

Emotion Regulation, Subjective Happiness and Meaning of Life of University Students in the Pandemic

Natália Helem de Almeida Cunha¹ 

Camila Barreto Bonfim¹ 

Cassio Santos-Lima² 

Gustavo Marcelino Siquara^{2,3} 

Abstract: Emotion regulation in adverse situations may be essential to aspects related to subjective happiness and the meaning of life. The aim was to investigate associations between emotion regulation strategies and levels of subjective happiness and meaning of life university students in the context of the COVID-19 pandemic. 348 university students participated in the study, being applied a sociodemographic questionnaire, Emotion Regulation Questionnaire (ERQ), Subjective Happiness Scale (SHS) and Meaning of Life Questionnaire (MLQ) through an online platform. Descriptive and inferential analyses were performed using the JASP software. The results indicated positive associations between the cognitive reassessment strategy and the presence of subjective happiness and meaning of life, while the strategy of emotional suppression negatively interfered. Cognitive change was an emotion regulation strategy that proved effective, both in the reassessment of the situation and in the ability to manage the demands arising from the pandemic.

Keywords: pandemic, emotional regulation, college students

Regulação Emocional, Felicidade Subjetiva e Sentido da Vida de Universitários na Pandemia

Resumo: A regulação emocional em situações adversas pode ser essencial aos aspectos relacionados à felicidade subjetiva e ao sentido da vida. O objetivo deste estudo foi investigar associações entre as estratégias de regulação emocional e os níveis de felicidade subjetiva e de sentido da vida de universitários no contexto da pandemia da COVID-19. Participaram 348 universitários, sendo aplicados questionário sociodemográfico, Questionário de Regulação Emocional (QRE), Escala de Felicidade Subjetiva (SHS) e Questionário de Sentido da Vida (QSV) por meio de plataforma *online*. Foram realizadas análises descritivas e inferenciais através do *software JASP*. Os resultados indicaram associações positivas entre a estratégia de reavaliação cognitiva e a presença de felicidade subjetiva e de sentido da vida, enquanto a estratégia de supressão emocional interferiu negativamente. A mudança cognitiva foi uma estratégia de regulação emocional que se mostrou efetiva, tanto na reavaliação da situação, quanto na capacidade de gerenciar as demandas provenientes da pandemia.

Palavras-chave: pandemia, regulação emocional, estudantes universitários

Regulación Emocional, Felicidad Subjetiva y Sentido de la Vida de los universitarios en la Pandemia

Resumen: La regulación emocional en situaciones adversas puede ser esencial para aspectos relacionados con la felicidad subjetiva y el sentido de la vida. El objetivo fue investigar las asociaciones entre las estrategias de regulación emocional y los niveles de felicidad subjetiva y significado de la vida entre universitarios en la pandemia COVID-19. 348 universitarios participaron del estudio, aplicándose un cuestionario sociodemográfico, Cuestionario de Regulación Emocional (QRE), Escala de Felicidad Subjetiva (SHS) y Cuestionario de Sentido de Vida (QSV) a través de una plataforma *online*. Los resultados indicaron asociaciones positivas entre la estrategia de reevaluación cognitiva y la presencia de felicidad subjetiva y el significado de la vida, mientras que la estrategia de supresión emocional interferido negativamente. El cambio cognitivo fue una estrategia de regulación emocional que resultó efectiva, tanto en la reevaluación de la situación como en la capacidad de gestionar las demandas derivadas de la pandemia.

Palabras clave: pandemia, regulación emocional, estudiantes universitarios

¹Universidade do Estado da Bahia, Salvador-BA, Brazil

²Escola Bahiana de Medicina e Saúde Pública, Salvador-BA, Brazil

³Universidade Estadual de Feira de Santana, Feira de Santana-BA, Brazil

Correspondence address: Gustavo Marcelino Siquara. Escola Bahiana de Medicina e Saúde Pública. Avenida Dom João VI, 275, Brotas, Salvador-BA, Brazil. CEP 40.290-000. E-mail: gustavosiquara@hotmail.com

The academic period is marked by discoveries and challenges that need to be overcome daily by students at the university. Acquiring new knowledge and developing critical thinking in relation to the environment can be rewarding, challenging, or even cause illness. The ways university students face the obstacles of academic life and the very

exposure to new situations present a potential stressor that can serve as a trigger for the development of mental health problems (Bezerra, Siquara, & Abreu, 2018). The university context intrinsically already brings a number of challenges, which, when coupled with a pandemic moment, can further increase mental and emotional health risks.

