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Symptoms of depression and stress hinder professors' creativity: a study during the pandemic

Sintomas de depressão e estresse barram a criatividade de professores: estudo durante a pandemia

Vanessa Pederiva[1], Isadora Rossa[2], Ilana Andretta[1]

[1] Universidade do Vale do Rio dos Sinos, Centro de Ciências da Saúde, Programa de Pós-Graduação em Psicologia. São Leopoldo, RS, Brasil. Correspondence to: V. PEDERIVA. E-mail: <vanessa-246@hotmail.com>.
[2] Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto, Programa de Pós-Graduação em Psicologia. Ribeirão Preto, SP, Brasil.

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Abstract

Objective
This study sought to analyze wheter a correlation exists between symptoms of depression, anxiety, and stress and barriers to personal creativity among higher education professors, as well as to examine and discuss whether these negative symptoms predict barriers to creativity.

Method
A total of 386 professors from higher education institutions in Brazil participated in the study, completing an online questionnaire at the end of the first year of the COVID-19 pandemic. The following instruments were used: Sociodemographic Data Questionnaire; Depression, Anxiety, and Stress Scale; and Inventory of Barriers to Personal Creativity.

Results
The results showed that symptoms of depression and stress hinder the expression of creativity, with depression being particularly significant as it explained all barriers to creativity.

Conclusion
Negative symptoms interfere with the quality of life and well-being of professors, and consequently impact the work environment and the expression of creativity for problem-solving.

Keywords: Barriers; Creativity; Health mental; Higher education.

Resumo

Objetivo
Este estudo objetivou analisar se há correlação entre sintomas de depressão, ansiedade e estresse e barreiras à criatividade pessoal de professores do ensino superior, além de verificar e discutir se esses sintomas negativos predizem as barreiras à criatividade.

Método
Participaram 386 professores do ensino superior do Brasil que responderam um formulário online ao final do primeiro ano da pandemia da Covid-19. Utilizou-se os instrumentos: Questionário de Dados Sociodemográficos, Escala de Depressão, Ansiedade e Estresse e Inventário de Barreiras à Criatividade Pessoal.

Resultados
Os resultados demonstraram que sintomas de depressão e estresse barram a expressão da criatividade, com destaque para depressão, que explicou todas as barreiras à criatividade.

Conclusão
Sintomas negativos interferem na qualidade de vida e bem-estar dos professores e consequentemente no ambiente de trabalho, na expressão da criatividade para resolução de problemas.

Palavras-chave*: Barreiras; Criatividade; Saúde menta; Ensino superior.*

The academic context, in which higher education professors are inserted, is commonly marked by precarious working conditions, a large number of classes and students, lack of support to deal with demands, insufficient salaries, and pressures from government bodies that require a balance between teaching, research, extension activities, and high productivity (Alencar et al., 2018). Given this context of high and diverse demands, professors are exposed to stressful factors that can negatively affect their health (Silva & Oliveira, 2019).

Studies demonstrate that higher education professors often face psychological distress and negative work-related symptoms (Wagner et al., 2019). They further indicate a higher occurrence of mental disorders like depression and anxiety among these professionals compared to the general population (Ferreira et al., 2015; Mark & Smith, 2012). Factors such as demanding workloads, physical and mental exertion, excessive work commitment, and low resilience, have been linked to elevated levels of depression, anxiety, and reduced job satisfaction among professors in higher education (Mark & Smith, 2012).

Aggravating these conditions is the pandemic caused by the coronavirus (SARS-CoV-2, Severe Acute Respiratory Syndrome Coronavirus 2), responsible for Coronavirus Disease 2019 (COVID-19), which emerged worldwide in 2020 and continued throughout 2021. In this pandemic scenario, professors in Higher Education Institutions (HEIs) had to adapt to the new format of virtual classes, cope with excessive work hours and limited planning time, in addition to experiencing a social devaluation, impacting their mental health (Leitão & Capuzzo, 2021). These factors may have contributed to more intense negative symptoms among professors, as their routines and practices had to undergo changes (Cruz et al., 2020; Souza et al., 2021).

