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Languishing and flourishing: relationship between risk factors and protection for the well-being of university students

Florescer e languescer: estudo da relação entre fatores de risco e proteção ao bem-estar de universitários

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Abstract

Prevalence of emotional problems such as anxiety, depression and stress can affect up to 60% of college students. However, knowledge of those students' protective factors can contribute to a better understanding of this phenomenon. Thus, the present study sought to assess the relationship between risk and protective factors for the subjective well-being of university students. A total of 752 college students participated in the survey and answered the following tests: Anxiety, Depression and Stress Scale, Character Strengths Scale, Life Satisfaction Scale, and a sociodemographic questionnaire. The main outcomes point to the existence of positive correlations between character strengths and life satisfaction, and negative correlations between depression, anxiety and stress with the character strengths. It was concluded that positive psychology can help to improve the understanding of those symptoms and minimize their impact on university students.

Keywords: Health; Higher education; Protective factors; Psychology, positive; Risk factors; Well-Being.

Resumo

A prevalência de problemas emocionais, como ansiedade, depressão e estresse, pode chegar até a 60% em estudantes universitários. Contudo, os conhecimentos sobre os fatores de proteção em universitários podem contribuir para um melhor entendimento acerca desse fenômeno. Dessa forma, o presente estudo buscou verificar a relação entre os fatores de risco e proteção para o bem-estar de universitários. Participaram da pesquisa 752 universitários, que responderam os testes: Escala de Ansiedade, Depressão e Stress, Escala de forças de caráter, Escala de satisfação com a vida, e um questionário sociodemográfico. Os resultados apontam para a existência de correlações positivas entre as forças de caráter e satisfação com a vida, e correlações negativas entre depressão, ansiedade e estresse com as forças de caráter. Conclui-se que a psicologia positiva pode contribuir para melhor entender e minimizar os impactos desses sintomas.

Palavras-chave: Saúde; Ensino superior; Fatores de proteção; Psicologia positiva; Fatores de risco; Bem-estar.

Entering higher education is an experience that can involve not only the students' academic training, but also their entry into an environment of demands and responsibilities that mark the beginning of adulthood (Penha et al., 2020). Furthermore, university life requires, that the students demonstrate since admission complex cognitive and emotional resources that will help them adapt to this new environment demands. Considering the high expectations, the labor market demands, and the students' professional and personal future, it is common to find a high prevalence of psychoaffective issues among university students (Padovani et al., 2014).

In this connection, Positive Psychology is well-positioned to contribute towards understanding and reducing the consequences experienced by university students. Noronha et al. (2015) emphasize that character strengths can help people cope with adversity. Snyder and Lopez (2009) define this field as the scientific study of common human virtues, qualities, and potentialities, focusing on discovering good human functioning, positive capabilities, and other fields that can be improved to make life more pleasurable and productive.

Therefore, it is important to highlight that the risk factors of the students' well-being, such as anxiety, depression, and stress, are present in the college populations. It was reported that 83.5% of a population of 1,200,300 interviewees responded that they had some emotional difficulty that interfered with their academic life, and 63% reported symptoms of anxiety (Associação Nacional dos Dirigentes das Instituições Federais de Ensino Superior & Fórum Nacional de Pró-Reitores de Assuntos Comunitários e Estudantis, 2016). At the same time, other studies obtained results that, although less expressive, draw attention to the high prevalence of anxiety symptoms in the university population, affecting 13.54% of the students' (Padovani et al., 2014), 36% (Fernandes et al., 2018), 48.1% (Freitas et al., 2022), and 63% (Leão et al., 2018). In addition, recent research revealed symptoms of depression and stress in university students, with prevalence rates of 7.26% (Padovani et al., 2014), 19.2% (Freitas et al., 2022), 28% (Fernandes et al., 2018), 30% (Leão et al., 2018), 63% (Lima et al., 2019) up to 68% for depression, the latter being only in university students enrolled in the health disciplines (Galvão et al., 2023). Finally, with regard to the prevalence of stress, the rates varied between 28% (Zancan et al., 2021), 52.88% (Padovani et al., 2014) and 55.3% (Rank et al., 2020).

Furthermore, a study conducted to measure the effects of Coronavirus Disease 2019 (COVID-19) on college students' mental health, revealed an increase in symptoms of depression and stress during that pandemic period; a total of 7.4%, 30.8%, and 5.4% of the sample components reported having been diagnosed by a doctor with depression, anxiety and stress, respectively, before the pandemic. However, when reassessed using mental health questionnaires, the prevalence of those conditions increased to 12.3%, 28.5%, and 54.4% (Cotrim et al., 2021). Similarly, the World Health Organization (WHO, 2022) found that in just one year after the onset of the COVID-19 pandemic, there was 28% and 26% increase in the depression and anxiety prevalence rates, respectively.

