEN

La pandemia de coronavirus trajo una disrupción sin precedentes a la sociedad. Los impactos propiciados por la crisis se extendieron también a las instituciones educativas. El objetivo de este estudio fue investigar si las actividades de educación superior pueden considerarse un factor de estrés en un contexto de pandemia. La muestra estuvo conformada por 136 estudiantes con actividades académicas remotas y 131 con actividades académicas suspendidas, quienes respondieron un cuestionario sociodemográfico y una pregunta abierta acerca de los factores que han elevado el nivel de estrés en los meses de abril, mayo, junio y julio de 2020. El corpus textual se procesó con la ayuda del software Iramuteq. Como resultado, se presentaron varios factores estresantes relacionados o no con las actividades académicas para ambos grupos, aunque se ha señalado con gran frecuencia el desempeño de las actividades académicas digitales. Así, las actividades académicas digitales están relacionadas con el nivel de estrés de los estudiantes.

PALABRAS CLAVE

covid-19; estrés; actividades a distancia; educación superior.

INTRODUCTION

Covid-19 was declared a public health emergency of international concern, reaching more than 150 countries due to the high degree of dissemination (World Health Organization — WHO, 2020). The disproportionate growth of cases and deaths, in addition to the lack of vaccine in the initial months, strikingly evidenced the fragility of life in the face of an unprecedented health crisis, with prevention measures being the only way to inhibit transmission and slow down contagion (Garcia and Duarte, 2020). Practices such as hand and environment hygiene, the use of face masks and social isolation, for example, have become imperative in the daily lives of people all over the world (Adhikari *et al.*, 2020).

Other experiences, such as the first severe acute respiratory syndrome outbreak in 2003 in Taiwan, Singapore, and Hong Kong, indicate the structuring of this type of crisis in four phases: containment, mitigation, suppression, and recovery (Werneck and Carvalho, 2020). The containment phase is characterized by tracing people coming from abroad and their contacts to prevent transmission. Possibly, the prior knowledge of these phases resulted in a successful phase of containment of the covid-19 pandemic in these places. The mitigation phase, in turn, happens when the containment phase fails. The objective of this phase is to reduce the transmission curve. Isolating infected people is the main measure in this phase. Canceling events, prohibiting agglomeration of people, and recommending the avoidance of social contact are important actions to protect, above all, people from risk groups. The suppression phase is already more acute. Considering the failure of the previous phases, it can be said that what defines this phase is the purpose of suppressing the contagion as much as possible so that the health system does not collapse. Thus, social distancing measures are intensified, mandatory activities are suspended, such as work activities that require face-to-face contact and school activities. The last phase, the crisis recovery phase, occurs when the transmission curve is in decline and the country needs careful restructuring to provide for social and economic recovery (Walker *et al.*, 2020; Werneck and Carvalho, 2020; Yang *et al.*, 2020).

Associated with the challenges imposed by the context of the crisis in the different phases, within a multidimensional scope, the impacts of the pandemic are reported from behavioral levels, such as increased consumption of news and changes in eating and hygiene behavior (Aymerich-Franch, 2020), to levels related to cognitive functioning, such as reduced levels of well-being (Tabri, Hollingshead and Wohl, 2020), increased levels of anxiety and stress (Aymerich-Franch, 2020; Brooks *et al.*, 2020), and even at institutional levels, in which it was possible to observe a decline in trust in social institutions (Prati, 2020).

Specifically, regarding mental functioning, it was possible to verify that individuals with high self-control adhered more to the social distancing guidelines, without perceiving them as more or less difficult (Wolff *et al.*, 2020). In fact, Dubey *et al.* (2020), when conducting a search on PubMed and Google Scholar, found that forced quarantine can produce acute panic, anxiety, obsessive behaviors, hoarding, paranoia, depression and post-traumatic stress disorder

(PTSD) at long term. Therefore, in the same way that all the consequences that the crisis of the covid-19 pandemic may have on the mental health of individuals are not known, the specificities that may occur between different spheres of society are also unknown.

