Rev. Psicol. (Arequipa. Univ. Catól. San Pablo) / Año 2025 / Vol 15 / N° 1 / pp. 97-114
ISSN 2306-0565 versión impresa / ISSN 2311-7397 versión on line

The Endemic Stage of COVID-19: Mental Health and Wellbeing Among University Students

La etapa endémica de la COVID-19:
Salud mental y bienestar entre los estudiantes universitarios

Mitchell Clark
Mount Royal University, Calgary, Canada
https://orcid.org/0009-0001-8320-3537
Correspondencia: mclark@mtroyal.ca

Nick Rowley
University of Lethbridge, Calgary, Canada
https://orcid.org/0009-0002-7011-7223
Correo electrónico: rickrow@gmail.com

Marissa Whalley
Mount Royal University, Calgary, Canada
https://orcid.org/0009-0002-1714-1021
Correo electrónico: marissawhalleycounselling@gmail.com

Emilia Mehrabi
Mount Royal University, Calgary, Canada
https://orcid.org/0000-0001-9837-4956
Correo electrónico: emehr942@mtroyal.ca

Abstract
This study was intended to examine a range of independent predictor variables that may impact the independent outcome variables of stress, anxiety, depression, and wellbeing. The predictor variables examined in this study are workload, loneliness, social support, physical health, compassion, financial stress, sense of meaning in life, and substance use. This study employed a correlational design

https://doi.org

and was conducted at Mount Royal University during Fall 2022 and Winter 2023. Survey ratings were collected from 384 students from the participant pool of students taking an introductory psychology course. Participants completed a range of surveys measuring stress, anxiety, depression, and wellbeing, as well as being examined in this study are workload, loneliness, social support, physical health, compassion, financial stress, sense of meaning in life, and substance use. Two correlation analyses were conducted between the variables. The study revealed several significant correlations between psychological constructs and well-being indicators. This study contributes valuable insights into the factors influencing mental health and well-being in a post-pandemic/endemic world. Future research could explore these relationships and develop targeted interventions to improve mental health outcomes in vulnerable populations.

Keywords: COVID-19, endemic, wellbeing, mental health, stress, depression, anxiety.

Resumen

Este estudio se propuso examinar diversas variables independientes/predictoras que pueden afectar las variables independientes/de resultado del estrés, la ansiedad, la depresión y el bienestar. Las variables predictoras examinadas en este estudio son la carga de trabajo, la soledad, el apoyo social, la salud física, la compasión, el estrés financiero, el sentido de la vida y el consumo de sustancias. Este estudio empleó un diseño correlacional y se llevó a cabo en la Universidad Mount Royal durante el otoño de 2022 y el invierno de 2023. Se recopilaron las calificaciones de 384 estudiantes del grupo de participantes de un curso introductorio de psicología. Los participantes completaron diversas encuestas que medían el estrés, la ansiedad, la depresión y el bienestar, y también se examinaron en este estudio la carga de trabajo, la soledad, el apoyo social, la salud física, la compasión, el estrés financiero, el sentido de la vida y el consumo de sustancias. Se realizaron dos análisis de correlación entre las variables. El estudio reveló varias correlaciones significativas entre los constructos psicológicos y los indicadores de bienestar. Este estudio aporta información valiosa sobre los factores que influyen en la salud mental y el bienestar en un mundo pospandémico/endémico. Las investigaciones futuras podrían explorar estas relaciones y desarrollar intervenciones específicas para mejorar los resultados de salud mental en poblaciones vulnerables.

Palabras clave: COVID-19, endémico, bienestar, salud mental, estrés, depresión, ansiedad.

Introduction

The mental health of university students has received increasing attention over the decade before the start of the COVID-19 pandemic (Mofatteh, 2021). Porru et al. (2020) used the previously developed effort-reward imbalance (ERI) model to show the determinants of mental health problems among students in Italy. The article aims to understand mental health among university students in Italians, how the ERI model and overcommitment fit with mental health, and how ERI and overcommitment explain gender differences. A total of 4760 university students were recruited for the study through online web forums. Two questionnaires were used in the study including the Kessler Psychological Distress Scale (K10) for mental health and the Effort-Reward Imbalance-Student Questionnaire (ERI-SQ) to assess how students perceived their work was being treated by professors and others. Results of the K10 scale show that 78.5% of respondents demonstrated some type of psychological distress. The ERI-SQ shows effort, reward, ERI and overcommitment to then be significantly associated with psychological distress.