In the educational context, the ability to regulate one's own emotions can help students improve their performance, both academic and personal. Educational environments are conducive to the emergence of various emotions, and then called academic or performance-related emotions - factors in vulnerability in the pandemic period. Self-regulation and flexibility to deal with challenging demands are essential to learning, and are defined as the student's ability to control factors or conditions that affect performance, which involves metacognitive, affective, motivational, and behavioral processes directed to the acquisition of new knowledge and skills (Pellisson & Boruchovitch, 2022).

The pandemic of COVID-19 was characterized by a severe crisis that affected the entire world population in different ways. Its rapid advance and sudden changes not only brought impacts on the functioning of world and state agencies, healthcare systems, and the economy, but also impacted the education, well-being, and habits of every person (Schudy et al., 2020). University students were one of thousands of groups around the world who were forced, in a very short period of time, to change their relationship with university.

Among the most stressful situations related to the pandemic of COVID-19 is the unpredictability and uncertainty of when full control of the disease will occur and the severity of the risk. Social distancing, in-person suspension of classes at universities, and adapting to remote classes are examples of contagion mitigation measures that were necessary. It is considered that public health emergencies, such as a pandemic, can trigger symptoms of anxiety, fear, and concern, among others (Bao, Sun, Meng, Shi, & Lu, 2020).

Although harmful to social life, the adverse situations related to the pandemic of COVID-19 can provide the possibility for the individual to learn from their efforts to become psychologically stronger and grow as a human being (Zanon, Dellazzana-Zanon, Wechsler, Fabretti, & Rocha, 2020). The capacity for emotional regulation, in this sense, can be highlighted as an important factor in maintaining well-being in the face of adversity and flexibility to deal with psychological impacts (Restubog, Ocampo, & Wang, 2020).

In Gross's (2015) sequential model, five essential elements are pointed out in the regulatory process of emotions. The first refers to the selection of the situation that involves taking actions; the second is the direct modification of the situation in order to change the emotional impact caused by a specific event; the third, the deployment of attention, which in turn consists of distraction; the fourth element refers to the cognitive change that evaluates the situation and changes its emotional meaning and, finally, the response modulation that occurs when emotions are managed, after the response tendencies are initiated, having a direct influence on the experiential, behavioral, and physiological components of the emotional response (Gross, 2015), as in the case

of those who use more the cognitive reappraisal strategy, facing a context that requires more flexible responses.

Thus, related to flexibility, two major emotion regulation strategies that have been particularly studied are cognitive reappraisal and emotion suppression (Gross & John, 1998), and will be investigated in this study, given the accumulating evidence in the literature of their effects. In particular, cognitive reappraisal is defined as the attempt to reinterpret an emotion eliciting situation in a way that alters its meaning and changes its emotional impact. Emotion suppression is defined as the attempt to hide, inhibit, or reduce ongoing emotion-expressing behavior (Gross & John, 2003). In the recent study by Schudy et al. (2020), the ability to regulate emotional intensity by cognitive reappraisal obtained a positive result, having a significant effect on people's perception in the face of the pandemic and in dynamic environments. Thus, the tendency to use this strategy predicted higher risk perception and better perception of the situation.

Cognitive reappraisal is generally a more adaptive emotional response strategy, as it causes the individual to re-signify what they are experiencing. On the other hand, emotional suppression is a strategy focused on trying to control or suppress an emotional experience that is already in progress. Thus, emotional suppression can be expected to require repeated efforts to manage emotional responses as they continually arise, and challenge the individual's cognitive and attention resources (Gross, 2015).

In a longitudinal study conducted after the September 11 terrorist attacks on the World Trade Center towers, Bonanno, Papa, Lalande, Westphal, and Coifman (2004) found empirical evidence in the advantage of making the use of emotion regulation strategies more flexible. The authors indicate that flexible implementation, both in the use of cognitive reappraisal and emotional suppression, reduced levels of distress in college students one year after the event.

Findings from a longitudinal survey by Gross and John (2003) point out that cognitive reappraisal usually correlates positively with life satisfaction, optimism, and better self-esteem, showing fewer depressive symptoms. People who reevaluated situations obtained higher levels of well-being, good environmental mastery, personal growth, self-acceptance, and a clearer purpose in life. Emotional suppression, on the other hand, showed negative associations. Individuals who suppressed their emotions had more depressive symptoms, lower well-being, less meaning in life, low self-esteem, and less optimism.