Researchers in the United States and Canada have found that exacerbated fear and psychological distress at high levels in the face of the coronavirus pandemic may lead the existence of a covid-19 stress syndrome (Taylor *et al.*, 2020). This syndrome is multifaceted and can be explained by the following dimensions:

1. fear of the severity of SARS-CoV-2, including the one of coming into contact with sources of virus contamination;
2. apprehension about socio-economic costs (e.g. personal finance);
3. xenophobic fears, that is, between nations;
4. traumatic stress symptoms associated with covid-19 (nightmares, intrusive thoughts, or images related to covid-19); and
5. covid-19-related compulsive checking behavior.

Having this in mind, the concern about the dangerousness of covid-19 is considered the central feature of the syndrome. The main risk factors are preexisting psychopathology, excessive avoidance related to covid-19, compulsive shopping, and coping difficulties during self-isolation. The authors also found that this syndrome in its various dimensions is considered an environmental predictor factor for symptoms of depression, anxiety, and stress.

Therefore, the development of safe and effective prophylactic vaccines against covid-19 was one of the main priorities of research institutions to face the pandemic. As a result, currently, in February 2021, according to WHO data (WHO, 2021), there are at least seven vaccines approved and in use in several countries, namely: BNT162b2/COMIRNATY Tozinameran (INN); AZD1222; Covishield (ChAdOx1_nCoV19); SARS-CoV-2 Vaccine (Vero Cell), Inactivated (lnCoV); SARS-CoV-2 Vaccine (Vero Cell), Inactivated; mRNA-1273; and Sputnik V.

However, in Brazil, there are only two in use, SARS-CoV-2 Vaccine (Coronavac) and AZD1222 (AstraZeneca). Despite these two vaccines showing satisfactory values in terms of their efficacy, with Pfizer Biontech being 95% effective in preventing covid-19 (Polack *et al.*, 2020) and Coronavac 50.38% (Palacios *et al.*, 2020), only 3.47% of the Brazilian population received the first dose and 1.09% received the second dose of any of these vaccines, according to data from the State Health Departments (Conselho Nacional de Saúde — CNS, 2020).

Data from the Ministry of Health (2021) reveal that there are about 112,209,815 confirmed SARS-CoV-2 cases and 2,490,776 deaths in Brazil, which results in a mortality rate of 1,161.6 deaths/1 million inhabitants, the 19th highest coefficient in the world ranking of mortality due to covid-19. Considering the foregoing, prophylactic measures are urgently needed to contain the pandemic, which has had devastating medical, economic, and social consequences. In the Brazilian context, the health emergency of covid-19 interferes with the political and social crisis that has been plaguing the country, aggravating the situation of vulnerability

that, in addition to the phenomena evidenced by this context, specifically in the educational field, are placed as one more problem (Dias and Pinto, 2020).

The Ministry of Education (MEC) Ordinance No. 343/2020 regulated education institutions to replace in-person classes with teaching by digital means, on an exceptional basis, while the pandemic lasts (Brasil, 2020b). The first changes took place in March 2020, in which all schools and higher education institutions (HEI) suspended classes as a protective measure, with social isolation as the main resource to reduce the impact on the population's health (Pott, 2020). This measure has produced a new reformulation in teaching practices and in the restructuring of institutions to meet the new rules considered exceptional (Ferreira *et al.*, 2020). Another example of the impact of the coronavirus pandemic on Brazilian education was the postponement of the application of the National High School Exam (ENEM, in the Brazilian acronym), both in print and digital versions (INEP, 2020).

Faced with this reality, the viable alternative to adapt teaching to the new conditions was and is being the various modalities arising from Distance Learning, with the aim of continuing the teaching and learning process and mitigating the impacts suffered in relation to the withdrawal of face-to-face classes (Marques and Fragas, 2020). It is worth mentioning a brief differentiation of what would be distance learning and remote teaching, since both types of teaching are currently being used and each of them has its specificities.

The first — Distance Learning — refers to the educational modality with a structure and methodology that appropriates the use of means and information technologies, in which students and teachers are separated both temporally and physically (Brasil, 2020a). Remote teaching, on the other hand, refers to a pedagogical solution, with a didactic configuration applied in a punctual way, using digital platforms, such as applications with tasks, content and/or synchronous (real-time) and asynchronous (not real-time) platforms (Barbosa, Viegas and Batista, 2020).