A recent systematic literature review (Ribeiro et al., 2019) examined 13 articles on stress and quality of life among university students published between 2011 and 2015. Over 25,000 students were included in these peer-reviewed studies that were selected from a range of levels and disciplines. University students experienced high stress levels which undermined their quality of life. In particular, sleep problems and increased rates of depression were noted. Another review article included 41 studies published between 2000 and 2020 (Mofatteh, 2021). Data collection for these studies was completed before the declaration of the COVID-19 pandemic by the World Health Organization on March 11, 2020. Several risk factor themes are identified across the articles reviewed. The risk factors were grouped under six themes; psychological, academic, biological, lifestyle, social, and financial factors. The specific issues that were included in each of the themes were provided in the article and formed the basis of the constructs that are being used in the current study.

There was then concern over the mental health of university students before the onset of COVID-19. Following the declaration of the pandemic, the alarm over students' wellbeing intensified due to the move to online learning reduced connection with others.

Student Health and Wellbeing During the COVID-19 Pandemic

There has been a substantial number of studies focused on the mental health and quality of life of university students during the COVID-19 pandemic in various countries. Guo et al. (2021), found gender differences in social support with increased levels among female students and found students reported higher levels of depression, anxiety, and stress. Ali et al. (2022) completed a study in Bangladesh which focused on students in health and rehabilitation programs. The researchers

found high levels of moderate to severe mental health symptoms together with suicidal ideation and attempts. In Ethiopia, Simeon et al. (2021) found high levels of stress, anxiety and depression (SAD) among students, particularly in females of younger age in non-health-related programs. In the U.S., Stamatis et al. (2022) looked at the link between the deterioration in mental health associated with COVID-19 over time. They found elevated levels of SAD and substance use during the pandemic remained relatively constant. They noted limited confidence in the government response to COVID-19 was associated with an increase in depressive symptoms. While the patterns of impact do vary between these studies, they demonstrate a consistent focus on increasing mental health concerns among university students.

Moawad (2020) noted the sudden move to online learning and an increase in uncertainty and overall stress among students at King Saud University in Saudi Arabia, particularly during the examination period. Another study, conducted in Spain, assessed stress, anxiety and depression among health sciences students a year following the start of the COVID-19 pandemic. While 13.1% were assessed as stressed, 71.4% demonstrated anxiety, and 81% were evaluated as depressed (Marcén-Román et al, 2021). A study looking at these variables across four universities in Ecuador again found high levels of stress, anxiety, and depression among undergraduates (Rodríguez-Hidalgo et al., 2020). Maia and Dias (2020) assessed these variables in Brazil. They aimed to examine the levels of anxiety, depression, and stress both before and during the pandemic. 619 participants were given a socio-demographic questionnaire as assessed by the Anxiety, Depression, and Stress scales. As expected, the evaluations conducted during the pandemic received responses equating to a higher level of anxiety than evaluations that were conducted before the start of the pandemic. The results of this study indicate a general increase in anxiety and depression after the pandemic began.

A study conducted in California examined stress among students before and after campus closure (von Keyserlingk et. al, 2020). Results showed an increase in study-related stress although those students reporting poorer mental health had increased levels of stress as compared with students indicating stronger self-efficacy. Research completed at a university in Texas (Wang et. al., 2020) found almost 50% of the participants displayed moderate-severe depression while over 70% were determined to have increased stress/anxiety levels. Under 50% were coping effectively. The authors indicated their alarm over the number of students who were having suicidal thoughts, and symptoms of depression and anxiety. Another study conducted by the Student Experience in the Research University (SERU) Consortium at their member universities across the U.S. focused on those who were the first generation from their families to attend university (Soria et al, 2020). Of the 28,198 students who participated, there were 7,233 who identified as first-generation students. The

results indicated that these students experienced financial and emotional adversity as they were almost twice as frequently worried about paying for their education. These students were more often living in unsafe conditions due to substance and/or some form of personal abuse, as well as food and housing insecurity. These risk factors certainly contributed to their reported higher rates of mental health disorders than their continuing generation peers.

