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The Relationship Between Stress and Well-being: The Mediating Roles of Students' Psychological Flexibility and Loneliness During the Coronavirus Pandemic

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Abstract

Coronavirus (COVID-19) has greatly impacted people's lives, including those of students in higher education, who have experienced drastic changes causing high levels of stress and decreased well-being. The relationship between stress and well-being can be viewed through the lens of psychological flexibility and loneliness. Individuals who experience high stress tend to be psychologically inflexible and have avoidant/maladaptive coping strategies. As a result, they are also vulnerable to loneliness, which ultimately results in decreased well-being. In this study, of 945 student-participants, 43.28% met the criterion for high loneliness, 21.9% reported high perceived stress, 69.8% reflected high psychological inflexibility, and their mean score for well-being was 54.45. Serial mediation analysis found that psychological flexibility and loneliness partially mediate the relationship between stress and well-being. However, stress can affect well-being directly but also indirectly through psychological inflexibility and loneliness. A high level of stress, with a low level of psychological flexibility, results in a high level of loneliness; hence well-being decreases. Interventions promoting psychological flexibility can help individuals adapt and cope with difficult situations during the pandemic.

Keywords

COVID-19, loneliness, mental health, psychological flexibility, stress, well-being

The coronavirus (COVID-19) pandemic has infected over two hundred million people and resulted in over 4,00,000 deaths worldwide (WHO, 2020). It has caused restrictions on travel, imposed social distancing, self-isolation, quarantine, working from home, and stretching health facilities to and beyond their limits (Bedford et al., 2020). "Sheltering in place" and working from home have also elevated feelings of loneliness, social isolation, loss of financial gain, activity restrictions, and boredom (Brooks et al., 2020; Tull

et al., 2020). Previous studies on increases in anxiety and depression have proven the pandemic's mental health impact (Lei et al., 2020; Junfeng Li et al., 2020), including in students (Asmundson & Taylor, 2020; Coyne et al., 2020; Odriozola-González et al., 2020). As of March 2020, 150 countries had closed schools and institutions of higher education nationwide (UNESCO, 2020). Globally, universities face challenges of the COVID-19 pandemic that include shifting from in-person to online classes, new methods of assessment and evaluation, difficulties in exchange programs, and also measures to keep university staff, faculty, and students healthy (Araújo et al., 2020; Lima et al., 2020).

At any time, the experience of being a university student can be stressful and can nega-

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tively impact well-being (Jeffords et al., 2020). Students stress is usually related to studying, transition to the university, living away from home, financial pressure, and stress management strategies (Robotham, 2008). And stress occurs at all levels: individual, dyadic, and group. In addition, students often interpret their time as university students as periods of loneliness (Richardson et al., 2017), and their relationships during that time can be a source of both help and stress (Hurst et al., 2013). In fact, Soysa and Wilcomb (2015) found university students to experience significantly higher psychological distress and lower psychological well-being than the general population. Moreover, students' age during the college years is a peak period for the onset of many common mental disorders (Auerbach et al., 2018). A 2020 survey indicated that university students had experienced moderate and excessive anxiety (Cao et al., 2020), which might have been associated with the pandemic's impact on their studies and future employment prospects (Wang et al., 2020). Liu et al. (2020) also found that most respondents reported loneliness during the pandemic and low ability to tolerate distress. Overall, changes occurring in academic life during the COVID-19 pandemic threaten health because they trigger significant stress, further straining students' mental health and well-being (Arslan, Yildirim, Karataş, et al., 2020).