With all the changes arising from the covid-19 pandemic, education is yet another challenge in the range of adversities of the current scenario, as this situation has been demanding new configurations from the educational system to the teaching models, requiring rapid adaptations to technologies, in addition to ensuring its quality (Ferreira *et al.*, 2020).

In view of the above, the present research aims to analyze whether the suspension of face-to-face classes and/or remote teaching can be configured as stress factors among higher education students during the Covid-19 pandemic. More specifically, based on reports of university students undergoing remote academic activities (RAA) or with suspended academic activities (SAA), we seek to investigate which factors they are experiencing can be considered stressors in the pandemic context.

METHODS

This is an exploratory and descriptive research, which used statistical calculations to analyze essentially qualitative variables. Information on the methodological contributions used is described in the following.

PARTICIPANTS

A non-probabilistic sample of 267 university students was used, of which 87.4% were from the Northeast region; 5.6% from the Midwest region; 3.7% from the Southeast region; 2.2% from the South region; and 1.11% from the North region. The sample was divided into two sample groups. The first one consisted of 136 participants in RAA, with a mean age of 23.74 years old (SD = 6.46), predominantly women (77.9%), white (44.1%), from private institutions (69.9%), attending undergraduate courses (95.6%), and in the area of Health Sciences (45.6%). The second one consisted of 131 students in the SAA condition, with a mean age of 22.30 years old (SD = 3.48), most of them women (71%), self-declared brown (57%), from public universities (89,3%) and in the area of Human Sciences (40.5%).

MEASURES

Participants answered a sociodemographic questionnaire containing questions related to age, gender, type of study (remote or suspended), type of HEI (public or private) and this open question: "What factors and/or events have raised your stress level in the last four months?".

PROCEDURES

The questionnaire was published on the social networks Facebook, Instagram, WhatsApp, and Twitter and was hosted on the Google Forms platform between June 19 and 24, 2020. The invitation to participate in the survey, the information necessary to complete it and the Free Informed Consent Form comprised the elements preceding the questionnaire. All ethical prerogatives of research with human beings were followed (Brazilian CNS Resolutions N. 466/2012 — CNS, 2012 — and N. 510/2016 — CNS, 2016). The present research was approved by the Research Ethics Committee of the Federal University of Alagoas under Opinion No. 3,099,323.

DATA ANALYSIS

Two textual *corpora* (RAA and SAA) were elaborated from the responses of the participants. The textual data were processed and analyzed using the *Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires* (IRaMuTeQ) software (Ratinaud, 2009). Textual analysis consists of a specific type of data analysis that deals specifically with the analytical treatment of transcribed verbal material, therefore, texts produced in different ways (Nascimento and Menandro, 2006). Camargo and Justo (2013) add that this type of analysis deals with a specific type of data analysis, from which different types of texts are analyzed, and these procedures can happen either in a simple way, as in basic lexicography (such as calculation word frequency), even with multivariate analyses. On this occasion, we opted for multivariate analyses, namely the Descending Hierarchical Classification (DHC) using the Reinert method (Camargo and Justo, 2013). This procedure classifies text segments in line with their respective vocabularies, based on frequency and χ^2, allowing the creation of classes of Elementary Context Units (ECU) (Camargo, 2005). Classes are generated by the software that performs calculations and provides results that allow describing each of

the classes, mainly by their characteristic vocabulary (lexicon) and by their asterisked words (variables), and based on their content the classes are named, described, and discussed in the light of the theoretical framework constructed in the present study.

RESULTS

CORPUS 1 — STUDENTS OF THE REMOTE ACADEMIC ACTIVITIES CONDITION

The DHC of *corpus* 1 was formed by 408 ECU and presented 76.47% of use, with 3,431 words. The textual *corpus* called "*Psychosocial stressors resulting from the new coronavirus pandemic in students in RAA*" was segmented into four classes. In the first partition, class 4 was arranged in opposition to the other classes; in the second partition, class 3 was arranged separately from 1 and 2; and, finally, the last partition separated classes 1 and 2. These results can be seen in Figure 1, where the words of each class, the values of the respective χ^2 and the frequency of each word is presented.