A cross-sectional survey was carried out with 7228 university students in Poland. Data was collected at five points during March and April of 2020 (Debowska et al., 2020). Results indicated a significant rise in levels of depression as the pandemic progressed. Females showed higher ratings of depression, anxiety, and stress than males, as did students in the 18-24 age group in comparison to students 25 years of age and over. It was also noted that psychology students had the lowest ratings on depression and anxiety. A study done in Spain (Serrano Sarmiento et al., 2021) examining resilience among university students during the pandemic found the highest levels were seen among males who were over 25 which appears to mirror the findings from Poland. Serrano Sarmiento et al. (2021) also found health science students adapted better to the pandemic. In addition, they noted that students living with roommates or on their own; demonstrated stronger resilience than those living with their parents.

In Brazil, Maia and Dias (2020) compared stress, anxiety, and depression results from a group of students administered the Depression, Anxiety, and Stress Scales (Antony et al., 1998; Lovibond, & Lovibond, 1995) (DASS-21) before the onset of the pandemic with the results on the same measure from a group of equivalent age. As anticipated, the latter group showed a generalized increase in anxiety and depression scores. Another comparison between students assessed before and during the pandemic was conducted at the University of Amsterdam (Koelen et al., 2021). There were 683 students in the sample and significant increases were found in alcohol use by both males and females. Loneliness also demonstrated a significant increase. It was noted that the increases in depression and anxiety were reduced when emotional support was provided.

Elharake et al. (2022) completed a systematic review of 16 studies focused on the impact of COVID-19 on the mental health of children and college students. The authors concluded that college students experienced increased levels of depression, anxiety, fatigue, and distress during the pandemic than before it began. They also noted that rural location, low socioeconomic status, and having a friend working as a health care worker increased the risk of experiencing mental health difficulties.

Endemic Stage of COVID-19

While there are ongoing concerns regarding COVID-19, as well as recognition that it will continue to circulate in communities around the world, the lockdowns and

other measures associated with COVID-19 appear to have ended in Canada. It is unclear, however, whether there will be ongoing mental health consequences relating to the pandemic. The fear and losses people experience and other life changes required may provide ongoing difficulties and symptoms for university students. The proposed study is intended to evaluate how students are managing to adjust to a post-COVID-19 pandemic or, the endemic phase.

Objectives

The current study aims to understand how different aspects of mental health are being impacted by a wide variety of factors in a COVID-19 post-pandemic/endemic world. Previous research has focused on other aspects of mental health like meaning in life (Arslan et al., 2020) or the relationship between physical ailments and mental health (Edlund et al., 2022). The present study uses a different model, similar to the one used in Casa et al. (2014) article which combines a series of life domains to understand their association with subjective well-being. In using such a model, future research can then be better aimed at investigating how the strongest predictors for mental health function following a pandemic.

Specifically, the study is intended to examine a range of independent/predictor variables that may impact the independent/outcome variables of stress, anxiety, depression, and wellbeing. The predictor variables examined in this study are workload, loneliness, social support, physical health, compassion, financial stress, sense of meaning in life, and substance use.

Methods

Design

The study used a correlational design to determine the relationship between the variables included in the study.

Participants

A total of 384 students were recruited from the participant pool of students taking an introductory psychology course at Mount Royal University. There were 273 females and 97 males. Eight of the participants identified as non-binary and four preferred not to say. There was one missing value within the gender category. The ages of the participants ranged from 17 to 44 while the average age was 20.55.

Instruments

A variety of surveys were administered including:

UCLA Loneliness Scale (Version 3 - UCLALS) (Russell, 1996): The UCLALS is a 20-item survey that employs a 4-point Likert scale. A higher score indicates increased levels of loneliness.

Compassion for Others' Lives Scale (COOL scale) (Chang et al., 2014): The COOL scale is divided into an empathy scale and an alleviate suffering scale each of which is 13 items in which responses are made on

a 7-point Likert scale. The full-scale score is also reported.

Meaning in Life Questionnaire (Steger et al., 2006): The Meaning in Life questionnaire is a 10-item designed to measure two dimensions of meaning in life: "presence of meaning" and "search for meaning". Participants respond using a 7-point Likert scale.

Physical Health Questionnaire (Schat et al., 2005): This questionnaire is a 15-item survey using a 7-point Likert-like survey in which higher scores indicate increased health problems.

Financial Stress Scale – College Version (Northern et al., 2010): This scale provides 22 items and employs a 4-point Likert scale.

Academic Workload Scale (Thuraiselvam, & Thang, 2015): This scale includes a range of item types including 3, 4 and 5-point ratings on Likert items. The ratings for two of the variables measured on the scale ("perceived academic workload" and "perceived difficulty of tasks") were collected and reported. In addition, "Perceived Mental Health" ratings were collected and reported separately.

Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988; Zimet et al., 1990): The MSPSS includes 12 items rated on a 7-point Likert scale. As well as the full-scale score, the three subscales ("significant other", "Family" and "Friends") were measured.

Substance use measure (Rogers et al., 2020): This scale was made up of three items ("alcohol", "cigarette" and "cannabis") using a 5-point Likert scale.

Personal Wellbeing Index: 5th Edition (PWI-A) (International Wellbeing Group, 2013): As well as "satisfaction with life as a whole", satisfaction across eight life domains were rated using an 11-point Likert scale.

Depression, Anxiety, Stress Scales (DASS-21) (Antony et al., 1998; Lovibond, & Lovibond, 1995): The 21-item version of the DASS was administered, which employed a 4 -point Likert scale.

In addition, there is a demographic form to collect gender, age, year of study and program or discipline.

Procedure

Following reading the consent form and the students' agreement to continue, participants filled out a basic demographics form, followed by various questionnaires presented in a random order including the COOL scale, the Multidimensional Scale of Perceived Social Support, the Substance Use Measure, the UCLA Loneliness Scale, the Patient Health Questionnaire 9-item Scale, Financial Wellness scale, the Depression, Anxiety, and Stress Scale, the Academic Workload Scale, and the PWI-A.

Ethics

This study was approved by the University Human Research Board at Mount Royal University.

Results

Descriptive Statistics

A total of 421 responses were collected using Qualtrics, however, only 383 were included in the current study as incomplete forms were not included. Of these 383 responses, a large majority were female (71.28%), 20 years old (36.56%), in their first year of study (56.92%), and enrolled in the psychology program (28%). Descriptive statistics for each of the PWI-A items were recorded (Table 1).

Table 1.
Descriptive Statistics for PWI-A

PWI-A	Mean	Standard Deviation	Shapiro-Wilk Test of Normality
Life as a Whole	6.45	1.97	0.95, $p < .001$
Standard of Living	7.13	2.05	0.94, $p < .001$
Health	6.42	2.25	0.96, $p < .001$
Achieving in Life	6.35	2.20	0.95, $p < .001$
Personal Relationships	6.67	2.29	0.94, $p < .001$
Safe you Feel	7.88	2.12	0.87, $p < .001$
Part of Community	6.35	2.43	0.95, $p < .001$
Future Security	6.24	2.28	0.96, $p < .001$
Spirituality/Religion	6.97	2.50	0.92, $p < .001$

Results of the Substance Use Measure indicate the majority of participants were pre-COVID-19 alcohol users (47.52%), while the majority of Cigarette (83.03%) and Cannabis (55.88%) users were COVID-19 Abstainers. Additional descriptive statistics were recorded for the UCLA (M= 47.95; SD= 11.59), COOL (M= 11.32; SD= 1.63), and the Financial Wellness (M= 37.34; SD= 12.95) Scales were also recorded. Finally, descriptive statistics for subscales used in the Depression, Anxiety, Stress, Academic Workload, Meaning in Life, and MSPSS Scales were recorded as well (Table 2). The Academic Workload Scale also reported the total number of subjects in the current semester for the majority of participants was four (40.99%), with the majority spending 11 to 15 hours in lectures per week (44.91%), and six to 10 hours spent for self-study per week (49.61%). The Patient Health Questionnaire showed the average length of colds caught lasted 3 days (21.93%), while an average of four hours were directed towards exercising (18.59%).

Table 2.
Descriptive Statistics for MSPSS, COOL, Depression, Anxiety, and Stress, Meaning in Life, Academic Workload Scale, and the Patient Health Questionnaire

Scale	Mean (*M* =)	Standard Deviation (*SD* =)
MSPSS	5.09	1.29
Significant Other Subscale	5.32	1.74
Family Subscale	4.88	1.70
Friends	5.06	1.62
COOL	11.32	5.32
Empathy Subscale	5.53	0.92
Alleviate Suffering Subscale	5.79	0.80
DASS		
Depression	7.55	6.08
Anxiety	6.74	5.54
Stress	10.10	4.97
Meaning in Life		
Presence of Meaning	22.07	6.59
Search for Meaning	25.61	6.38
Academic Workload		
Perceived Mental Health	2.38	0.92
Perceived Academic Workload	3.26	0.76
Difficulty of Tasks	3.35	0.71
Patient Health Questionnaire		
General Health Stressors	43.67	12.64

Correlations

Two separate correlation analyses were conducted between the variables. One bidirectional correlation analysis was conducted between items on the PWI-A and the UCLA, MSPSS, Academic Workload, Meaning in Life, and Financial Stressor Scales (Table 3).