In general, stress results from interaction between individuals and the environment, how they assess events, and through cognitive appraisal that can determine how the individual copes (Lazarus & Folkman, 1984; Outlaw, 1993). When individuals judge that they have the psychological, social, and physical resources they need to meet challenges, their level of well-being tends to be stable (Dodge et al., 2012). Thus, the foundation of well-being lies in the systemic balance of challenges and resources. When individuals face challenges that are too difficult, the system becomes unbalanced (Kloep et al., 2009), and prolonged stress can exceed a individuals' ability to deal with it effectively, thus decreasing well-being (Hudyma, 2019; Wersebe et al., 2018). However, by understanding the associated psychological processes, we can help individuals manage distress during a pandemic and help them take preventive actions to prevent other psychological problems from arising in the long

term (Dawson & Golijani-Moghaddam, 2020).

Given that cognitive appraisal mediates between stress and burnout (Gomes et al., 2013), individuals' ability to be psychologically flexible also appears to explain self-regulation and help inhibit impulsive responses (Kashdan & Rottenberg, 2010). Indeed, psychological flexibility means the ability to connect fully in the present as a conscious human being, prioritizing goals worthy of change, or to persist in certain behaviors, despite being in an unpleasant situation (Hayes et al., 2006). Psychological flexibility is comprised of essential processes that help individuals manage stress, become more adaptive, and promote value-based action (Gloster et al., 2017). Such flexibility is especially advantageous when most circumstances are beyond individuals' control, thus making it impossible to change the situation (Doorley et al., 2020; Smith et al., 2020). Fortunately, however, interventions to increase psychological flexibility can effectively reduce stress and psychological problems (Martine Fledderus et al., 2013; Hayes et al., 2012; Steenhaut et al., 2019).

Indeed, Wersebe and colleagues (2018) demonstrated that increased psychological flexibility was associated with decreased stress and increased well-being. Individuals' psychological flexibility is indicated by how they deal with stress (Dawson & Golijani-Moghaddam, 2020). Importantly, psychological flexibility differs from stress-coping strategies, and such flexibility is related to adaptability and resilience, which consider cognitive, behavioral, and emotional responses to life situations (Karekla & Panayiotou, 2011; Waldeck et al., 2021). Therefore, it makes sense that psychologically flexible individuals have adaptive coping that helps them recover from stress and improve well-being (Arslan & Allen, 2021).

Psychological flexibility's opposite is psychological inflexibility (Hayes et al., 2006), which is indicated by rigid dominance of psychological reactions over selected values or actions (Arslan et al., 2020). Individuals who avoid experiences seek to control and change uncomfortable ones, even inconsistently with their values or goals (Harris, 2019; Hayes et al., 2012). Psychologically inflexible individuals tend to respond to stressful situations rigidly and reactively or, in other words, undergo cognitive fusion, making it difficult to find meaning

(Tyndall et al., 2018). Attachment to internal experiences reduces their ability to acknowledge and label their thoughts and emotions; as a result, they tend to avoid such internal experiences (Cox et al., 2018).

When the environmental context requires changes to active coping strategies, inflexible individuals still rely on the same strategy, regardless of its function and results; this simply adds to inflexible individuals' burden (Karekla & Panayiotou, 2011; Rueda & Valls, 2020). Expending more resources on the avoidance process makes the avoidance strategy inflexible (Kashdan et al., 2006), and attempts to suppress and avoid emotions are often excessive and even increase the frequency of thoughts and feelings that cause distress (Gross, 2002). Then, high stress causes individuals to perceive the situation as a threat and to become inflexible in determining coping strategies (Gomes et al., 2013).

One avoidance coping strategy that shows students' inflexibility is procrastination (Stead et al., 2010), and constant procrastination correlates strongly with depression and anxiety (Eisenbeck et al., 2019). Inflexible individuals are also found to be afraid of closeness with others, so they tend to pay less attention to people in interactions and are relatively less involved in conversations (Shi et al., 2016). Conversely, a person's willingness to express emotions increases the potential for obtaining help and building meaningful social networks (Graham et al., 2008). Without willingness to express emotions, social support tends to be low and leads to loneliness (Maitland, 2020).