Studies conducted during the pandemic period have shown a prevalence of these symptoms among the teaching population (Cruz et al., 2020; Freitas et al., 2021; Jakubowski & Sitko-Dominik, 2021). Authors Ozamiz-Etxebarria et al. (2021) conducted a meta-analysis based on a systematic literature review to investigate the prevalence of these symptoms among teachers during the pandemic period of December 2019 to June 2021. The results indicated that stress was the most prevalent symptom (30%), followed by depression (19%), and anxiety (17%). There were also differences in the degree of education, with teachers in primary education presenting higher levels of anxiety, while university professors showed higher levels of stress.

However, despite these findings, previous studies conducted before the pandemic already demonstrated that the most prevalent negative symptoms in this population, across various levels of education, are depression, anxiety, and stress. The focus of studies in this area is directed at understanding potential issues and seeking solutions and means to prevent exacerbation

(Dalagasperina & Monteiro, 2016; Wagner et al., 2019). These symptoms negatively impact the well-being and quality of life of individuals, and among teachers, they are the main reason for requesting leave from work, with a higher prevalence in this group compared to the general population (Ferreira et al., 2015).

Depression, anxiety, and stress symptoms are described by Vignola and Tucci (2014) as emotional responses to stressors that bring about cognitive and behavioral changes. According to the authors, depressive symptoms are primarily characterized by the presence of hopelessness, depressed mood, apathy, and anhedonia, whereas anxiety symptoms are characterized by fear, constant worry, muscular tension, among others. Stress, on the other hand, is an emotional state that varies depending on the assessment of the situations experienced as a threat or a challenge. These symptoms may also share common characteristics such as sleep disturbances, appetite changes, fatigue, negative self-cognitions, and a sense of inability to cope with problems (Beck et al., 2017; Knapp & Beck, 2008).

Based on current and prior experiences, and socio-emotional learning that occurs throughout life, each individual constructs a set of core beliefs about the self, the world, and the future, known as the cognitive triad. Thus, stressful situations in the daily work of teachers can be detrimental if the way in which individuals interpret them is associated with a negative cognitive triad, such as perceiving oneself as incapable, the world as dangerous and hostile, and the future as hopeless (Dobson & Dobson, 2011). In this way, a person who believes themselves to be incapable may interpret certain situations as challenges that are excessively difficult to face, thereby increasing their symptoms of stress, for example (Vignola & Tucci, 2014).

Based on this, it is understood that symptoms of depression, anxiety, and stress can negatively affect university professors' cognitive, behavioral, and social performance. Specifically, it can affect their daily lives or workplace productivity by hindering their ability to seek solutions to problems (Alencar, 2010; Chnaider & Nakano, 2021; Grahek et al., 2019), or by promoting a lack of motivation and pleasure in daily tasks (Alves, 2018; Diniz et al., 2020). Moreover, the pandemic scenario may have acted as an intensifier of such symptoms (Ornell et al., 2020), thereby further hindering their creative capability for seeking solutions. Therefore, experiencing one or more of these negative symptoms can interfere with an individual's creative process, making it difficult for teachers to face everyday problems (Fleith, 2010; Chnaider & Nakano, 2021).

Creativity has been increasingly valued by society in various contexts, including educational and organizational (Miranda & Morais, 2019; Nakano & Wechsler, 2018). In the work environment, the creative process is usually focused on solving everyday problems (Moraes & Lima, 2009). The construct of creativity has been studied by various authors, who characterize it as a complex and multifaceted phenomenon involving interactions between personal characteristics, such as personality and skills, and environmental elements, such as local resources and the culture in which the individual is immersed (Amabile & Pillemer, 2012; Miranda & Morais, 2019; Sternberg, 2008).

According to Nakano (2018), creativity is considered an important skill of the 21st century and has received considerable attention regarding its assessment. Some benefits resulting from this include expanding knowledge about the nature and development of this skill, promoting advancements in the study of this field, exploring different ways in which people demonstrate their competencies, evaluating the characteristics of a creative product, recognizing and training important skills, and enhancing understanding of elements that facilitate or hinder the development of creative potential (Nakano, 2018; Nakano & Wechsler, 2018).