Emotion regulation seems to be not only related to improved mental health, as in the studies cited above, but also related to increased well-being. The aspects of subjective happiness are related to the perception of satisfaction or dissatisfaction with life, and to the frequency in which individuals experience positive affect and negative affect. Meaning in life, on the other hand, relates to the degree to which people understand and perceive significance in their lives, as well as the degree to which they perceive their purpose or an overriding goal (Sheldon & Lyubomirsky, 2021).

Thus, it is worth considering that the pandemic of COVID-19, by destabilizing routines, promoting uncertainty

and threats to life, has become a common stressor, the situation in question being an emotional destabilizer that can affect, directly or indirectly, existing learning processes, feelings of subjective happiness and meanings of life, which, for adaptive purposes, needed to be flexible and sensitive to the context.

Considering the above regarding the changes in the face of COVID-19, potential stressors of university life, and the importance of assessing emotional regulation strategies is highlighted. What are the most commonly used strategies to better manage the academic and adverse demands arising from the containment measures of the COVID-19 expansion, and how much can these strategies impact psychological well-being? Is it possible to think of more adaptive emotion regulation strategies in order to protect the mental and emotional health of the university population? To try to answer some of these questions, the purpose of this study was to investigate associations between emotion regulation strategies and levels of subjective happiness and life meaning of college students in the context of the COVID-19 pandemic.

Method

Participants

This research was descriptive, quantitative and cross-sectional. The sample included 348 undergraduate students, most of them female (79%), aged up to 21 years (42.2%) and with a higher prevalence of single marital status (91%). Most of them reported living in apartments (55%) and having income higher than four minimum wages (36.5%), as shown in Table 1.

Inclusion criteria were college students, of legal age, with access to the internet, computer, and/or smartphone. Exclusion criteria were individuals who were not college students, minors, and who did not complete all of the online instruments.

Table 1

Percentage of answers of the participants' socio-demographic aspects

Sociodemographics	Percentage in numbers (n) %
Sex	
Female	(278) 79.0%
Male	(70) 20.0%
Age	
Up to 21 years	(147) 42.2%
From 22 to 26 years	(146) 41.9%
From 27 years onwards	(55) 15.8%
Marital status	
Single	(317) 91.0%
Married/Stable union	(27) 7.7%
Divorced/separated	(4) 1.1%
Home	
Apartment	(194) 55.0%
House	(150) 43.0%
Small Farm	(3) 0.8%
Farm	(1) 0.2%
Income	
Up to 1 minimum wage	(84) 24.5%
1 to 2 minimum wages	(58) 16.9%
3 to 4 minimum wages	(75) 21.9%
More than 4 minimum wages	(125) 36.5%

Instruments

In addition to the Consent Form, the form contained the following instruments: *Sociodemographic Questionnaire*, *Emotional Regulation Questionnaire* (ERQ), *Subjective Happiness Scale* (SHS) and *Meaning of Life Questionnaire* (MLQ).

Sociodemographic Questionnaire: Questions were asked about the sociodemographic profile of the participants, such as gender, age, marital status, type of residence, and income.

Emotional Regulation Questionnaire (ERQ): The *Emotion Regulation Questionnaire* (Gross & John, 2003), the ERQ consists of a ten-item measure that evaluates two strategies most commonly used to regulate emotions: four items measure emotional suppression and six items measure cognitive reappraisal. Responses to the items range from 1 (Strongly Disagree) to 7 (Strongly Agree). The questionnaire showed good properties with Cronbach's alpha coefficient between 0.79 (for the cognitive reappraisal subscale) and 0.73 (for the emotional suppression subscale). Test-retest reliability of 0.69 for both subscales and factor analysis (orthogonal rotation) supported a two-factor structure. For the present study, we used the Brazilian version of Boian, Soares, and Lima (2009), tested in an adult Brazilian population.

Subjective Happiness Scale (SHS): With its acronym from the English *Subjective Happiness Scale*, the SHS is a four-item test that assesses happiness from the respondent's own perspective. The instrument has shown excellent psychometric properties in several countries. In the validation study for Brazil, by Damásio, Zanon, and Koller (2014), in 600 Brazilian adults of both sexes, aged between 18 and 70 years ($M = 30.1$; $SD = 10.6$), the authors found adequate reliability index, with alpha coefficients ranging from 0.80 to 0.94 in 14 different samples.