Avoidance of experience inhibits maintenance of existing relationships and development of new ones, resulting in loneliness (Chawla & Ostafin, 2007). In the COVID-19 context, Liu et al. (2020) found that most participants felt lonely—discomfort arising because social needs are not met through the quantity or quality of social relationships (Hawkey & Cacioppo, 2010). In students' lives, the university period is chock full of transition, and adaptation can be a time of vulnerability to loneliness (Richardson et al., 2017). In turn, loneliness can be a risk factor for anxiety, symptoms of depression, suicidal thoughts, and other psychopathologies (Antonelli-Salgado et al., 2021; McQuaid et al., 2021). Thus, understanding loneliness due to social distancing is crucial to good mental health

and well-being (Horesh et al., 2020).

Tanhan's research (2020) adds to the evidence that college students are lonely during the pandemic due to loss of friends and social activities. Lonely students experience poor relationships with others, feel helpless, quickly give up in the face of challenges, and ultimately suffer effects to their academic competence and autonomy (Singh et al., 2020). Additionally, lonely individuals have low ability to tolerate stress, so their level of well-being is also low (Liu et al., 2020). Proof may be observed in excessive cell phone use during the pandemic—a form of escape from the immediate situation (Li et al., 2021).

This study attempts to implement Landi et al.'s (2020) recommendation to examine factors that promote well-being during the COVID-19 pandemic. Therefore, this cross-sectional study attempts to understand the mechanisms of stress in well-being that can be mediated by psychological flexibility and loneliness. High-stress students with low levels of psychological flexibility are prone to loneliness, in turn leading to maladaptive coping strategies. As a result, their level of well-being is also low. By knowing the mediating effect of psychological flexibility, this research can form the basis for interventions that increase individual psychological flexibility to promote well-being (Howell & Demuyneck, 2021).

Methods

Participants

This study's research population consisted of Indonesian university students, aged 18–40, studying both domestically and abroad—a convenience sample of 1028 who completed an online survey from June 18 to July 6, 2020. We assessed Indonesian students in various countries while also considering the similarities in stay-at-home orders that affected students' daily activities during the COVID-19 outbreak. After eliminating double responses and conducting outlier analysis, we included 945 participants in the analysis.

Measures

Sociodemographics. We explored several demo-

graphic variables significant to mental health outcomes: age, gender, education level, residences, income level, mental health history, and duration of COVID-19 impact. We also measured COVID-19's perceived impact by asking a question rated on a 5-point Likert scale, "To what extent has the situation associated with COVID-19 affected the way you live your life?"

Stress. The Perceived Stress Scale (PSS; Cohen et al., 1983) is a 10-item self-report measure of perceived stress in certain situations. Higher scores indicate higher perceived stress levels (0–40 points). Scores ranging from 0–13 are considered low perceived stress, from 14–26 moderate perceived stress, and from 27–40 high perceived stress. In this study, PSS had a good reliability coefficient (0.85).

Well-being. The Mental Health Continuum - Short Form (MHC-SF) is based on Ryff's (1989) theory of well-being. It consists of 14 items rated on a 6-point Likert scale (Keyes et al., 2008). The MHC-SF evaluates the individual's personal condition over the past month. The higher the score, the higher the individual's well-being. In this study, MHC-SF had a good reliability coefficient (0.91).

Psychological Flexibility. The Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011) measures psychological flexibility on a unidimensional Likert-type scale from 1 (not at all true) to 7 (completely true). A sample item is "I am afraid of my feelings." The average score in the non-clinical population was 18.51 (SD 7.05). Scores of >24–28 suggest probable clinical distress and predict the likelihood of future distress and work absence. In this study, AAQ-II had a good reliability coefficient (0.90).

Loneliness. The 20-item University of California, Los Angeles (UCLA) Loneliness Scale (version 3) is the most commonly used measure (Fledderus et al., 2013). Participants rate the frequency of several experiences on a 4-point Likert scale. In this study, UCLA-3 had a good reliability coefficient (0.90). Cut-off scores for loneliness severity were adapted from Cacioppo and Patrick (2008): total score < 28 = no/low loneliness, total score 28–43 = moderate loneliness, and total score > 43 = high loneliness.