The data are even more striking when compared with the prevalence rates in the general population, since, globally, 13% of people have some kind of mental disorder, with 3.8% diagnosed with depression and 4% with anxiety (WHO, 2022). In Brazil, these prevalence rates are estimated at 5.8% and 9.3% of the population respectively, involving a total 11.5 and 18.6 million people approximately; such rates are significantly higher than the global average (WHO, 2017). Actually, the prevalence of anxiety and depression among university students is five times higher for anxiety and eleven times higher than in the general population for depression.

Additionally, most of these studies reveal the prevalence of certain factors associated with the risk of developing depression and anxiety in young adults and college students, highlighting the importance of studies targeting that population, especially on account of such studies' outcome

be used to promote interventions capable of helping reduce or prevent such symptoms. At the same time, while recognizing the importance of studies on the risk factors for well-being, for health fostering purposes, it is important to understand the variables that influence the protective dimension; in the specific case of this study, those related to personality flourishing and human well-being.

Character strengths and human virtues are part of what is understood as flourishing (Fredrickson & Losada, 2005), that is, living within an ideal range of human functioning, accumulating strength, kindness, and resilience. This contrasts with the concept of languishing, which commonly involves psychopathologic conditions.

Specifically, among so many aspects of Positive Psychology studies, one of the most basic aspects is the construct referring to character strengths, approached by Peterson and Seligman (2004); the study classifies 24 character strengths distributed into 6 virtues, namely: (1) Wisdom and knowledge (cognitive strengths): creativity, curiosity, open-mindedness, love of learning, perspective; (2) Courage (emotional strengths): bravery, persistence, integrity, vitality; (3) Humanity (interpersonal strengths): love, kindness, social intelligence; (4) Justice (civic strengths): citizenship, impartiality, leadership; (5) Temperance (strengths that protect against excesses): forgiveness and mercy, humility and modesty, prudence, self-regulation; (6) Transcendence (spiritual strengths of meaning): appreciation of beauty and excellence, gratitude, hope, humor, spirituality.

In a study targeting university students, Noronha and Martins (2016) found significant gender differences, with women scoring higher on four character strengths (Authenticity, Kindness, Gratitude, and Perseverance). There was no variation in the participants' age. Furthermore, regarding the correlation between the constructs studied, the strengths of vitality, gratitude, hope, perseverance, and love were most closely related to life satisfaction, with moderate magnitudes ($r < 0.50$). Thus, people with those character strengths tend to be more satisfied with their lives.

Another recent study in this area was carried out to verify the relationship between character strengths and subjective well-being; it was reported that character strengths correlated with at least one dimension of subjective well-being, as well as all the character strengths correlated significantly with the positive affect construct, with its magnitude varying between weak and moderate ($r < 0.50$) yielding the understanding that the more individuals experience positive emotions, the greater their potential to develop their strengths (Oliveira et al., 2016).

Therefore, a preventive approach targeting the implementation of public policies aimed at developing living conditions that contribute to foster protective factors in relation to subjective well-being is welcomed. Similarly, encouraging the protective factors studied in this research, namely strengths and virtues, will allow for a favorable cost/benefit ratio for a greater number of people. The objective of this study was to determine how risk and protective factors correlate with stress, depression, and anxiety in university students.

Method

This study is an ex-post facto correlational study, carried out using a descriptive methodology and a non-probabilistic sample.

Participants

The sample consisted of 752 individuals over the age of 18, enrolled in higher education institutions. The average age was 23 years ($SD = 6.1$); most of the participants were female (68%),

single (90.6%), with incomplete higher education (85.6%), enrolled in public or private universities in Brazil and had not a paid job (55.2%).

Instruments

The Depression, Anxiety and Stress Scale (DASS) (Lovibond & Lovibond, 1995) is organized into three subscales: Depression (Cronbach's Alpha = 0.94), Anxiety (Cronbach's Alpha = 0.93) and Stress (Cronbach's Alpha = 0.93), each containing seven items, totaling 21 items with a total Cronbach's Alpha equal to 0.942 (Maia & Dias, 2020). The response scale is a 4-point Likert-type scale, ranging from 1 = "it does not apply to me at all" to 4 = "it applies to me most of the time". The version used in our investigation was the one translated into Portuguese and validated by Maia and Dias (2020).

The Character Strengths Scale (CCS) was developed based on the Values in Action (VIA) proposed by Peterson and Seligman (2004), whose theoretical model expresses 24 character strengths, organized into 6 virtues, and for each strength there are 3 constructed items. Noronha et al. (2015) verified the scale factorial structure, testing various factor extraction methods in a sample of 426 university students from São Paulo and Minas Gerais states who attended public and private universities. The structure found was unifactorial (Cronbach's alpha = 0.93), contrary to what was expected in the original structure of 6 virtues. The final version proposed by Noronha et al. (2015) and used in this investigation, consists of 71 items answered from 0 to 5 points on a Likert-type scale (with 0 = "Nothing to do with me" and 5 = "Everything to do with me"), expresses 23 strengths, each with three items, and one strength with two items.