Meaning of Life Questionnaire (MLQ): The MLQ is a ten-item instrument that covers two different constructs: Presence of Meaning - MLQ-P (e.g. My life has a clear sense of purpose) and Search for Meaning - MLQ-S (e.g. I am seeking a purpose or mission for my life). Each construct is rated on five items. The questionnaire showed acceptable psychometric properties in terms of reliability and quality for Brazil in the validation study conducted by Damásio, Koller, and Schnell (2013). Participants included 3,034 individuals (63.9% women), with ages ranging from 18 to 91 years ($M = 33.90$; $SD = 15.01$), from 22 Brazilian states.

Procedures

Data collection. Considering the need for social distancing, due to the COVID-19 pandemic, data collection occurred in an online format through a digital platform, in the period from July to October 2020. For the evaluation, respondents were invited to participate in the survey widely disseminated on social networks and emails with the provision of a link. The research participants were directly directed to the Free and Informed Consent Form (FICT) and, after marking the "I agree" for acceptance, the instruments were released for completion.

Data analysis. The descriptive and inferential analysis procedures were performed using JASP software. In the descriptive analyses, absolute frequency, relative frequency and percentage were calculated. For the inferential analyses, the chi-square was calculated ($p < 0.05$) in order to compare the model parameters, GAMMA association value, and logistic regression, with the objective of quantifying the probability of subjective happiness and meaning of life being adequately predicted by the use of emotion regulation strategies. To this end, the Odds Ratio (*OR*) was used as a measure of association and the 95% confidence interval was considered.

For the analysis of the results, the percentile value stratified by score is considered. Below 2 points indicates low result (percentile = 5-25%); between 2 and 7 points indicates moderate result (percentile = 25-75%); and above 7 points indicates high result (percentile = 75-95%). To evaluate the variables, we considered creating categories of data analysis considering low and high values from the medians.

Ethical Considerations

The research was approved by the Research Ethics Committee of the Escola Bahiana de Medicina e Saúde Pública (EBMSP) with opinion number 4,233,134 and CAAE 31420720.0.0000.5544, seeking to meet the requirements of resolutions nº 510/2016 and 466/2012 of the Conselho Nacional de Saúde (National Health Council), since it involves the participation of human beings. Aiming at the protection care and dignity of the participants, the Free and Informed Consent Form (FICT) was included among the instruments for consented participation.

All the material generated from the research is stored individually, in password-protected folders. Five years after the completion of this research, all files generated will be properly disposed of, in a way that ensures the confidentiality of the information contained.

Results

The purpose of this study was to investigate associations between emotion regulation strategies and levels of subjective happiness and life meaning of college students in the context of the COVID-19 pandemic.

The results presented in Table 2 identify that, in the COVID-19 pandemic, among the two emotion regulation strategies evaluated, the emotion suppression strategy was the most frequently used (87%), followed by cognitive reappraisal (72.4%), with both strategies being moderate for most participants.

The level of subjective happiness of college students scored most frequently as moderate (79.7%). The level of the search for meaning in life was also moderate understanding of the purpose of life (53%) and the presence of meaning in life was moderate (69.8%).

Table 2

Frequency and percentage of Emotional Regulation, Subjective Happiness and Meaning of Life

Emotional regulation	Values expressed in percentages (N = 348) (n)%
Low cognitive reappraisal	(93) 27.5%
Moderate cognitive reappraisal	(244) 72.4%
Low emotional suppression	(44) 12.9%
Moderate emotional suppression	(296) 87.0%
Subjective Happiness	
Low happiness	(61) 20.2%
Moderate happiness	(240) 79.7%
Meaning of life	
Low understanding of the purpose of life	(44) 13.9%
Moderate understanding of the purpose of life	(168) 53.1%
High understanding of the purpose of life	(104) 32.9%
Low presence of life purpose	(93) 29.5%
Moderate presence of life purpose	(220) 69.8%
High presence of life purpose	(2) 0.6%

Table 3 demonstrates the strength of association between emotion regulation strategies (suppression and reappraisal) and levels of subjective happiness and life meaning. The results pointed out that those people who fall within the high subjective happiness category are more likely to also fall within the high cognitive reappraisal category, with a significant difference between the groups ($X^2 = 16.117$; $p < 0.001$). The results seem to point out that increased use of cognitive reappraisal may increase the likelihood of having higher subjective happiness. High cognitive reappraisal, on the other hand, showed no association with the search for meaning in life ($X^2 = 1.293$; $p < 0.255$), however, showed significant association with the high presence of meaning of life ($X^2 = 14.065$; $p < 0.001$). People who were in the group with high cognitive reappraisal were more likely to also be in the group with high presence of meaning in life.