Procedure

The survey was advertised as investigating COVID-19's psychological impact on Indonesian students in higher education. Informed consent state that the data obtained only used for this study. Informed consent given before their participation, so students could choose to withdraw participation at any. After completing the survey, participants were given access to a self-care guidebook for the COVID-19 pandemic, written by a faculty lecturer. The survey was developed on Google Forms and took approximately 10–15 minutes to complete. An accurate response rate was not possible to obtain, because recruitment was primarily conducted through social networks. The psychology faculty's ethics research committee of the University of Indonesia approved this research procedure.

Data Analysis

Primary analysis was conducted to determine the role of psychological flexibility and loneliness as mediators between stress and well-being. Socio-demographic variables such as age, perceived impact of COVID-19, marital status, and perception of finances were entered as covariates. Serial mediation analyses were conducted using the PROCESS macro, applying model 6, robust standard errors, and 95% confidence intervals based on 5000 bootstrap samples (Hayes, 2017).

Results

This research sample included 945 Indonesian university students studying both domestically (67%) and internationally (33%). Of the respondents, 43.28% met the criterion for high loneliness, 21.9% for high perceived stress, and 69.8% for low psychological flexibility. The mean score of well-being was 54.45. These findings reflect the COVID-19 pandemic's psychological impact on university students.

Table 1 summarizes descriptive data on sociodemographics and their correlation with psychological variables (r = Pearson's correlation for continuous variables, Spearman's correlations for ordinal variables, and point biserial correlations for dichotomous variables). We also compared mean scores of the psychological vari-

Table 1. Descriptive statistics and correlations among sociodemographic, stress, well-being, psychological flexibility, and loneliness

Demographic Data	n	%	Psychological Variables							
			Stress		Well-being		Psychological Flexibility		Loneliness	
			R	M (SD)	R	M (SD)	R	M (SD)	R	M (SD)
Gender			-.18**		.13**		-.19**		0.02	
Female	709	75								
Male	236	25								
Age										
18-39 years	945	100	-.24**		.29**		-.29**		-.19*	
Marital Status										
Single	811	85.8		21.64** (6.53)		52.95** (11.82)		29.97** (8.95)		41.82** (10.58)
Married	61	6.5		18.61** (6.84)		61.84** (11.91)		24.56** (9.45)		37.31** (9.23)
Married w. Child	69	7.3		16.99** (5.53)		64.84** (11.15)		22.64** (8.45)		36.19** (8.58)
Divorce	4	0.4		17.5** (2.38)		66** (14.17)		24** (9.45)		40.5** (17.14)
Stable Income			.13**		-.048		.13**			
Yes	763	80.7		20.66** (6.62)		54.74 (12.54)		28.49** (9.22)		40.45** (10.32)
No	182	19.3		22.87** (6.30)		53.24 (11.45)		31.44** (8.83)		43.85** (10.96)
Financial Perception			-.164**		-.099**		-.145**		-.139**	
Not enough	129	13.7		24.19** (5.78)		50.74** (12.68)				
Enough	511	54.1		20.83** (6.47)		54.85** (12.14)				
More than enough	308	32.7		20.20** (6.83)		55.34** (12.30)				
Psy Status History										
Yes	67	7.1		25.01** (5.76)		48.63** (12.04)		36.01** (8.11)		46.46** (11.44)
No	514	54.4		18.85** (6.22)		57.65** (11.64)		25.62** (8.50)		38.23** (9.62)
Maybe	364	38.5		23.52** (6.09)		51.01** (12.07)		32.63** (8.28)		44.19** (10.35)
University							-.08*			
Domestic	632	66.9		21.44* (6.56)		53.82* (12.11)		29.55* (9.22)		41.25 (10.45)
International	313	33.1		20.39* (6.67)		55.72* (12.73)		28.06* (9.14)		40.83 (10.69)
Program Level			-.23**		.25**		-.28**		-.19**	
Undergraduate	491	52		22.60** (6.20)		51.52** (11.35)		31.54** (8.92)		42.83** (10.29)
Master	405	42.9		19.46** (6.76)		57.00** (12.45)		26.56** (8.68)		39.66** (10.43)
PhD	49	5.1		19.41** (5.94)		62.80** (12.78)		24.84** (9.49)		35.84** (10.32)