Table 3.
Correlations

PWI-A	Life as a Whole	Standard of Living	Health	Achievement in Life	Personal Relations	Safe you Feel	Part of Community	Future Security	Spirituality/ religion
UCLA Loneliness	-0.47***	-0.28***	-0.33**	-0.38***	-0.59***	-0.34***	-0.49***	-0.34***	-0.23***
Multidimensional Scale of Perceived Social Support (MSPSS)									
MSPSS	0.40***	0.28***	0.26***	0.28***	0.54***	0.32***	.0.43***	0.24***	0.11*
Significant Other	0.27***	0.04	0.12*	0.18***	0.51***	0.20***	0.24***	0.13*	0.05
Family	0.31***	0.36***	0.30***	0.23***	0.30***	0.28***	0.37***	0.27***	0.15**
Friends	0.34***	0.25***	0.16**	0.23***	0.45***	0.26***	0.39***	0.15**	0.05
Compassion For Others' Lives Scale (COOL)									
COOL	0.07	0.01	0.03	0.02	0.07	0.08	0.08	0.03	0.13*
Empathy	0.09	-0.02	0.02	0.01	0.07	0.04	0.06	0.02	0.12*
Alleviate Suffering	0.05	0.04	0.04	0.02	0.07	0.11*	0.09	0.03	0.13*
Workload									
Perceived Academic Workload	0.07	-0.06	0.01	0.06	0.06	-0.01	0.04	0.05	-0.07
Difficulty of Tasks	-0.03	-0.13*	-0.10	-0.07	-0.05	-0.01	0.01	-0.08	-0.09
Meaning in life									
Presence of Meaning	0.42***	0.21***	0.30***	0.44***	0.33***	0.23***	0.27***	0.42***	0.29***
Search for Meaning	-0.06	0.04	0.08	0.02	-0.04	0.10	0.09	0.03	0.02
Financial stress									
Financial	0.18***	-0.35***	-0.16**	-0.19***	-0.11*	-0.28***	-0.25***	-0.23***	0.12*
Perceived Mental and Physical Health									
Preceived Mental Health	0.53***	0.33***	0.43***	0.43***	0.41***	0.34***	0.31***	0.35***	0.32***
General Health	0.16**	0.21***	-0.24**	-0.10	-0.07	-0.25***	0.20***	-0.12*	-0.08
Substance Use									
Alcohol	-0.03	-0.05	-0.01	0.01	-0.01	-0.05	0.02	0.07	0.04
Cigarette	-0.01	-0.00	-0.06	0.02	-0.01	-0.03	0.03	0.04	-0.01
Cannabis	-0.01	0.04	0.05	0.03	-0.05	-0.05	0.04	0.04	-0.04

DASS-21									
Depression	-0.52***	-0.35***	-0.36**	-0.43***	-0.41***	-0.38***	-0.40***	-0.22***	-0.22***
Anxiety	-0.26***	-0.28***	-0.26**	0.25***	-0.22***	-0.36***	-0.28***	-0.15**	-0.15**
Stress	-0.26***	-0.25***	-0.19**	0.35***	-0.14**	-0.24***	-0.20***	-0.14**	-0.14**

Note: * p< .05; ** p< .01; *** p< .001

The study's results indicate various significant correlations between different psychological constructs and well-being indicators. Below is a summary of the key findings:

Loneliness & Well-Being: Higher levels of loneliness, as measured by the UCLA Loneliness scale, are associated with lower scores across multiple domains of well-being, including life as a whole, standard of living, health, achieving in life, personal relations, feeling safe, being part of a community, and future security.

Social Support & Well-Being: Perceived social support, as measured by the Multidimensional Scale of Perceived Social Support (MSPSS), shows positive correlations with well-being indicators. Higher levels of social support from significant others, family, and friends are associated with better well-being outcomes.

Compassion & Well-Being: Compassion for others' lives, as measured by the COOL scale, shows positive correlations with empathy and the ability to alleviate suffering, suggesting that compassionate attitudes may contribute to well-being.