Regarding the second emotion regulation strategy evaluated, increased emotional suppression decreased the likelihood that the person would be in the group with high subjective happiness ($X^2 = 4.455$; $p = 0.035$). The increased use of emotional suppression caused a reverse effect, decreasing subjective happiness. Regarding the meaning of life, both the search for meaning in life ($X^2 = 1.439$; $p = 0.230$), about the presence of meaning in life ($X^2 = 1.469$; $p = 0.226$) have not shown significant associations with changes in the use of emotional suppression.

Table 3

Association between Emotional Regulation Strategies and the levels of Subjective Happiness and Meaning of Life

		Cognitive Reassessment		Statistical Testing	p-value	Gamma
		Low reinterpretation (n) %	High reinterpretation (n) %			
Subjective Happiness	Low	(82) 59.4%	(56) 40.5%	$X^2_{(1)} = 16.117$	< 0.001	0.444
	High	(57) 36.0%	(101) 63.9%			
Meaning of Life	Low Search	(74) 50.0%	(74) 50.0%	$X^2_{(1)} = 1.293$	0.255	0.129
	High Search	(71) 43.5%	(92) 56.4%			
	Low presence	(79) 58.9%	(55) 41.0%	$X^2_{(1)} = 14.065$	< 0.001	0.411
	High presence	(66) 37.5%	(110) 62.5%			
		Emotional Suppression		Statistical Testing	p-value	Gamma
		Low suppression (n) %	High suppression (n) %			
Subjective Happiness	Low	(56) 40.2%	(83) 59.7%	$X^2_{(1)} = 4.455$	0.035	-0.242
	High	(84) 52.5%	(76) 47.5%			
Meaning of Life	Low Search	(76) 50.6%	(74) 49.3%	$X^2_{(1)} = 1.439$	0.230	-0.135
	High Search	(72) 43.9%	(92) 56.0%			
	Low presence	(59) 43.3%	(77) 56.6%	$X^2_{(1)} = 1.469$	0.226	—
	High presence	(89) 50.2%	(88) 49.7%			

The data presented in Table 4 represent logistic regression analysis quantifying the likelihood of high subjective happiness and high perceived meaning of life being predicted by high or low use of cognitive reappraisal and emotion suppression strategies. The results indicated that increasing cognitive reappraisal as an emotion regulation strategy increased by two times the chance that people would experience high subjective happiness ($OR = 2.71$; 95% CI = 1.68 – 4.37). On the other hand, high emotional

suppression halved the probability of being in the group with high subjective happiness ($OR = 0.59$; 95%CI = 0.37 – 0.96).

Regarding the presence of meaning in life, the results were as follows: college students who were in the group using high cognitive reappraisal were twice as likely to be in the group with high presence of meaning in their lives ($OR = 2.39$; 95% CI = 1.51 – 3.79). High emotional suppression did not significantly predict association with change in college students' perception of presence of meaning in life ($OR = 0.76$; 95% CI = 0.48 – 1.21).

Table 4

Odds Ratio (OR): input method for the prediction of high Subjective Happiness and high Presence of Meaning in Life from the factors of Emotional Regulation

Emotional Regulation	Subjective Happiness		
	<i>OR</i>	<i>p</i>	95% Confidence Interval
High Cognitive reappraisal	2.71	< 0.001	1.68 - 4.37
Low Cognitive reappraisal	1.00		
High Emotional suppression	0.59	0.032	0.37 - 0.96
Low Emotional suppression	1.00		
Emotional Regulation	Presence of Meaning of Life		
High Cognitive reappraisal	2.39	< 0.001	1.51 - 3.79
Low Cognitive reappraisal	1.00		
High Emotional suppression	0.76	0.244	0.48 - 1.21
Low Emotional suppression	1.00		

Discussion

In summary, the main results point out that in the context of the COVID-19 pandemic, college students used the emotion regulation strategies-cognitive reappraisal and emotional suppression-moderately, with emotional suppression being used the most. Levels of subjective happiness and life meaning were also moderate for most participants. College students who had high use of cognitive reappraisal were more likely to have high subjective happiness (2.71 times more) and life meaning (2.39 times more). On the other hand, increased emotional suppression by college students produced lower frequency of subjective happiness (0.59 times less).