Table 1. Descriptive statistics and correlations among sociodemographic, stress, well-being, psychological flexibility, and loneliness (continued)

Demographic Data	n	%	Psychological Variables							
			Stress		Well-being		Psychological Flexibility		Loneliness	
			R	M (SD)	R	M (SD)	R	M (SD)	R	M (SD)
Perceived impact of COVID-19			.27**		-.14**		.29**		.14**	
0	6	.6								
1	35	3.7								
2	68	7.2								
3	219	23.2								
4	352	37.2								
5	265	28								
Duration of COVID-19			-.00		.02		.03		.02	
0 month	1	.1								
1 month	7	.7								
2 months	60	6.3								
3 months	502	53.1								
4 months	316	33.4								
5 months	53	5.6								
6 months	5	.5								
7 months	1	.1								
Relative with COVID-19			-.06		.01		-.08*		.03	
Yes	67	7.1								
No	878	92.9								
Residence										
With parents	554	58.6		21.65 (6.40)		53.12** (11.46)		30.20** (8.84)	41.63 (10.26)	
With family at own house	34	3.6		17.76 (6.31)		62.03** (11.32)		24.62** (8.91)	38.12 (8.65)	
Dormitory (Alone)	156	16.5		20.17 (7.01)		56.74** (13.78)		26.58** (9.24)	40.28 (10.72)	
With room-mate/ dorm	179	18.9		20.83 (6.72)		55.26** (12.91)		28.19** (9.60)	40.58 (11.40)	
With relatives	22	2.3		21.18 (6.91)		53.41** (13.63)		31.77** (9.22)	42.95 (10.34)	
Total	945	100								

Note. r = Pearson's correlation for continuous variables, Spearman's correlations for ordinal variables, and point biserial correlations for dichotomous variables

ables according to their sociodemographic group's mean scores using t-test or ANOVA, depending on how many data groups we had.

Serial mediation analyses resulted in three regression models: The first predicts the first mediator (psychological flexibility); the second predicts the second mediator (loneliness); and the third predicts the dependent variable (well-being) (see Table 2).

The first regression model predicted statistically significant psychological flexibility with a

large effect size, $F(6.938) = 197.04$, $p < 0.001$, $r = 0.75$, $r^2 = 0.56$. This model explained 55.8% of psychological flexibility's variance. The second regression model examined the role of stress and psychological flexibility in statistically predicting loneliness with a relatively large effect size $F(7.937) = 63.52$, $p < 0.001$, $r = 0.57$, $r^2 = 0.32$, and the model explained 32.2% of variance of loneliness. The third regression model examined the role of stress, psychological flexibility, and loneliness in statistically predicting well-being.