In a study conducted by Santos et al. (2020) aiming to understand people's perception of the relationship between optimism and creativity, it was observed that having positive expectations for the future (a characteristic highly associated with optimistic individuals) was related to being imaginative and having an attraction to that which is new, both characteristics highly associated with creative individuals. Moreover, most study participants (62.7%) believed they could be more creative when they felt optimistic, understanding that these individuals tend to seek unusual solutions to problems and are willing to take greater risks without fear of making mistakes.

With this, it can be understood that negative symptoms can contribute to the individual encountering cognitive, behavioral, and self-regulation barriers to expressing their creativity (Alencar, 2010). It is understood that the context in which the individual is situated also influences their emotions, feelings, behavior, and the expression of their creative potential (Alencar, 2010; Beck, 2022; Miranda & Morais, 2019). Similarly, the fear of the unknown and taking risks was evident during the pandemic period, which may have negatively impacted problem-solving (Cruz et al., 2020; Ornell et al., 2020).

Therefore, the present study sought to investigate the existance of a relationship between symptoms of depression, anxiety, and stress and barriers to the expression of personal creativity among university professors in Brazil during the pandemic context. Additionally, the study aimed to analyze and discuss whether these negative symptoms predict barriers to the expression of creativity in the participants.

Method

Based on the proposed objective, this study followed a quantitative, cross-sectional, and explanatory design (Gil, 2017).

Participants

A total of 386 professors from HEIs spread across 25 Brazilian states and the Federal District participated in this study. The participants' age ranged from 25 to 65 years, with a mean of 45.2 years (*SD* = 9.57). Among them, 62% (*n* = 239) were female, and most were married (66%, *n* = 257). Table 1 contains information about the institution where the participants were teaching at the time of their participation, as well as the region of the country they reside in and their areas of expertise.

Table 1
Data about the teaching institution, region of residence, and field of training of higher education professors

1 of 2

Sociodemographic Data	%	*n*
Teaching Institution		
Private	34.7	134
Public	60.1	232
Public and Private	5.2	20
Region of residency		
South	40.9	158
Southeast	17.6	68
Midwest	14.5	56
North	7.0	27
Northeast	19.9	77

Table 1
Data about the teaching institution, region of residence, and field of training of higher education professors

Sociodemographic Data	%	*n*
Area of training		
Health	25.9	100
Applied social sciences	19.9	77
Humanities	17.4	67
Exact and Earth Sciences	9.6	37
Biological Sciences	9.6	37
Engineering	7.8	30
Linguistics, Literature, and Arts	5.4	21
Agricultural Sciences	3.1	12

Instruments

Sociodemographic Data Questionnaire – This instrument was developed by the researcher, self-administered by participants, and aimed to characterize the sample. It included questions regarding age, sex (female or male), marital status, participants' field of training, and the city and state of residence at the time of their participation.

Depression, Anxiety, and Stress Scale (DASS-21) (Lovibond & Lovibond, 1995; Vignola & Tucci, 2014) – The scale consists of 21 statements, with seven statements for each subscale. Participants rate each statement on a four-point Likert scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). The instrument assesses self-reported symptoms of depression, anxiety, and stress based on how the respondent felt during the last week. It has shown good reliability in this study, as described in Table 1. The scores for each subscale are doubled to obtain the results, which are classified as follows: depression: 0-9 *normal*, 10-13 *mild*, 14-20 *moderate*, 21-27 *severe*, 28-42 *extremely severe*; anxiety: 0-7 *normal*, 8-9 *mild*, 10-14 *moderate*, 15-19 *severe*, 20-42 *extremely severe*; stress: 0-14 *normal*, 15-18 *mild*, 19-25 *moderate*, 26-33 *severe*, 34-42 *extremely severe*.

In the validation studies, the instrument demonstrated a good degree of reliability for each of the subscales: depression (*Cronbach's alpha* = 0.90), anxiety (*Cronbach's alpha* = 0.86), and stress (*Cronbach's alpha* = 0.88), as well as for the total of the three subscales (*Cronbach's alpha* = 0.95). The degree of instrument reliability in the present study, which was adequate, is presented in Table 2.