The relationship of using cognitive reappraisal with mental health has already been presented in some studies. The meta-analysis study presented by Ong and Thompson (2019) examined the relationship between emotion regulation strategies (cognitive reappraisal, expressive suppression) and mental health (measured by life satisfaction, positive affect, depression, anxiety, and negative affect). Included in this work were 48 studies, 51 independent samples, and 21,150 participants. The results showed that cognitive reappraisal correlated significantly and positively with positive indicators of mental health. Emotional suppression, on the other hand, correlated with low mental health indicators.

It is understood that practicing cognitive reappraisal in the face of adverse situations such as those caused by the pandemic of COVID-19 helps in a greater ability to adapt to new situations. However, experimental studies with different evidence indicate that people can increase their levels of happiness through intentional behaviors and still be able to maintain them for a long time (Sheldon & Lyubomirsky, 2021). The focus on positive experiences, besides contributing to the coping mechanisms, bringing elements that lead to understand the subjective well-being in people, can prevent diseases and promote health. This focus is defined by the absence of depression and the presence of good cognitive states, positive emotions, and positive behaviors that aim at subjective happiness (Camaliente & Bocalandro, 2017).

Gross (2015) points out that the evaluations that individuals make about their ability to manage perceived situations, tend to help in the more positive interpretation of events. One form of cognitive change is social comparison called downward regulation. It involves, for example, comparing the situation one is experiencing with that of another less fortunate person or seeking distraction as a strategy, thus altering the interpretation and decreasing negative emotion.

Distraction, when used as a strategy related to cognitive reappraisal, can be considered as more adaptive if combined with acceptance of the situation (Wolgast & Lundh, 2017). This could be a possible explanation for the increase in subjective happiness along with cognitive reappraisal. Conversely, when distraction is used to avoid aversive situations, as in emotional suppression, its use is related to a non-adaptive strategy (Wolgast & Lundh, 2017).

Thus, the results of the present study suggest considering that, in difficult moments, having self-control and flexibility in the use of emotion regulation strategies predicts better perception of the situation, which, when seen in a less threatening way, tends to enable more adaptive ways to deal with the event. In a similar vein, Bonanno et al. (2004) argue that expressing or suppressing the emotional is not as important for adjustment as is the ability to use them flexibly and as required by the situational context.

It is worth noting that, despite the context, emotional regulation and levels of subjective happiness and meaning of life are often moderate is a fact that draws attention. Morales and Lopez (2020) point out that at this stage of life, young people are confronted with the need for emotional and financial stability, independence and autonomy from the family, more intimate relationships, and time management - true challenges that require change and adaptation, and the quality of this adaptation is a key factor for a better life.

However, it is evident, both in this study and in the literature, that some emotional regulation strategies, such as cognitive reappraisal and emotional suppression, diverge in their consequences, presenting opposite results. Weide, Vicentini, Araújo, Machado, and Enumo (2020) report that the ability to self-regulate tends to be challenging for those individuals who perceive the pandemic as a threat and, as a result, become more vulnerable to stress. Zanon et al. (2020) state that the implementation of emotion regulation strategies for the purpose of coping with difficulties, in addition to increasing subjective happiness, can reduce symptoms of anxiety, depression, and/or stress.

Although I understand that both types of emotion regulation can be adaptive or maladaptive (Leahy, Tirsch, & Napolitano, 2013), as the literature points out, emotion regulation explained through higher cognitive reappraisal shows a higher prevalence of subjective happiness and a higher perceived presence of meaning in life. Viewing difficult situations from positive angles predicted better adaptation and adjustment. Weide et al. (2020) emphasize that adverse situations drive adaptive responses and overcoming obstacles, along with the search for life meanings in the face of situations that charge new adjustments and meanings - although cognitive reappraisal influenced the perceived presence of meanings more than the search for them.

However, even though the literature points to emotional suppression as negative and this study has shown negative associations with subjective happiness, its use did not interfere with the meaning of life. These findings lead us to consider that emotional suppression alone is not able to predict lower perceived meaning of life; other factors may also be associated and contributing to it. Thus, in specific situations, deactivating or temporarily suppressing emotions can be useful when used in a flexible and necessary manner according to the events (Leahy et al., 2013).