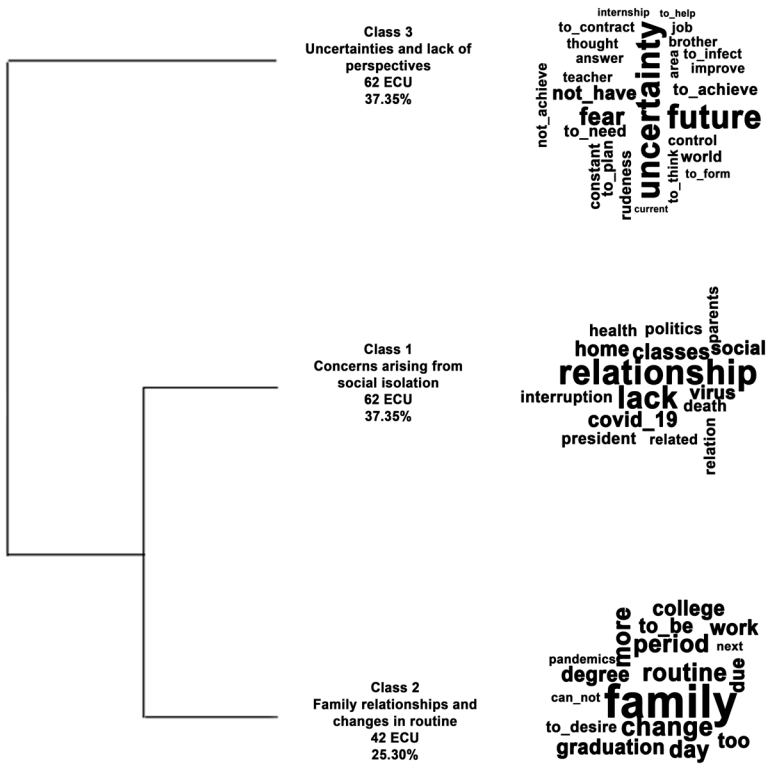

Figure 1 – Dendrogram of psychosocial stressors resulting from the new coronavirus pandemic in students in remote academic activities.
ECU: Elementary Context Units.
Source: Elaborated by the authors.

Analyzing the risk factors for stress pointed out by university students submitted to RAA, it can be observed, as shown in Figure 1, that the first class associates "*emotional, educational and family*" factors as stress generators during the quarantine period (57.69% of ECU). The most relevant words are: "*family*" (f = 54; χ^2 = 26.04), "*class*" (f = 28; χ^2 = 18.91), "*house*" (f = 45; χ^2 = 18.09), "*fear*" (f = 21; χ^2 = 16.51), and "*quarantine*" (f = 18; χ^2 = 14.01). The speeches organized in this class demonstrate how the resignification of the future and personal instability, as well as adaptations to a new format of family life, emerge as significant concerns in recent months: "*I am uncertain about my future and fear of losing someone whom I love*" (participant 173, private HEI); "*staying at home with my family, distance learning compromising my academic performance*" (participant 233, private HEI); "*overloading myself with extra activities, living with the family*" (participant 260, public HEI); and "*the fact of being in quarantine is very relevant for stress, especially being in the final stage of my course*" (participant 225, public HEI).

Class 2 reveals evocations that revolve around "*routine changes and consequent adaptation needs*" (13.46% of ECU) as generators of stress during this period. The most salient words were: "*lack of*" (f = 30; χ^2 = 91.08), "*routine*" (f = 18; χ^2 = 80.05), "*difficulty*" (f = 12; χ^2 = 40.57), "*plan*" (f = 6; χ^2 = 39.33) and "*thought*" (f = 6; χ^2 = 39.33). The speeches evidenced in this class address the damages of the pandemic, considering the difficulties imposed by the crisis: "*social isolation, impaired plans, political scenario and difficulty in establishing a productive routine*" (participant 253, public HEI); "*lack of confidence in not fulfilling my goals*" (participant 234, public HEI); "*difficulty establishing a routine at home*" (participant 178, public HEI); "*the pandemic, the feeling of not being able to complete my plans*" (participant 241, public HEI); and "*in the face of the pandemic, lack of support from both sides, thinking that I can handle and control everything*" (participant 211, private HEI).