Table 2
Mean, median, standard deviation, and reliability index

Variables	Mean	Median	Standard Deviation	Cronbach's Alpha
Depression	8.71	6.0	9.28	0.90
Anxiety	7.07	4.0	8.58	0.88
Stress	14.24	7.0	10.23	0.89
DASS-21 total	30.03	25.0	25.26	0.95
Inhibition/Shyness	65.77	64.5	23.85	0.95
Lack of Time/Opportunity	43.00	44.0	13.77	0.91
Social Repression	35.39	35.0	13.09	0.90
Lack of Motivation	49.52	47.0	18.97	0.93
Barriers Total	193.68	192.0	61.26	0.97

Note: Inventory of Barriers to Personal Creativity: F1 Inhibition/Shyness; F2 Lack of Time/Opportunity; F3 Social Repression; F4 Lack of Motivation. DASS-21: Depression, Anxiety, and Stress Scale.

Inventário de Barreiras à Criatividade Pessoal "*Inventory of Barriers to Personal Creativity*" (Alencar, 2010) – This instrument aims to identify barriers encountered in the expression of personal creativity. Starting from the initial reflection "I would be more creative if...", the respondent evaluates the 66 statements using a five-point scale, ranging from 1 – *strongly disagree* to 5 – *strongly agree*. Through a factor analysis conducted by the author, it was possible to chain four factors, corresponding to four modalities of barriers. Factor 1, inhibition/shyness, consists of 23 statements related to emotional aspects; factor 2, lack of time/opportunity, includes 14 items related to limited availability of time, resources, and opportunity to express one's creative potential; factor 3, social repression, comprises 14 statements related to social aspects; and factor 4, lack of motivation, consists of 20 items referring to the absence of personal motivational aspects that facilitate the expression of creative potential (Alencar, 2010).

It is worth noting that all factors of the instrument, considered barriers to the expression of creativity, demonstrated good reliability in this research, as measured by *Cronbach's alpha*, described in Table 2. In the validation studies, the reliability of the four factors was adequate: F1 Inhibition/Shyness (*Cronbach's alpha* = 0.91), F2 Lack of Time/Opportunity (*Cronbach's alpha* = 0.85), F3 Social Repression (*Cronbach's alpha* = 0.85), F4 Lack of Motivation (*Cronbach's alpha* = 0.88).

Data Collection Procedures

Data collection was carried out through the Google Forms platform by creating an online form which contained the Sociodemographic Data Questionnaire, the Inventory of Barriers to Personal Creativity, and the DASS-21. The form's access link, along with the invitation to participate in the research, was sent via email to the researchers' contacts, requesting them to forward it to other contacts and so on. It was open to all university professors in Brazil who were interested in participating. Before participants began responding to the form, which was estimated to take 30 minutes, the first page contained the Informed Consent Form (ICF), which had to be accepted by clicking on the option at the end of the form that stated, "I agree to participate in this research". All those who participated selected this option and were free to withdraw from the research at any time without any consequences. Data collection took place between February and May 2021. It should be noted that the form included instructions for participants to respond to the questions based on their experience as educators.

This research was evaluated by the Research Ethics Committee of the *Universidade do Vale do Rio dos Sinos* and accepted under CAAE No.: 40556020.4.0000.5344. It complied with resolution 510/2016 of the Brazilian National Health Council regarding confidentiality and ethics for the collection, analysis, and storage of data in research with human subjects. This resolution was also considered for the development of the Informed Consent Form, made available to participants at the beginning of their participation.

Data Analysis

The data were analyzed using the IBM®SPSS® Statistics software, version 25.0. The *Shapiro-Wilk* test was used for checking data normality, and based on this, non-parametric tests were chosen for correlation analyses, which were performed using the *Spearman's rank* correlation test. Multiple linear regression analyses were run separately for each outcome, including the four barriers to personal creativity and the overall total of the instrument, resulting in a total of five outcomes. The predictor variables were the same in all analyses: the three negative symptoms

of depression, anxiety, and stress. The analyses were conducted using the *Stepwise* method. It is worth noting that prerequisites for regression analyses were considered, such as the absence of multicollinearity, with statistical values between 0.20 and 10, and the absence of autocorrelation, with values close to 2, ranging from 1.5 to 2.5 (Field, 2021).