Table 2. Regression analysis from serial mediation

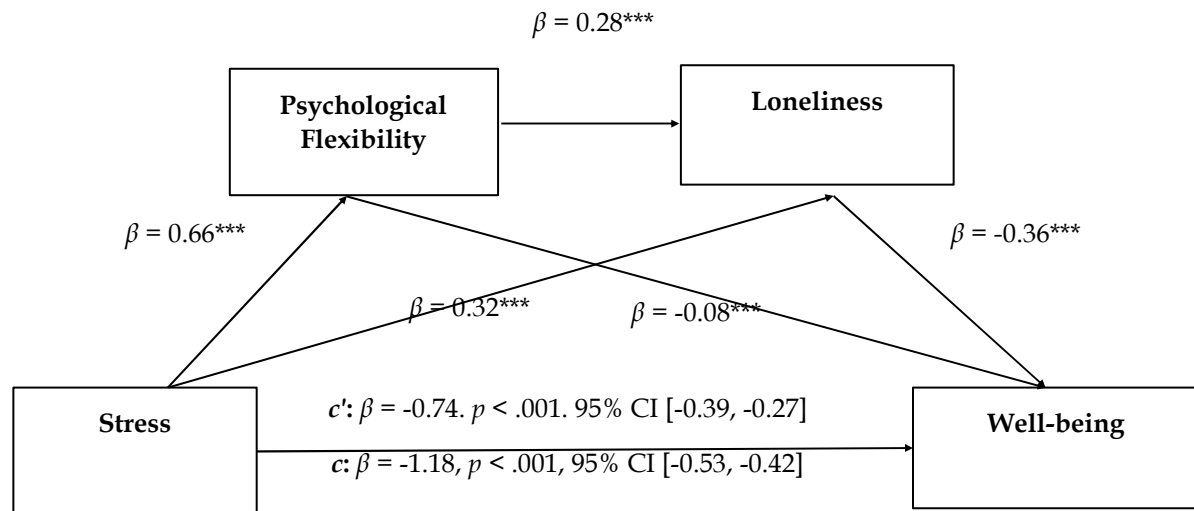
	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Model Variable Mediator 1					
Constant	13.37	1.78		7.52	.000
Gender**	-1.00	.48	-.05	-2.11	.035
Age***	-.020	.06	-.10	-3.60	.000
Perceived Impact of Covid-19***	.86	.19	.10	4.48	.000
Marital Status	-.31	.45	-.02	-.69	.489
Financial Perception	-.28	.48	-.02	-2.11	.378
Stres***	.921	.33	.66	27.90	.000
Model Variable Mediator 2					
Constant	21.18	2.59		8.18	.000
Gender***	3.50	.67	.14	5.19	.000
Age	-.05	.08	-.02	-.67	.504
Perceived Impact of Covid-19	-.22	.27	-.03	-.82	.413
Marital Status	-.52	.64	-.03	.81	.420
Financial Perception	-.82	.44	-.05	-1.86	.064
Stres***	.51	.06	.32	8.14	.000
Psychological Flexibility***	.32	.05	.28	6.89	.000
Model Dependent Variable					
Constant	84.19	2.51		33.55	.000
Gender	1.06	.64	.04	1.66	.098
Age	.08	.07	.003	1.12	.262
Perceived Impact of Covid-19	.46	.26	.04	1.78	.075
Marital Status ***	2.43	.60	.12	4.03	.000
Financial Perception	-.077	.41	-.04	-1.85	.064
Stress***	-.74	.06	-.40	-12.06	.000
Psychological Flexibility *	-.11	.04	-.08	-2.36	.018
Loneliness***	-.42	.03	-.36	-13.86	.000

Note. *N* = 945. Bootstrap sample size = 5000. **p* < .05. ***p* < .01. ****p* < .001

This model significantly predicted well-being, with a relatively large effect size $F(8,936) = 153.62$, $p < 0.001$, $r = 0.75$, $r^2 = 0.57$, and explained 56.8% of the variance of well-being.