Class 3 emphasizes the "*academic malaise inherent to academic experiences in the everyday pandemic*" (12.5% ECU). The following words were most frequently evoked: "*stress*" (f = 18; χ^2 = 133.71), "*college*" (f = 15; χ^2 = 65.64), "*pressure*" (f = 6; χ^2 = 42.82), "*factor*" (f = 6; χ^2 = 42.82), and "*day*" (f = 6; χ^2 = 42.82). The speeches extracted from this class directly link stress to academic factors. It can be said that, for those who are carrying out teaching activities in this period, the addition of this obligation can provide an increase in discomfort: "*college, online classes and social isolation*" (participant 141, public HEI); "*anxiety and stress with the internet*" (participant 169, public HEI); "*college pressure, staying at home all the time, the accumulated pressure makes me feel stressed quite often during the day*" (participant 185, public HEI); and "*feeling helpless, not going out in situations where a friend needs a hug, the days all seem the same*" (participant 261, public HEI).

The fourth and last class indicates "*political, health and interpersonal*" stressors as causing stress (16.35% of ECU) and presents the following words more frequently: "*politics*" (f =15; χ^2 = 80.64), "*health*" (f = 15; χ^2 = 46.69), "*discussion*" (f = 12; χ^2 = 63.87), "*problem*" (f = 9; χ^2 = 47.43), and "*instability*" (f = 9; χ^2 = 47.43). This class goes beyond the most personal level and includes other spheres of life that act as stress potentiating agents: "*Brazilian politics, public health and social conscience*" (participant 163, public HEI); "*covid-19 and political instability in Brazil*" (participant

218, public HEI); "*financial difficulty and the problems of people close to me that are important to me*" (participant 167, private HEI); "*the existence of capitalism and its influences on the way we are facing the pandemic and social isolation*" (participant 247, public HEI); and "*discussion about covid-19 with people who refuse to believe in the existence of the virus*" (participant 255, public HEI).

CORPUS 2 — STUDENTS IN SUSPENDED ACADEMIC ACTIVITIES CONDITION

The DHC of *corpus* 2 was formed by 264 ECU and presented 62.88% of use, with 2,580 words being analyzed. *Corpus* 2, called "*Psychosocial stressors resulting from the new Coronavirus pandemic in students in SAA*", was subdivided into three classes. In the first partition, class 3 was arranged in opposition to 1 and 2. In the second, classes emerged were 1 and 2. These results appear in Figure 2, in which the words of each class, the values of the respective chi-squares and the frequency of each word are presented.