Results

The descriptive data of the DASS-21 and the Inventory of Barriers to Personal Creativity are presented in Table 2, which includes the mean, median, standard deviation, and reliability index of the symptoms of depression, anxiety, and stress, as well as the four barriers to personal creativity and the overall total of both instruments. The mean for each of the negative symptoms fell within the normal range but approached the threshold for mild symptoms.

Table 3 presents the correlation analysis between all variables, including the symptoms of depression, anxiety, and stress, the barriers to the expression of personal creativity, and the overall total of the instruments. From this table, it is possible to observe that all correlations were positive and significant, indicating that the higher the negative symptoms, the more barriers teachers encounter in expressing their creativity in the workplace.

Table 3
Spearman's rank correlation coefficient

Emotional Symptoms	Inhibition/Shyness	Lack of Time/Opportunity	Social Repression	Lack of Motivation	Barriers Total
Depression	0.342**	0.315**	0.334**	0.379**	0.401**
Anxiety	0.289**	0.261**	0.307**	0.244**	0.318**
Stress	0.286**	0.300**	0.332**	0.273**	0.347**
DASS-21 total	0.334**	0.320**	0.354**	0.325**	0.389**

Note: **$p \leq 0.001$. Inventory of Barriers to Personal Creativity: F1 Inhibition/Shyness; F2 Lack of Time/Opportunity; F3 Social Repression; F4 Lack of Motivation. DASS-21: Depression, Anxiety, and Stress Scale.

The results of the regression analyses are presented in Table 4, showing that symptoms of depression predict all barriers to personal creativity, as well as the overall total of the instrument. Symptoms of stress predict barriers related to lack of time/opportunity, social repression, and the overall total of the instrument. In other words, the greater the negative symptoms of depression and stress, the greater the barriers to the expression of personal creativity. Symptoms of anxiety did not demonstrate prediction of any barriers to participants' creativity.

Table 4
Stepwise linear regression analysis

Barriers to Personal Creativity	DASS-21	Beta	*t*	Adjusted R^2
Inhibition/Shyness	Depression	0.361	7.591**	0.128
Lack of Time/Opportunity	Stress	0.193	2.927**	0.087
	Depression	0.156	2.360**	0.098
Social Repression	Stress	0.213	3.260**	0.105
	Depression	0.169	2.595*	0.118
Lack of Motivation	Depression	0.331	6.862**	0.107
Barriers Total	Depression	0.276	4.303**	0.138
	Stress	0.145	2.255*	0.147

Note. *$p \leq 0.05$; **$p \leq 0.001$. Inventory of Barriers to Personal Creativity. DASS-21: Depression, Anxiety, and Stress Scale.

Discussion

As per Vignola and Tucci (2014), symptoms of depression are associated with various emotions, including embarrassment, which can negatively impact an individual's daily performance. This understanding is consistent with the findings of the present study, in which depressive symptoms explain 12.8% of the barrier to creativity inhibition/shyness. The feeling of embarrassment generates a sense of inferiority and shyness, leading to avoidance or escape behaviors in situations that provoke it, often because the individual does not know how to deal with such emotions. This type of behavior is reinforced as it alleviates the feeling of embarrassment, thus, every time or most of the time the feeling arises, it is repeated, corroborating the individual's discomfort and lack of safety in expressing themselves and exposing their ideas (Alencar, 2010; Beck et al., 2017).

Thus, not believing in one's own abilities and fearing disapproval and taking risks can generate depressive symptoms, thereby hindering an individual's ability to express themselves creatively in the work environment (Alencar, 2010). Fear is an emotion of defense when facing danger, playing a crucial role in survival as it involves biological processes for preparing responses to threats. However, when fear becomes disproportionate, it becomes detrimental to the individual and can trigger negative symptoms. Therefore, it is common for such symptoms to intensify during a pandemic, affecting both healthy individuals and those with pre-existing psychiatric disorders (Ornell et al., 2020).