The Life Satisfaction Scale, an instrument created by Diener et al. (1985), whose data validity and accuracy were verified by Zanon et al. (2013) consists of five items (Cronbach's alpha 0.87), answered on a seven-point Likert-type scale, ranging from 1 = "Strongly disagree" to 7 = "Strongly agree".

The last section of the instrument, called "Sample Characterization," consists of questions on gender, age, university degree, income, religion, etc.

Procedures

Data were collected between March and August 2020. Due to the COVID-19 pandemic and the necessary social distancing, responses were collected exclusively by digital means, asking the investigators' acquaintances to respond to the questionnaire and share it on their own social media; in addition the investigators were required to share the responses on the investigators' social media and on the *Núcleo de Avaliação Psicológica em Saúde* (NAPSIS-UFC, Center for Psychological Assessment in Health) as well as sharing the questionnaire responses with students enrolled in various programs at the Universidade Federal do Ceará (UFC, Federal University of Ceará) through the academic center directors; and to share it on profiles at other federal universities in the country. Hence, the sample was non-probabilistic.

The initial analyses were performed using the IBM®SPSS® 21 (PASW) software, which allowed the calculation of descriptive statistics (mean, standard deviation, frequency, and percentage) and Pearson's *r* correlation indexes between the factors of the scales of this investigation. In order to measure the magnitude of the correlations, it was considered that for *r* values between 0.10 and 0.29 the strength was weak, for values between 0.30 and 0.49 the strength was moderate, and for values between 0.50 and 1, the strength was considered strong, as established by Cohen (2013).

To review the prevalence of anxiety, depression, and stress symptoms, we chose to transform the total score for each construct using a standard linear score (Z-score). Thus, the subjects' scores were represented by deviations (positive and negative) from the mean, allowing the scores to be divided into groups named by the degree of impairment: 1 and 2 deviations below the mean are considered, respectively, as negative median and low, while 1, 2, and 3 deviations above the mean are considered positive, median, high, and very high respectively,

Results

The outcome of the Depression, Anxiety and Stress Scale (DASS-21) application indicated that, among the university students who completed the survey, 48.7% had higher scores for depression (Table 1), with 150 students (20.3%) scoring two deviations above the mean and 210 (28.4%) one deviation above the mean, conditions that can be considered severe and moderate, respectively.

In the case of Anxiety, out of the 742 university students in the sample, 43.2% showed either moderate or high and very high anxiety levels (Table 1): a total of 34 students (4.6%) had three deviations above the mean, (classified as very high), 111 (15%) had two deviations above the mean (classified as high), and 175 (23.6%) one deviation above the mean (classified as moderate).

Regarding stress, the results indicated that 362 participants (48.7%) presented moderate to high stress levels, with 203 participants (27.3%) experiencing moderate stress and 159 (21.4%) high stress.

Table 1

Prevalence of depression, anxiety and stress symptoms in college students (DASS-21)

Informar um título Fatores	M	SD	Low		Negative Median		Positive Median		High		Very High		Total
			n	%	n	%	n	%	n	%	n	%	
Depression	8.70	5.50	166	22.4	214	28.9	210	28.4	150	20.3	0	0	740
Anxiety	6.06	5.01	157	21.2	265	35.7	175	23.6	111	15.0	34	4.6	742
Stress	9.03	8.35	131	17.6	251	33.7	203	27.3	159	21.4	0	0	744

Regarding the relationship between character strengths and life satisfaction, positive and statistically significant correlations were observed in most cases. As can be seen in Table 2, the most significant correlations involve life satisfaction and the strengths perseverance, vitality, love, leadership, gratitude, humor, hope, and spirituality and ranged from 0.36 to 0.57.

As expected, with the constructs of anxiety, depression, and stress, character strengths were negatively correlated, especially when they involved depression. Indeed, with the exception of kindness, modesty, and prudence, all dimensions showed negative and significant correlations with depression (Table 2). It is noteworthy the finding of correlations with the strengths vitality, perseverance, love, gratitude, humor, hope, and spirituality, whose correlation magnitudes ranged from -0.32 to -0.57.

The correlation between Anxiety and character strengths was statistically significant and negative for 14 out of the 24 character strengths, except for the relationships with creativity, good judgment, bravery, authenticity, kindness, social intelligence, citizenship, impartiality, modesty, and

prudence, which did not show a significantly valid correlation. Furthermore, the correlations with vitality and hope showed statistically significant, negative, and moderate relationships with anxiety, with r ranging from -0.30 to -0.36, as shown in Table 2.