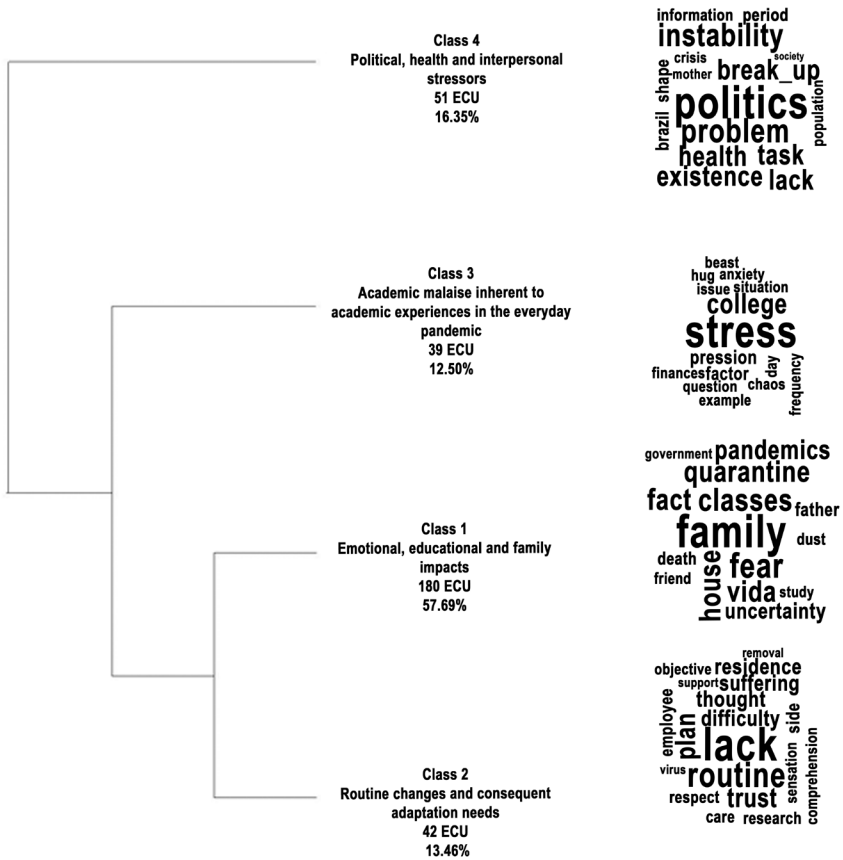

Figure 2 – Dendrogram of psychosocial stressors resulting from the new coronavirus pandemic in students in suspended academic activities.
ECU: Elementary Context Units.
Source: Elaborated by the authors.

When analyzing the risk factors to stress pointed out by university students submitted to suspended academic activities (SAA), it can be observed, as shown in Figure 2, that class 1 reveals "*concerns arising from social isolation*" (37.35% of ECU) as stress elicitors during the pandemic. The most relevant words were: "*social isolation*" (f = 26; χ^2 = 29.43), "*lack*" (f = 20; χ^2 = 17.68), "*relationship*" (f = 10; χ^2 = 17.85), "*class*" (f = 8; χ^2 = 14.01), and "*covid-19*" (f = 42; χ^2 = 9.41). In this class, speeches are observed that deal with apprehensions and difficulties related to the pandemic daily life and its repercussions on various aspects of life: "*political issues, overload in extracurricular activities, affective personal relationships*" (participant 14, public HEI); "*social isolation, end of relationship, interruption of classes*" (participant 225, public HEI); "*lack of direction in my professional life, distance from people, lack of better resources*" (participant 232, public HEI); "*lack of political support in the face of the catastrophic health scenario in the country, lack of concrete perspectives regarding a totally uncertain future, loss of known people due to covid-19*" (participant 72, public HEI); and "*inadequate behavior of my father in the face of the pandemic, closing of my parents' 30-year-old company*" (participant 257, public HEI).

Class 2 indicates "family relationships and changes in routine" as triggers of stress (25.30% of ECU). The most relevant words were: "*family*" (f = 16; χ^2 = 36.24), "*routine*" (f = 12; χ^2 = 23.05), "*change*" (f = 6; χ^2 = 18.38), "*period*" (f = 6; χ^2 = 18.38) and "*power*" (f = 4; χ^2 =12.10). In this class, the family appears sometimes as a concern in the face of the virus and its health consequences, sometimes as a stressor within the home itself, causing problems in interpersonal relationships. Speeches that indicate stressors related to daily readaptations were also recurrent: "*radical change of routine, plans suspended and living without perspective, attachment to changes that were foreseen and were not possible to be carried out*" (participant 143, public HEI); "*social isolation, family member alcoholism, lack of space at home, lack of disposition and a broken computer*" (participant 31, private HEI); "*coronavirus pandemic, death of some family members, possible anxiety crises of everyone who lives with me and my procrastination*" (participant 108, private HEI); "*not being able to leave the house or receive my friends and family*" (participant 99, public HEI); and "*full-time living with my family, small things they do stress me out, but it doesn't happen every day*" (participant 201, public HEI).

Finally, class 3 organized evocations that represent "*uncertainties and lack of perspectives*" (37.35% of ECU) as triggers of stress during the pandemic period. There are concerns and insecurities about the future. The most salient words were: "*uncertainty*" (f = 26; χ^2 = 39.79), "*future*" (f = 28; χ^2 = 33.67), "*fear*" (f = 14; χ^2 = 15.28), "*to possess*" (f = 10; χ^2 = 17.85), and "*to achieve*" (f = 14; χ^2 = 14.10). This class measures the fear that emerges from the adverse scenario. The rupture of plans and an uncertain reorganization fragment the students' notion of future with the academic activities paralyzed: "*university and perspective of the future*" (participant 129, public HEI); "*insecurity and instability*" (participant 25, private HEI); "*future perspective and fear of my parents contracting covid-19*" (participant 58, public HEI); "*uncertainty of tomorrow, fear of having to go back to work/study in person under current conditions and contracting covid"* (participant 16, male, public HEI); and "*uncertainty*

about the future, not being able to achieve my goals and objectives (graduate, leaving the internship and getting a job)" (participant 138, public HEI).