In this regard, Alencar (2010) considers inhibition/shyness as a barrier to the expression of creativity, as it pertains to emotional issues such as the fear of expressing oneself, of contradicting others, and of executing and exposing one's ideas, feeling inferior, lacking self-belief, and undervaluing one's own conceptions. This barrier aligns with the characteristics of negative symptoms, which are understood as alterations in an individual's affective state, commonly characterized by a decrease in pleasure in activities, decreased confidence, increased feelings of worthlessness and incapacity to solve problems, and may lead to cognitive distortions with a negative view of oneself, others, and the world (Beck, 2022).

According to Hennessey and Amabile (2010) and Amabile and Pillemer (2012), creative production cannot solely be attributed to an individual's set of skills but is also influenced by elements of the context in which the individual is immersed. Therefore, the results found in this study, in which symptoms of depression and stress explained 9.8% of the barrier related to lack of time/opportunity, can be justified by Santos (2012), who stated that the Brazilian higher education context is characterized by social devaluation, pressure for productivity, fear of unemployment, and a high volume of demands. These factors contribute to a lack of time for studying, research, and lesson preparation. Considering a reality where there's scarcity of time and limited personal resources and opportunities to create, professors may struggle to meet the necessary rigor in their practice (Locatelli, 2017).

Studies with teachers reveal that working conditions, such as devaluation, lack of student motivation, and overload, are recognized as sources of their stress (De Araujo et al., 2020; Silva & Oliveira, 2019; Wagner et al., 2019). Stress, in turn, is understood as the persistent efforts of an individual to adapt to a situation or experience that generates feelings of fear or threat, resulting in impairments to their performance (Vignola & Tucci, 2014).

According to Hirschle and Gondim (2020), an individual's level stress is influenced by the individual's perception of environmental demands, or of the environments in which they operate, and his perceived ability to cope with them. Thus, for stress symptoms to be triggered, the person

must perceive the situation and demands as stressful and believe they have few resources to cope with them, time being one of these resources. Additionally, individuals with depressive symptoms may have low positive expectations for the future, feel hopeless, and lack self-belief (Beck et al., 2017; Dobson & Dobson, 2011). These factors can contribute to the individual encountering barriers in expressing themselves creatively (Alencar, 2010).

In a study conducted in Taiwan with healthcare teachers by Liu and Wang (2019), it was observed that teachers' creative teaching self-efficacy as well as their creative teaching skills act as mediating and moderating variables in the relationship between the creative classroom climate and creative teaching behaviors, respectively. Supporting this, some authors (Alencar et al., 2017; Alencar & Fleith, 2010) explain that when teachers receive support from the educational institution and there is student interest in learning, they can develop a creative climate, which also leads to well-being.

The results of the present study also indicated that symptoms of depression and stress predict social repression as a barrier to creativity by 11.8%. According to Amabile and Pillemer (2012), the social context can positively or negatively affect an individual's creative expression, providing the necessary support for generating new ideas, as well as providing the feedback of outcomes by others involved. As stated by Beck et al. (2017), psychological and social factors are consequences, not causes, of depressive symptoms. Thus, it is understood that how a person feels and their ability to regulate their emotions and feelings can influence whether they seek social support when they are unable to generate creative ideas.

For Alencar (2010), creativity is influenced by environmental factors and can be hindered by issues such as prevailing norms and established pressures, which can lead to a greater tendency to conform to situations, particularly in the work environment. According to Alencar and Fleith (2010), research conducted in various countries demonstrates that HEIs show a certain indifference toward the development of creativity, preferring conventional solutions to everyday problems. Therefore, it is understood that this failure to promote the development of creativity also represents a social barrier, as the institution, the resources of the space, and the materials provided do not stimulate the expression of creativity by teachers and students (Alencar et al., 2017).