The research hypothesis is based on both direct and indirect effects of the mediation serial regression model. Stress's indirect effect on well-being through psychological flexibility was found significant, with a value of = -0.1 95% CI [-0.18; -0.01]. Stress's indirect effect on well-being through loneliness was found significant,

with a value of = -0.22, 95% CI [-0.28, -0.16]. In addition, stress's indirect effect on well-being through psychological flexibility and loneliness was found significant, with a value of = -0.12, 95% CI [-0.16, -0.09]. Total indirect effect was obtained from serial mediation analysis at = -0.44, 95% CI [-0.53, -0.34]. Total effect, that is, the sum of direct and indirect effects of serial mediation analysis, was = -1.18, $p < 0.001$, 95% CI [-1.27, -1.08]. In conclusion, based on direct and indirect effects, psychological flexibility and

Figure 1. Psychological Flexibility and Loneliness as Mediator between Stress and Well-being

Note. $***p < .001$

loneliness significantly but partially mediate the relationship between stress and well-being. Stress can directly affect well-being, but the relationship between the two can also occur through psychological flexibility and loneliness.

Discussion

In the serial mediation analysis, psychological flexibility successfully mediated the relationship between stress and well-being. These results align with Wersebe et al. (2018), who found that increased psychological flexibility during intervention was associated with reduced stress and improved well-being. Psychological flexibility overlapping adaptability provides a potential pathway for interventions that enhance an individual's ability to adapt to challenging situations (Waldeck et al., 2021). Flexible individuals can adjust and overcome obstacles/risks and direct their behavior toward worthy goals (Kashdan & Rottenberg, 2010). Thus, more flexible students are better able to survive and complete assignments at university despite obstacles (Jeffords et al., 2020).

In the second regression model, loneliness, experienced by students studying both at home and abroad (Vasileiou et al., 2019), was also found to mediate the relationship between stress and well-being. This study's results support the research of Lee et al. (2020) who found that people who experienced high loneliness had lower levels of well-being. The higher the level of lone-

ness, the higher the potential for individuals to suffer from depression, phobias, and obsessive-compulsive disorder (Meltzer et al., 2013). In addition, individuals who experience loneliness also have low ability to tolerate stress, so that individuals' level of well-being is low (Liu et al., 2020). These results align with the research of Palgi et al. (2020): Loneliness can be a main risk factor for depression and anxiety, so especially during a pandemic, reducing loneliness is important.

Serial mediation analysis confirmed that students with high stress tend to be inflexible, so they are prone to loneliness and decreased well-being. Inflexible students avoid uncomfortable experiences by controlling and changing their internal experiences (Harris, 2019). They assume that their thoughts and feelings are actual realities without being open to observing them objectively or, in other words, having cognitive fusion (Tyndall et al., 2018). As a result, they tend to experience loneliness because they evaluate negatively the situation they feel (Hayes et al., 2006). Lonely students usually pay less attention to interactions and are less involved in conversations (Shi et al., 2016). As a result, they increasingly believe they lack interpersonal relationships (Hawkley & Cacioppo, 2010). Individuals anxious in social situations are often dominated by negative self-evaluations and perceive themselves as socially incompetent (Gillanders et al., 2014). Individual inflexibility also leads to excessive use of cell phones to escape from feelings of

loneliness that reduce well-being (Jiayu Li et al., 2021).

Students with high stress levels are prone to experience distress and use maladaptive coping strategies (Rueda & Valls, 2020; Tavakoli et al., 2019). Individuals who accept difficult thoughts, feelings, and sensations find it more challenging than others to engage in behaviors that avoid sources of stress and to employ various strategies to cope with stress (Donald & Atkins, 2016; Hayes et al., 2012). However, in a variety of samples, several studies have reported decreased emotional discomfort and decreased belief in negative thoughts after a brief cognitive defusion (reversal of fusion between instincts that accompanies maturity) manipulation (Donald & Atkins, 2016; Gillanders et al., 2014; Masuda & Tully, 2012). Adaptive self-regulation includes following one's values, needs, and life goals. Awareness, expression, acceptance of emotions, and non-evasive actions are characteristics of adaptive and flexible people who can improve their well-being (Panayiotou et al., 2021; Waldeck et al., 2021).