DISCUSSION

Considering that the covid-19 pandemic has generally triggered an increase in the population's levels of stress and anxiety (Taylor *et al*., 2020), the objective of this investigation was to analyze how the presence or absence of remote academic activities in the pandemic period can be considered an additive to the stress of university students. Students in two conditions — in RAA and in SAA — answered openly about which factors can be associated with stress in the months of April, May, June and July 2020.

Regarding the speeches produced by the group in RAA, it is possible to observe that, in three of the four classes, factors related to the context of remote teaching were revealed as stressors, although in the four classes, simultaneously, stressing aspects of a general order report elements not directly related to the teaching context. Stressful events not related to the academic context mainly refer to problems in establishing interpersonal relationships with family members, difficulties in maintaining routines, psychological pressure in the face of future uncertainties, distancing from loved ones, and concern for the country's future, for example. As for the stressors related to the context of remote classes, difficulties in having an environment conducive to learning at home, problems with the internet, pressure from the university, difficulty with online classes, and insecurity regarding the quality of teaching are more frequent.

Regarding the reports of the group in SAA, it is also possible to observe that all classes present stressors not directly related to the suspension of academic activities. However, more specifically, two classes refer to stressors related to the suspension of academic activities as stress triggers. Here, some of the stressful events not related to teaching include covid-19 itself, social isolation, lack of routine, difficulties in interpersonal relationships, political instability, illness of family members, lack of financial resources, loss of acquaintances, and uncertainty about the future. As for the aspects related to the interruption of academic activities, it is possible to highlight the suspension of classes, the lack of resources to continue at the university, the concern with carrying out the internship, the lack of security about the conclusion of the course, among others, such as stressful events.

In order to draw a parallel between the speeches of the two groups, the multidimensionality of factors associated with stress in the pandemic period is a commonplace in the participants' evocations. This brings the two groups together in terms of stress-triggering repertoires during this period of crisis. On the other hand, the results point to a stronger link between stress and academic activity on the part of the RAA group, given that it can be observed in the configuration of the classes (three of the four sets refer to aspects related to remote teaching), as well as in the frequency of attendance of words. The group of respondents in SAA, on the other hand, has a strictly concern with the uncertainties of the future, linking part of this instability to the suspension of academic activities. In

addition to this aspect, it was also possible to observe that, for the group with suspended activities, the return to activities generates a contingent of threat to the transmission of covid-19, a fear of being contaminated, being, therefore, indicated as a stressor factor by the students.

Stressors not linked to teaching are similar to data obtained by researchers in other investigations (Taylor *et al.*, 2020; Wang *et al.*, 2020) that found that the covid-19 stress syndrome is multifaceted and consequently can be explained by the dimensions of fear of the severity of the virus and its transmission, apprehension about the socioeconomic costs, xenophobic fears, and symptoms of traumatic stress associated with covid-19. In the case of the results of the investigation with this cut of university students that the present study deals with, only xenophobic apprehensions were not evidenced. Possibly countries that undergo continuous migration processes tend to be concerned about the vulnerability derived from such processes.

In fact, the fear of the unknown in the face of an uncertain future, characteristic of this period of health emergency, can result in an increase in anxiety levels both for those with preexisting mental health problems and for those who are psychologically healthy (Cao *et al.*, 2020; Yao *et al.*, 2020), and the implications of the pandemic for mental health are still poorly understood (Rajkumar, 2020).

The data from the present research contribute to the expansion of knowledge in this area as they reveal information about triggering factors of stress for each of the different academic contexts that constitute the interest of this research. Thus, it is observed that students in RAA cite as sources of stress the difficulties in accessing favorable learning conditions (e.g., appropriate location, stable internet, quality education). It is important to highlight that, if this difficulty of access cited by the participants as a stressor is additionally extended to the conditions of students who do not have operational access (equipment and gadgets suitable for remote teaching), the problem becomes even more severe. Additionally, university students without activities also indicate damage to mental health when reporting the imprecision of their life plans due to the suspension of academic activities.