Finally, in the case of the stress variable, the correlations were negative and significant, except for the strengths creativity, wisdom, bravery, authenticity, kindness, modesty, and prudence, which did not show significantly valid relationships. Furthermore, the correlations with the strengths vitality, self-regulation, and hope were negative and statistically significant, with r ranging from -0.30 to -0.37, as shown in Table 2.

Table 2

Relationship between DASS-21 and Life Satisfaction with Character Strengths (Pearson correlation)

Category	<i>M</i>	<i>SD</i>	Depression (<i>r</i>)	Anxiety	Stress	Life Satisfaction
Creativity	5.00	1.88	-0.18**	-0.07	-0.06	0.19*
Curiosity	6.68	1.96	-0.19**	-0.11**	-0.08*	0.24**
Critical Thinking	6.81	1.83	-0.12**	-0.07*	-0.09*	0.15*
Love of Learning	6.09	2.16	-0.23**	-0.11**	-0.10**	0.22**
Wisdom	5.56	1.93	-0.14**	-0.01	-0.06	0.24**
Bravery	5.33	2.13	-0.11**	-0.13	-0.02	0.16**
Perseverance	5.73	2.26	-0.32**	-0.13**	-0.11**	0.36**
Authenticity	6.25	1.79	-0.12**	0.01	-0.01	0.20**
Vitality	4.56	2.47	-0.57**	-0.36**	-0.37**	0.52**
Love	5.92	2.03	-0.40**	-0.21**	-0.25**	0.48**
Kindness	7.42	1.60	-0.05	-0.05	-0.04	0.22*
Social Intelligence	5.46	1.95	-0.19**	-0.05	-0.10**	0.29*
Citizenship	6.46	1.73	-0.20**	-0.07	-0.11**	0.26**
Impartiality	6.92	1.64	-0.16**	-0.07	-0.10**	0.24**
Leadership	5.15	2.28	-0.29**	-0.11**	-0.13**	0.36**
Forgiveness	4.49	2.44	-0.22*	-0.16**	-0.19**	0.28**
Modesty	6.57	1.60	-0.05	0.02	-0.05	-0.10*
Prudence	6.88	1.77	-0.05	-0.03	-0.04	0.12**
Self-regulation	5.04	2.15	-0.28**	-0.22**	-0.30**	0.24**
Appreciation of Beauty	4.49	1.23	-0.21**	-0.09**	-0.14**	0.27**
Gratitude	6.70	2.10	-0.43**	-0.23**	-0.26**	0.57**
Humor	5.63	2.19	-0.35**	-0.16**	-0.23**	0.40**
Hope	3.21	1.58	-0.53**	-0.30**	-0.30**	0.48**
Spirituality	5.11	2.95	-0.39**	-0.14**	-0.17**	0.39**

Note: * $p < 0.05$, ** $p < 0.01$.

Discussion

Based on the data presented, we can point out that the average number of the university students in the sample with mean scores for depression, anxiety, and stress, was, in general, higher than the average number of students with high scores. However, it is important to note that the sum of high and very high scores for depression (20.3%), anxiety (19.6%), and stress (21.4%) is considerably high, especially given that this is a non-clinical sample within the pandemic context which is the time during which this study was conducted.

These values are similar to those of recent studies that indicate a depression prevalence of approximately 20% to 30% (Fernandes et al., 2018; Freitas et al., 2022; Leão et al., 2018). This highlights the importance of a closer look at this population, since the prevalence of depression is

three times higher than that found in the general public. It is important to mention that such disorder prevalence also approaches the prevalence reported by Brito et al. (2020) with adolescent students indicating high depression rates in this age group even before entering university. However, it is not possible to state that these symptoms are only the result of the life records, since the transition from the school to the academic setting may also have its influence.

Regarding the outcome on the prevalence of anxiety and stress symptoms, the findings are in line with those of the studies by Cotrim et al. (2021) for anxiety and by Zancan et al. (2021) for stress; in fact these studies yielded prevalence rates close to 20% for the respective constructs, in contrast to other studies that showed values above 30% for anxiety (Fernandes et al., 2018; Freitas et al., 2022; Leão et al., 2018) and stress (Cotrim et al., 2021; Padovani et al., 2014; Zancan et al., 2021).

The results also pointed to the existence of a significant relationship between character strengths and subjective well-being, as these constructs showed some degree of direct relationship with life satisfaction. Thus, it is understood that the character strengths present in an individual can contribute to greater life satisfaction, which is in agreement with previous studies that pointed to the same outcome (Noronha & Martins, 2016; Oliveira et al., 2016), since character strengths are basic constructs of Positive Psychology, which aims at the well-being of the individual (Oliveira et al., 2016).