Another interesting study result is inconsistent assessment when participants evaluate their well-being. This likely indicates that participants were less flexible psychologically so that they rated negative stimuli more negatively than positive ones (Hayes et al., 2006). Hoffmann and Geisler's (2020) research explains that when individuals evaluate themselves without acceptance (open attitude), they assess perceived threats more pessimistically, thus experiencing higher perceived stress. Therefore, increasing psychological flexibility in order to develop an open, accepting, and curiously observing attitude is important. Psychological flexibility can help address the COVID-19 pandemic's threats, in order to ameliorate stress and loneliness, thereby increasing well-being.

Consistent with the literature that states women are more likely to suffer from depression, anxiety, and stress (Eisenbeck et al., 2019; Panayiotou et al., 2017; Zhou et al., 2020), this study found that women tend to have higher stress, lower psychological flexibility, and lower well-being. Women tend to use strategies that aim to reduce emotions by avoiding sources of stress and being less active in dealing with problems directly (Matud, 2004). Women are also encouraged to be relatively more passive than

men, who are encouraged to be brave and manifest active, challenging behaviors. Using passive strategies to overcome stress prevents new learning experiences, for instance, that problems are not as great as imagined or out of control (Craske et al., 2014).

This study's findings differ from those of Tyndall et al. (2020), who found that single participants had the highest levels of psychological flexibility. Family support (not friends and close people) is considered more meaningful in providing certainty and security, a concrete need during a pandemic (Liu et al., 2020). Therefore, married participants with children had greater well-being. This study confirms the perception that the effect of COVID-19 on their lives was higher regardless of their study period during the pandemic. The higher the perception that Covid-19 affects their lives, the higher the stress, loneliness, and psychological inflexibility; as a result, the lower the level of well-being.

Interventions that target psychological flexibility and acceptance can reduce negative impacts during this difficult time (Smith et al., 2020). In other words, we can see psychological inflexibility as a risk factor and psychological flexibility as a protective factor (Jeffords et al., 2020). The Acceptance and Commitment Therapy (ACT) approach can assist in dealing with detrimental effects of existing pandemic risk factors by fostering psychological flexibility (Smith et al., 2020). Promoting psychological flexibility can also be accompanied by ways to avoid feeling lonely by seeking or obtaining social support during a pandemic (Vasileiou et al., 2019). Consistent with our findings, the proposed establishment of self-help-based interventions can help individuals obtain benefits that promote positive changes in psychological flexibility (Bohlmeijer et al., 2015).

Limitations and Future Directions

Further research should explore stressors typical of student life more deeply. Other psychological factors should also be further investigated. Adaptability, emotional regulation, and coping often overlap psychological flexibility. When these variables are also measured, psychological flexibility can be differentiated, helping us understand how individuals adapt to challenging situations. Follow-up interventions

with experimental methods might confirm this study's findings by determining the causality of the research variables. Thus, interventions can be precisely targeted to improve individual well-being.

This study's results deepen knowledge about mechanisms in the relationship between stress and well-being that can be mediated, especially by psychological flexibility. Governments, universities, and psychology practitioners can develop psychoeducation and training aimed at increasing psychological flexibility. This study supports results of previous studies that self-help-based ACT interventions can be conducted to promote psychological flexibility, in turn reducing stress and loneliness to maintain well-being. Intervention content or modules that promote psychological flexibility should be adapted to students' various sources of stress because identification of stressors is important in cultivating awareness and an open attitude (mindfulness). Intervention modules can also provide examples of flexible ways to maintain social interaction or support during a pandemic. Thus, levels of stress and loneliness can decrease, and psychological flexibility and well-being can increase.

Conclusion

Further research should explore stressors typical of student life more deeply. Other psychological factors should also be further investigated. Adaptability, emotional regulation, and coping often overlap psychological flexibility. When these variables are also measured, psychological flexibility can be differentiated, helping us understand how individuals adapt to challenging situations. Follow-up interventions with experimental methods might confirm this study's findings by determining the causality of the research variables. Thus, interventions can be precisely targeted to improve individual well-being.

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