In a study conducted by Souza et al. (2021), with teachers from various levels of education 7 to 8 months after the start of the pandemic, it was observed that although most teachers were against online classes, some of them acknowledged that this period of adaptation provided new learning experiences. Furthermore, just over half of the participants reported difficulties adapting in the early stages of the pandemic, feeling comfortable in front of cameras, and using technological tools to support the dynamics of their classes. However, at the time of the present research, they already felt comfortable and more confident in teaching in this new format.

The results of the present study showed that depressive symptoms account for 10.7% of the lack of motivation as a barrier to personal creativity expression. Miranda and Morais (2019) state that individuals are much more inclined to respond creatively to their tasks when they feel motivated by the pleasure of doing them. In individuals with mood disorders and depressive symptoms, there is a decrease in certain neurotransmitters such as serotonin, norepinephrine, and dopamine (Diniz et al., 2020), which are responsible for pleasure, well-being, and motivation (Alves, 2018). Therefore, in depressive episodes, it is common for the individual's motivation to be diminished (Grahek et al., 2019).

In a study conducted by Cruz et al. (2020) at the beginning of the pandemic with early childhood and adolescent education teachers, it was indicated that those who expressed concern about contracting the disease were more likely to experience symptoms of anxiety and depression.

The authors also mention that significant changes in mental health impact the functioning of daily tasks, both domestic and work-related, and are associated with demotivation, lack of concentration, anhedonia, as well as a lack of interest in interacting with others.

Motivation can be stimulated by the social environment and refers to the satisfaction and involvement of the individual in the task. High levels of intrinsic motivation can encourage individuals to take more risks and break away from habitual patterns of thinking, assisting in the development of new creative strategies (Hennessey & Amabile, 2010; Miranda & Morais, 2019). Extrinsic motivation, on the other hand, can make individuals feel controlled, especially when there is reward, competition, and evaluation of the creative process. However, it can also contribute to creativity when external factors provide information that helps the individual successfully complete the task (Amabile & Pillemer, 2012).

Final Considerations

The present study aimed to investigate the relationship between negative symptoms of depression, anxiety, and stress and barriers to the expression of personal creativity among higher education professors in Brazil. Furthermore, the objective was to analyze and discuss whether these negative symptoms significantly predict barriers to the expression of creativity of the participants. The findings of the present research demonstrated a positive correlation between these two constructs, as well as the fact that negative symptoms can explain why the investigated professors encounter barriers to expressing their personal creativity.

As previously mentioned, this research took place during the pandemic scenario, in which most professors were teaching remotely. Thus, their practices, activities, and class dynamics, as well as their work routines, had to be adapted to the new remote format, which likely created greater difficulty in dealing with the changes in the early stages of the pandemic, and consequently more negative symptoms in professors, as very little was known about the disease and the necessary precautions for prevention. However, as time passed from weeks to months, a better understanding of the virus and the resulting context was achieved through research. These changes in an individual's mental health can impact their daily functioning, be it household or work tasks, leading to demotivation, anhedonia, inattention, reduced interest in interacting with others, among others, which is believed to be related to barriers to the expression of personal creativity.

Therefore, it is considered relevant for HEIs to invest in providing professors with pleasant work environments, the necessary support, resources, and materials, so that their practice can be carried out in the best possible way, prioritizing quality in education and generating well-being, which, in turn, enables them to express their creative potential. It is also important for future studies to explore and understand the resources made available by institutions to facilitate teachers' adaptation in their practices, even considering the changes that may arise in a possible post-pandemic scenario. Furthermore, it is suggested to assess in future research whether negative symptoms among professors persist or decrease in a post-pandemic period. Additionally, it is pertinent to understand the role of institutions in the mental health of teachers, as well as in the prevention of negative symptoms or in assisting with the treatment of potential progression of these symptoms into mental disorders.

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Contributors

Conceptualization: V. PEDERIVA and I. ANDRETTA. Methodology: V. PEDERIVA. Data curation: V. PEDERIVA and I. ROSSA. Writing-original draft: V. PEDERIVA and I. ROSSA. Writing-review and editing: I. ROSSA and I. ANDRETTA.