In comparison with the study carried out by Noronha and Martins (2016), we could identify some similarities with the results found in our study, since among the forces that presented the greatest correlation with life satisfaction, the forces Vitality, Gratitude, Hope, Perseverance, Love, Social Intelligence and Curiosity are among them, and have values similar to those found in the study mentioned.

Regarding the Vitality strength, it presented a significant and strong correlation, with $r = 0.52$ which was the second highest correlation among the 24 strengths, coming only after gratitude, with $r = 0.57$. In the study by Oliveira et al. (2016), vitality had an $r = 0.42$, being the highest correlation among all 24 strengths. Silva and Roazzi (2023), in a simultaneous study with university professors, obtained similar associations between Mental Health and Life Satisfaction with Vitality. These results demonstrate the importance of vitality, which is characterized as a way of approaching life with enthusiasm and energy, for life satisfaction (Park et al., 2006). For Noronha and Batista (2020), alongside the self-regulation strength, vitality would be the strength that contributes most to reducing emotional difficulties. Thus, people who are more willing to carry out activities with enthusiasm and determination, as well as being more grateful for what happens to them, are more likely to be satisfied with their lives.

In comparison with the study by Noronha and Martins (2016), it was also possible to identify other similarities, such as a correlation between the strength of Love and Satisfaction with life, where a direct and moderate correlation was found, which is in line with the findings of Oliveira et al. (2016). In this connection, the findings corroborate the literature data by pointing out the existence of a direct correlation between Love and Satisfaction with life, and, consequently, suggesting that the more we value a close and intimate relationship, the higher the levels of satisfaction with life will be.

Similarities were also identified regarding the correlation between life satisfaction and social intelligence; despite presenting values below the correlations mentioned above, which means a weak correlation, the outcome enhances the findings of Noronha and Martins (2016) and Moutinho et al. (2019). This suggests that the more people are aware of their own feelings and desires, as well as the feelings of those around them, knowing how to adapt to different social situations, the better their satisfaction with life will be.

However, despite finding several similarities with previous studies, some results were divergent, especially the correlations with love of learning, which showed a lower magnitude than that found by Oliveira et al. (2016), while the correlations with Perseverance, Vitality, and Gratitude showed higher magnitudes than those found in the aforementioned study. This may be due to the COVID-19 pandemic period in which the current study was conducted, an atypical time loaded with a high level of stress and anxiety that may have led to the enhancement of some strength to the detriment of others.

The results also point to a negative association between character strengths and risk factors for subjective well-being, as most of the correlations between strengths and the DASS-21 scale factors showed significant negative correlations with at least one of the factors assessed. The results involving Depression are particularly noteworthy, as they presented significant negative correlations with almost all strengths, demonstrating greater influence of character strengths on Depression than on Anxiety and Stress. This may indicate that character strengths contribute to reducing risk factors for subjective well-being; however, further studies are needed to confirm this conclusion.

Among such correlations, the Vitality strength correlated most strongly with the DASS-21 responses, especially with depression, where it presented $r = -0.57$, a significant and strong correlation. In this connection, vitality was the strength that correlated most strongly with DASS-21 and was also the strength that correlated most with the Life Satisfaction variable, thus demonstrating that Vitality plays a significant role in shaping the subjective well-being of Brazilian university students. This outcome also corroborates the findings of Cordeiro et al. (2021), in which vitality is negatively related to symptoms of anxiety and depression in cancer patients and their families. It also corroborates with the findings of Lima et al. (2020), in which vitality in patients with chronic lung disease is negatively related to symptoms of depression, albeit without a significant correlation with anxiety symptoms.

Furthermore, the negative association found between spirituality and depressive symptoms is enhanced by the study by Menegaldi-Silva et al. (2022), in university students during the pandemic who reported that students who practiced religion had lower depression scores. This finding points to religion as a protective factor for depressive symptoms.

The strengths of gratitude, humor, hope, and spirituality, on the other hand, presented results that, in relation to depression, obtained statistically significant and negative values, with magnitudes classified as large for hope, and moderate for the others, in line with the depressive symptoms described by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association, 2014).

The force that presented the highest value in this relationship was hope, with $r = -0.53$. This relationship is also observed and expected according to the DSM-V (2014), which characterizes depressed individuals as experiencing feelings of emptiness and hopelessness. Regarding the study of these two variables, a moderate number of studies have been carried out in Brazil, such as that by Cohen et al. (2019), conducted with young university students that identified significant and negative correlations between cognitive hope and depression, and the study by Patrício et al. (2019), which aimed to investigate the relationship between hope and depression in patients with HIV.