In this sense, to properly manage emotions is a fundamental skill when facing a context that generates instability. It is essential to extract the best that the situation

can offer, whether in the pandemic or at another time of life. Zanon et al. (2020) reinforce that the adoption of the perspective of reassessing situations can promote mental and emotional health, feelings of subjective happiness, and a clear perception of the meanings that exist in people's lives, which were - and still are - built throughout life, despite the difficulties imposed unexpectedly.

The research findings were shown to contribute to the literature and the relationships between emotion regulation and levels of subjective happiness and meaning of life in a pandemic context. Emotional regulation by using the cognitive reappraisal strategy, as expected, brought positive associations. Emotional suppression was expected to contribute negatively to the perception of meaning in life; however, its use did not predict a greater search for these meanings.

Cognitive change proved to be an effective evaluative capacity, either by transforming the way university students thought about the situation or by their ability to manage the demands of the pandemic. It is essential to point out that flexibility to deal with (self) imposed demands is an essentially important capacity. Therefore, it is suggested that avoiding ruminations in the face of adversity can provide better adaptation.

It is necessary to consider that emotional regulation is not a unidirectional process, it can be not only adaptive but also maladaptive for positive emotional situations; and functional and dysfunctional for negative emotional events. Adaptation is a subjective and contextual process, whereas cognitive reappraisal develops primarily in the process of socialization, through social learning. In terms of complexity, cognitive reappraisal is a more cognitively complex strategy when compared to emotional suppression, which is learned earlier.

Admittedly, this study is limited to infer generalizations, since the measure used restricts the regulatory process to two strategies. Thus, the measure captures only a portion of a broad phenomenon. Another limitation is the information bias, since it was only possible to access participants with access to the internet, social networks, computer and/or smartphone, through a self-report scale.

This research included a significant audience of college students, contributing with its findings to the strengthening of psychological spaces and emergencies in mental and emotional health during and after the pandemic, since not all its impacts are known yet. However, in face of these possible changes, it is recommended that these issues be the focus of public policies in mental health.

The need for further research on this theme in the national context is highlighted, in order to better map the processes that lead people to choose certain strategies to deal with the intensity of emotions. We emphasize the importance of longitudinal studies that evaluate emotion regulation strategies capable of predicting, in the long run, better levels of subjective happiness and meaning of life, with a view to the mental and emotional quality of individuals at different times.

References

- Bao, Y., Sun, Y., Meng, S., Shi, J., & Lu, L. (2020). 2019-nCoV epidemic: Address mental health care to empower society. *The Lancet*, *395*(10224), 37-38. doi:10.1016/S0140-6736(20)30309-3
- Bezerra, M. L. O., Siquara, G. M., & Abreu, J. N. S. (2018). Relação entre os pensamentos ruminativos e índices de ansiedade e depressão em estudantes de psicologia [Comparison between ruminative thoughts and indexes of anxiety and depression in psychology students]. *Revista Psicologia, Diversidade e Saúde*, *7*(2), 235-244. doi:10.17267/2317-3394rpd.v7i2.1906
- Boian, A. C., Soares, D. S. M., & Lima, J. (2009). Questionário de Regulação Emocional de J. Gross & O. John (2003): Adaptado para a população brasileira [Emotional Regulation Questionnaire: Adapted to Brazilian population]. Retrieved from https://spl.stanford.edu/sites/g/files/sbiybj19321/files/media/file/portuguese_brazilian.pdf
- Bonanno, G. A., Papa, A., Lalande, K., Westphal, M., & Coifman, K. (2004). The importance of being flexible: The ability to both enhance and suppress emotional expression predicts long-term adjustment. *Psychological Science*, *15*(7), 482-487. doi:10.1111/j.0956-7976.2004.00705.x
- Camaliente, L. G., & Bocalandro, M. P. R. (2017). Felicidade e bem-estar na visão da psicologia positiva [Happiness and well-being according to the positive psychology]. *Boletim – Academia Paulista de Psicologia*, *37*(93), 206-227. Retrieved from http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1415-711X2017000200004&lng=pt&tlng=pt
- Damásio, B. F., Koller, S. H., & Schnell, T. (2013). Sources of Meaning and Meaning in Life Questionnaire (SoMe): Psychometric properties and sociodemographic findings in a large Brazilian sample. *Acta de Investigación Psicológica*, *3*(3), 1205-1228. doi:10.1016/S2007-4719(13)70961-X
- Damásio, B. F., Zanon, C., & Koller, S. H. (2014). Validation and psychometric properties of the Brazilian version of the Subjective Happiness Scale. *Universitas Psychologica*, *13*(1), 17-24. doi:10.11144/Javeriana.UPSY13-1.vppb
- Gross, J. J. (2015). *Handbook of emotion regulation* (2nd ed.). New York, NY: Guilford.
- Gross, J. J., & John, O. P. (1998). Mapping the domain of emotional expressivity: Multimethod evidence for a hierarchical model. *Journal of Personality and Social Psychology*, *74*(1), 170-191. doi:10.1037//0022-3514.74.1.170
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*(2), 348-362. doi:10.1037/0022-3514.85.2.348