The results demonstrate that, if the objective of complying with the recommendations of the Ministry of Education is to promote teaching conditions for students, in order to avoid the stagnation of the educational process, considering the accentuated impacts on the educational system, as well as the interruption students' career, this measure seems to be effective, at least partially. Although many barriers are reported regarding remote teaching, the complete distance from the academic sphere can compromise the well-being of university students, especially in the long term.

Bao (2020) provides evidence on what may have been a first experience of this teaching modality in the context of the pandemic. This is a case study developed at a Beijing university that sought specific solutions for the resumption of academic activities. Five principles were identified as fundamental to ensure the quality of remote teaching. The first one refers to the appropriate relevance of the quantity, difficulty, and extent of the content to be taught to

students. The second one mentions how essential it is to adjust the speed of teaching in order to guarantee the delivery of information didactically. The third one emphasizes the importance of support from teachers and staff to provide timely feedback to students after classes. The fourth one refers to the quality participation of students in activities. And the fifth one is concerned with contingency planning so that technical problems can be handled in a timely manner. Additionally, the Chinese experience reported in this case study highlights that, in order to ensure all these principles, it is still essential to effectively deal with student anxiety so that they can endorse efficient engagement for learning in this adverse covid-19 scenario.

Arruda (2020) developed an essay systematizing information about the impacts of the pandemic on education around the world. Of the most significant considerations, the relationship between investment and challenges in education was highlighted in view of the unprecedented consequences of the pandemic. Developed nations such as China, the United States and other European countries have been investing heavily in technology to provide access to communication platforms for teachers and students, which favors the reduction of the impacts of the pandemic on education. However, the challenges in maintaining continuous access to content, in the didactics and attention of teachers in relation to the teaching-learning process are posed independently of these efforts. The author draws attention to the weakening of education as an institutional space in the condition that challenges are prioritized rather than incentives. In this perspective, distancing oneself from the educational process can be more harmful than not investing in an approach conveyed in a responsible and contextualized way with academic life.

In Brazil, the health crisis denounced the serious situation of the political, economic, cultural, and social systems (Sá, Miranda and Canavêz, 2020). It would not be difficult to assume that education would be among the most affected targets. From this perspective, people's suffering in this context is impacted by agents at different levels, which requires careful management of the aspects that make up this set. Amid the precariousness of health and economic and social instability, academic training appears as another aggravation. Either because it is imposed as a mandatory activity, or because it is suspended.

Some HEI have been adopting crisis containment plans, organizing measures that make it possible to reduce damage to education, both public and, mainly, private HEI. In another direction, it is possible to observe the existence of HEI that remain without devices for continuity of studies under the exceptionality of the pandemic without a calendar forecast (Arruda, 2020). These findings confirm the vast path that exists for the implementation of remote teaching and the resignification of the educational process in this period.

In general, the results presented in this study make it possible to highlight at least two important aspects:

1. the consequences of this health crisis effectively configure themselves as stressful events that compete with the concern with academic life, regardless of whether or not students are in remote activity;

2. although carrying out digital academic activities during the pandemic provides unease about a set of aspects, from the questionable quality of education to access to such activities, in turn, the complete suspension of activities suggests the addition of yet another component in the range of insecurities and uncertainties regarding the future.

Both conditions have implications that are reported as stressful by students. Possibly, the alteration or partial interruption of the life plans of the university students who took part in this study is the crucial point that places academic life as another stressor during the pandemic period. It is necessary to deepen the analysis of the contents evoked by the participants and carefully trace this association that the data suggest between stress, a pandemic, and the performance of remote academic activities in future studies.

In addition to these aspects, the students' responses point to elements within a broader order, such as political, social, and economic instability, as potential stressors, reinforcing the urgency of an agenda for planning and implementing public policies that make it possible to reduce the problems arising from the pandemic.

Despite raising important reflections for the consideration of academic activities or their suspension during the covid-19 pandemic as stress triggers in university students, this investigation has some limitations that can be solved in future research. For example, it was not possible to associate the aspects indicated stressors as HEI (public or private) to gender, ethnicity, or student income. These dimensions deserve to be analyzed since they consist of potential markers of social inequalities that, in turn, play a central role in people's mental health.

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