Finally, it was also observed that Love was a strength that presented significant results in correlations with Depression, Anxiety, and Stress, with a negative, significant, and moderate relationship for depression, and a weak relationship for stress and anxiety. Thus, it is possible to infer that the Love strength can act as a protective factor for well-being, which is consistent with what is suggested by Diener and Seligman (2002) when they state that individuals with good social

relationships tend to be happier. This can be explained by the fact that good social relationships can contribute to minimizing symptoms of depression, anxiety, and stress, since those relationships can function as social support for students, helping them resolve the demands and problems arising from the university life. This view is corroborated by Barroso et al. (2019), who found a direct relationship between loneliness, low social support, and an increased risk of developing depressive disorder. These results also resemble the findings of Menegaldi-Silva et al. (2022), who identified associations between being married and a lower prevalence of depression, and the findings of Souza et al. (2021), who identified leisure time with family/friends and maintaining healthy relationships as protective factors for symptoms of depression and anxiety.

Furthermore, the results of the assessments highlighted the strength of self-regulation, which showed significant negative correlations with anxiety, depression, and stress. This is consistent with the findings of Borges and Pacheco (2018), who, in a study with children and adolescents, found significant correlations between self-regulation and depressive symptoms, indicating that the greater the difficulties in dealing with emotional issues, the greater the expression of depressive symptoms. Finally, Noronha and Batista (2020) complemented this evidence by reporting, in a study with university students, a positive correlation between self-regulation and coping strategies, and negative correlations between self-regulation and externalization of aggression, pessimism, and paralysis, indicating that emotional self-regulation can contribute to coping with adversity and reducing psychiatric difficulties and maladaptive behaviors.

Conclusion

The objective of this article was to review the correlations between risk and protective factors for the well-being of university students. The results indicated weak to moderate relationships between character strengths and subjective well-being, which enhances the findings reported in the literature. Furthermore, the relationship between character strengths and risk factors for well-being was also highlighted, with particular emphasis on depression, as this factor's relationship yielded the most significant results.

In addition, the prevalence rates of anxiety, depression and stress symptoms among college students highlight the importance of a closer look at this population since, in this case, the prevalence of depression was three times higher than that found in the general public. Therefore, in this framework, we can observe that even in a non-clinical sample, university students' emotions, such as depressed mood, were significant in the pandemic context. These results can feed information for the discussions about the elements involved in their realities regarding the risk of developing depression. Thus, viable alternatives for health promotion and disorders prevention in this population can be sought. Furthermore, it is essential to consider the influence that the pandemic may have had on those outcomes.

The results, therefore, indicate a positive trend in the prevalence of character strengths, but show that there is still room for further development of such strengths through Positive Psychology interventions, which can be studied later as a resource for fostering well-being in this population.

There is a scarcity of literature on the relationship between Character Strengths and anxiety, depression, and stress in the Brazilian framework. Therefore, this study aims to contribute to the production of knowledge on that topic, serving as an exploratory study. Furthermore, by identifying the existence of a relationship between risk and protective factors for life satisfaction, it

is understood that there is a field of action and intervention that can help reduce risk factors for the individual's well-being, not by focusing directly on the issues, but on the individual's potential. Given the different correlations between the constructs of this investigation, the need for studies that point to potential interventions based on Positive Psychology become evident. Other possibilities include conducting further experimental and quasi-experimental studies.

It is important to emphasize that our study has limitations, such as the fact that the instrument used was not intended to provide a diagnosis, thus making it difficult to clearly define the subtypes of psychopathological difficulties that may be present in our sample. Furthermore, issues and variables related to gender and other Brazilian sociocultural variables can be further explored as part of a more comprehensive theoretical model.