- Leahy, R. L., Tirsch, D., & Napolitano, L. A. (2013). *Regulação Emocional em Psicoterapia: Um guia para o terapeuta cognitivo-comportamental* [Emotion Regulation in Psychotherapy: A practitioner's guide] (I. H. Oliveira, Trans.). Porto Alegre, RS: Artmed.
- Morales, V., & Lopez, Y. A. (2020). Impactos da Pandemia na vida acadêmica dos estudantes universitários [Impacts of the Pandemic on the academic life of university students]. *Revista Angolana de Extensão Universitária*, 2(2), 53-67. Retrieved from <https://www.portalpensador.com/index.php/RAEU-BENGO/article/view/205>
- Ong, E., & Thompson, C. (2019). The importance of coping and emotion regulation in the occurrence of suicidal behavior. *Psychological Reports*, 122(4), 1192-1210. doi:10.1177/0033294118781855
- Pellisson, S., & Boruchovitch, E. (2022). Estratégias de regulação emocional de estudantes universitários: Uma revisão sistemática da literatura [Emotion regulation strategies for university students: A systematic literature review]. *Educação & Formação*, 7(1), e7152. doi:10.25053/redufor.v7i1.7152
- Restubog, S. L. D., Ocampo, A. C. G., & Wang, L. (2020). Taking control amidst the chaos: Emotion regulation during the COVID-19 pandemic. *Journal of Vocation Behavior*, 119, 103440. doi:10.1016/j.jvb.2020.103440
- Schudy, A., Zurek, K., Wiśniewska, M., Piejka, A., Gawęda, L., & Okruszek, L. (2020). Mental well-being during Pandemic: The role of cognitive biases and emotion regulation strategies in risk perception and affective response to COVID-19. *Frontiers in Psychiatry*, 11, 589973. doi:10.3389/fpsy.2020.589973
- Sheldon, K. M., & Lyubomirsky, S. (2021). Revisiting the sustainable happiness model and pie chart: Can happiness be successfully pursued? *The Journal of Positive Psychology*, 16(2), 145-154. doi:10.1080/17439760.2019.1689421
- Weide, J. N., Vicentini, E. C. C., Araujo, M. F., Machado, W. L., & Enumo, S. R. F. (2020). *Cartilha para enfrentamento do estresse em tempos de pandemia* [Primer for coping with stress in times of pandemic]. Porto Alegre, RS: PUC-RS; Campinas, SP: PUC-Campinas. Retrieved from <https://www.puc-campinas.edu.br/wp-content/uploads/2020/04/cartilha-enfrentamento-do-estresse.pdf.pdf>
- Wolgast, M., & Lundh, L. G. (2017). Is distraction an adaptive or maladaptive strategy for emotion regulation? A person-oriented approach. *Journal of Psychopathology and Behavioral Assessment*, 39(1), 117-127. doi:10.1007/s10862-016-9570-x
- Zanon, C., Dellazzana-Zanon, L. L., Wechsler, S. M., Fabretti, R. R., & Rocha, K. N. (2020). COVID-19: Implicações e aplicações da Psicologia Positiva em tempos de pandemia [COVID-19: Implications and applications of Positive Psychology in times of pandemic]. *Estudos de Psicologia (Campinas)*, 37, e200072. doi:10.1590/1982-0275202037e200072

Natália Helem de Almeida Cunha is a Graduanda em Psicologia by Universidade do Estado da Bahia, Salvador-BA, Brazil.

Camila Barreto Bonfim is a Professor of the Universidade do Estado da Bahia, Salvador-BA, Brazil.

Cassio Santos-Lima is a Professor of the Escola Bahiana de Medicina e Saúde Pública, Salvador-BA, Brazil.

Gustavo Marcelino Siquara is a Professor of the Escola Bahiana de Medicina e Saúde Pública, Salvador-BA, Brazil, and of the Universidade Estadual de Feira de Santana, Feira de Santana-BA, Brazil.

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