References

- American Psychiatric Association. (2014). *DSM-V: Manual de Diagnóstico e Estatística dos Transtornos Mentais*. 5th ed. Artmed.
- Associação Nacional dos Dirigentes das Instituições Federais de Ensino Superior, & Fórum Nacional de Pró-Reitores de Assuntos Comunitários e Estudantis (FONAPRACE). (2016, 8 julho). *IV Pesquisa do perfil socioeconômico e cultural dos estudantes de graduação das instituições federais de ensino superior brasileiras: 2014*. <https://www.andifes.org.br/?p=88771>
- Barroso, S. M., Oliveira, N. R. D., & Andrade, V. S. D. (2019). Solidão e depressão: relações com características pessoais e hábitos de vida em universitários. *Psicologia: Teoria e Pesquisa*, 35. <https://doi.org/10.1590/0102.3772e35427>
- Borges, L., & Pacheco, J. T. B. (2018). Sintomas depressivos, autorregulação emocional e suporte familiar: um estudo com crianças e adolescentes. *Estudos Interdisciplinares em Psicologia*, 9(3), 132-148.
- Brito, M. F. S. F., Lima, C. D. A., Messias, R. B., Brito, A. B., Pinho, L. D., & Silveira, M. F. (2020). Prevalência de sintomas depressivos entre adolescentes escolares em município do Norte de Minas Gerais, Brasil. *Revista Portuguesa de Enfermagem e Saúde Mental*, 24, 17-24. <https://doi.org/10.19131/rpesm.0277>
- Cohen, E. B., Costa, A. R. L., & Ambiel, R. A. (2019). Relação entre sintomas depressivos e esperança cognitiva em universitários. *Revista de Psicologia da IMED*, 11(2), 3-14. <http://dx.doi.org/10.18256/2175-5027.2019.v11i2.2678>
- Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*. Academic Press. <https://doi.org/10.4324/9780203771587>
- Cordeiro, L. M., Santos, D. G. M., & Souza Orlandi, F. (2021). Qualidade de vida, ansiedade e depressão em pacientes oncológicos em quimioterapia e familiares. *Enfermagem em Foco*, 12(3). <https://doi.org/10.21675/2357-707X.2021.v12.n3.3801>
- Cotrim, L. V. P., Moura, I. G. S., Rêgo, E. F., & David, I. R. (2021). Prevalência de transtornos mentais comuns e qualidade de vida de universitários durante a pandemia COVID-19 Prevalence of common mental disorders and quality of life of university students during the Covid-19 pandemic. *Brazilian Journal of Health Review*, 4(6), 28231-28246. <https://doi.org/10.34119/bjhrv4n6-373>
- Diener, E., & Seligman, M. E. (2002). Very happy people. *Psychological Science*, 13(1), 81-84. <https://doi.org/10.1111%2F1467-9280.00415>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75. https://doi.org/10.1207/s15327752jpa4901_13
- Fernandes, M. A., Vieira, F. E. R., Silva, J. S., Avelino, F. V. S. D., & Santos, J. D. M. (2018). Prevalência de sintomas ansiosos e depressivos em universitários de uma instituição pública. *Revista Brasileira de Enfermagem*, 71, 2169-2175. <https://doi.org/10.1590/0034-7167-2017-0752>
- Fredrickson, B. L., & Losada, M. F. (2005). Positive affect and the complex dynamics of human flourishing. *American Psychologist*, 60(7), 678.

- Freitas, R. F., Aguiar, H. T. V., Pereira, É. J., Gonçalves, I. C. M., de Souza, G. R., & do Carmo Lessa, A. (2022). Sintomas de depressão e fatores associados em universitários da área da saúde. *Research, Society and Development*, 11(6), e34211629231-e34211629231. <https://doi.org/10.33448/rsd-v11i6.29231>
- Galvão, A. P. F. C., Pinto, T. F., & Uchida, R. R. (2023). Depressão em estudantes universitários: fatores predisponentes na área da saúde. *JMPHC Journal of Management & Primary Health Care* 15, e007-e007. <https://doi.org/10.14295/jmphc.v15.1292>
- Leão, A. M., Gomes, I. P., Ferreira, M. J. M., & Cavalcanti, L. P. G. (2018). Prevalência e fatores associados à depressão e ansiedade entre estudantes universitários da área de saúde em um grande centro urbano do Nordeste do Brasil. *Revista Brasileira de Educação Médica*, 42(4), 55-65. <https://doi.org/10.1590/1981-52712015v42n4RB20180092>
- Lima, C. D. A. D., Oliveira, R. C. D., Oliveira, S. A. G. D., Silva, M. A. S. D., Lima, A. D. A., Andrade, M. S., & Pinho, C. M. (2020). Qualidade de vida, ansiedade e depressão em pacientes com doença pulmonar obstrutiva crônica. *Revista Brasileira de Enfermagem*, 73, e20190423. <https://doi.org/10.1590/0034-7167-2019-0423>
- Lima, S. O., Lima, A. M. S., Barros, E. S., Varjão, R. L., Santos, V. F., Varjão, L. L., Mendonça, A. K. R. H., Nogueira, M. S., Deda, A. V., Jesus, L. K. A., & Santana, V. R. D. (2019). Prevalência da depressão nos acadêmicos da área de saúde. *Psicologia: Ciência e Profissão*, 39, e187530. <https://doi.org/10.1590/1982-3703003187530>
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33(3), 335-343. [https://doi.org/10.1016/0005-7967\(94\)00075-U](https://doi.org/10.1016/0005-7967(94)00075-U)
- Maia, B. R., & Dias, P. C. (2020). Ansiedade, depressão e estresse em estudantes universitários: o impacto da COVID-19. *Estudos de Psicologia* (Campinas), 37, 1-8. <https://doi.org/10.1590/1982-0275202037e200067>
- Menegaldi-Silva, C., Hirdes, A., Yamaguchi, M. U., & Grossi-Milani, R. (2022). Saúde mental e recursos de enfrentamento em estudantes universitários brasileiros em tempos de pandemia. *Avaliação: Revista da Avaliação da Educação Superior* (Campinas), 27, 632-650. <https://doi.org/10.1590/S1414-40772022000300013>
- Moutinho, H., Monteiro, A., Costa, A., & Faria, L. (2019). Papel da inteligência emocional, felicidade e flow no desempenho acadêmico e bem-estar subjetivo em contexto universitário. *Revista Iberoamericana de Diagnóstico y Evaluación-e Avaliação Psicológica*, 3(52), 99-114. <https://doi.org/10.21865/RIDEP52.3.08>
- Noronha, A. P. P., & Batista, H. H. V. (2020). Relações entre forças de caráter e autorregulação emocional em universitários brasileiros. *Revista Colombiana de Psicologia*, 29(1), 73-86. <https://doi.org/10.15446/v29n1.72960>
- Noronha, A. P. P., & Martins, D. F. (2016). Associações entre forças de caráter e satisfação com a vida: Estudo com universitários. *Acta colombiana de Psicologia*, 19(2), 97-103. <https://doi.org/10.14718/ACP.2016.19.2.5>
- Noronha, A. P. P., Dellazzana-Zanon, L. L., & Zanon, C. (2015). Internal Structure of the Characters Strengths Scale in Brazil. *Psico-USF*, 20(2), 229-235. <https://doi.org/10.1590/1413-82712015200204>
- Oliveira, C., Nunes, M. F. O., Legal, E. J., & Noronha, A. P. P. (2016). Bem-estar subjetivo: estudo de correlação com as forças de caráter. *Avaliação Psicológica*, 15(2), 177-185. <https://doi.org/10.15689/ap.2016.1502.06>
- Padovani, R. D. C., Neufeld, C. B., Maltoni, J., Barbosa, L. N. F., Souza, W. F. D., Cavalcanti, H. A. F., & Lameu, J. D. N. (2014). Vulnerabilidade e bem-estar psicológicos do estudante universitário. *Revista Brasileira de Terapias Cognitivas*, 10(1), 02-10. <http://dx.doi.org/10.5935/1808-5687.20140002>
- Park, N., Peterson, C., & Seligman, M. E. (2006). Character strengths in fifty-four nations and the fifty US states. *The Journal of Positive Psychology*, 1(3), 118-129. <https://doi.org/10.1080/17439760600619567>
- Patrício, A. C. F. D. A., Silva, I. B. D. N., Ferreira, M. A. M., Rodrigues, B. F. L., Silva, R. F. D., Nascimento, J. A. D., & Silva, R. A. R. D. (2019). Depressão, autoestima, expectativa futura e esperança de vida de pessoas com HIV. *Revista Brasileira de Enfermagem*, 72(5), 1288-1294. <https://doi.org/10.1590/0034-7167-2018-0730>
- Penha, J. R. L., Oliveira, C. C., & Mendes, A. V. S. (2020). Saúde mental do estudante universitário: revisão integrativa. *Journal Health NPEPS*, 5(1), 369-395.

- Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. Oxford University Press.
- Rank, V., Remor, K. V. T., Sakae, T. M., Galato, D., Feldens, V. P., & Trevisol, D. J. (2020). Prevalência de estresse e associação com automedicação e sedentarismo em universitários da área da saúde. *Relatos de Casos*, 64(1), 49-55.
- Silva, M. D. S., & Roazzi, A. (2023). Bem-estar subjetivo e saúde mental de professores universitários em seu local de trabalho. *Perspectivas Contemporâneas*, 18. <https://doi.org/10.54372/pc.2023.v18.3477>
- Snyder, C. R., & Lopez, S. J. (2009). *Psicologia Positiva: uma abordagem científica e prática das qualidades humanas*. Artmed.
- Souza, C. A. M., Silva, A. P., Soares, M. C. P. M., & Buriola, A. A. (2021). Análise de fatores protetores e de risco para o desenvolvimento de transtorno mental comum em escolares do ensino médio. *Colloquium Vitae*, 13(1), 43-51.
- World Health Organization. (2017). *Depression and Other Common Mental Disorders – Global Health Estimates*. WHO.
- World Health Organization. (2022). *World mental health report: transforming mental health for all*.
- Zancan, R. K., Machado, A. B. C., Boff, N., & Silva Oliveira, M. (2021). Estresse, Ansiedade, Depressão e Inflexibilidade Psicológica em Estudantes Universitários de Graduação e Pós-Graduação. *Estudos e Pesquisas em Psicologia*, 21(2), 749-767. <https://doi.org/10.12957/epp.2021.61067>
- Zanon, C., Bardagi, M., Layous, K., & Hutz, C. S. (2013). Validation of the satisfaction with life scale to Brazilians: Evidences of measurement no invariance across Brazil and US. *Social Indicators Research*, 114(2), 1-11. <https://doi.org/10.1007/s11205-013-0478-5>

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