Workload & Wellbeing: Perceived academic workload, particularly the perceived difficulty of tasks, shows a negative correlation with well-being, indicating that a higher perceived workload may impact well-being negatively.

Meaning in Life & Well-Being: The presence of meaning in life is positively correlated with various aspects of well-being, such as life satisfaction, standard of living, health, achieving in life, personal relations, feeling safe, being part of a community, future security, and spiritual/religious beliefs.

Financial Stress & Well-Being: Financial stress shows negative correlations with several well-being indicators, implying that financial difficulties may impact overall well-being negatively.

Physical and Mental Health & Well-Being: Perceived physical and mental health is positively correlated with general health and negatively correlated with substance use, suggesting that better-perceived health is associated with higher well-being.

Depression, Anxiety, and Stress & Well-Being

Depression, anxiety, and stress levels, as measured by the DASS-21, show negative correlations with various aspects of well-being, indicating that higher levels of these psychological distress symptoms are associated with lower levels of well-being across different domains.

Table 4.
Depression, Anxiety, and Stress & Well-Being

DASS-21	Depression	Anxiety	Stress
UCLA Loneliness	0.51***	0.30***	0.27***
Multidimensional Scale of Perceived Social Support (MSPSS)			
MSPSS	-0.33***	-0.19***	-0.08
Significant Other	-0.21***	-0.08	0.04
Family	-0.31***	-0.19***	-0.13*
Friends	-0.24***	0.63***	-0.10
Compassion for Others' Lives Scale (COOL)			
COOL	0.06	0.11*	0.17***
Empathy	0.09	0.14**	0.20***
Alleviate Suffering	0.02	0.08	0.12*
Workload			
Perceived Academic Workload	0.06	0.08	0.18***
Difficulty of Tasks	0.15**	0.10*	0.23***
Meaning in Life			
Presence of Meaning	-0.42***	-0.23***	0.20***
Search for Meaning	0.06	0.05	0.11*
Financial stress			
Financial	0.30***	0.34***	0.35***
Perceived Physical and Mental Health			
Perceived MH	-0.58***	0.42***	-0.45***
General Health	0.40***	0.53***	0.46***
Substance Use			
Alcohol	0.00	-0.01	-0.02
Cigarettes	-0.080	-0.10*	-0.10
Cannabis	-0.05	-0.11*	-0.09

Note: * p< .05; ** p< .01; *** p< .001

Overall, the study highlights the complex interplay between various psychological factors and well-being indicators, underscoring the importance of addressing social support, meaning in life, mental health, and stress management in promoting overall well-being.

Discussion

The current study sought to examine the impact of various factors on mental health in a post-pandemic/endemic world. By exploring a wide range of predictor variables such as workload, loneliness, social support, physical health, compassion, financial stress, sense of meaning in life, substance use, and gender, this study aimed to shed light on the complex relationships between these factors and outcomes like stress, anxiety, depression, and well-being.

The results of the study revealed several significant correlations between different psychological constructs and well-being indicators. Loneliness was found to be negatively associated with multiple domains of well-being, suggesting that higher levels of loneliness are linked to lower overall well-being. On the other hand, perceived social support from significant others, family, and friends showed positive correlations with well-being indicators, indicating that stronger social support networks are associated with better well-being outcomes.

Compassion for others' lives was also positively correlated with empathy and the ability to alleviate suffering, highlighting the potential positive impact of compassionate attitudes on well-being. Additionally, perceived academic workload was negatively correlated with well-being, suggesting that higher perceived workload may have a detrimental effect on overall well-being.

The presence of meaning in life was positively correlated with various aspects of well-being, while financial stress showed negative correlations with well-being indicators. Furthermore, perceived physical and mental health were positively correlated with general health and negatively correlated with substance use, emphasizing the importance of maintaining good health for overall wellbeing.

Depression, anxiety, and stress levels were negatively correlated with different domains of well-being, indicating that higher levels of these psychological distress symptoms are associated with lower levels of well-being. These findings underscore the complex interplay between various psychological factors and well-being indicators, emphasizing the need to address social support, meaning in life, mental health, and stress management to promote overall wellbeing.

In conclusion, this study contributes valuable insights into the factors influencing mental health and well-being in a post-pandemic/endemic world. Future research could further explore these relationships and develop targeted interventions to improve mental health outcomes in vulnerable populations.

Financing

This research received no grant for any funding agency in the public, commercial, or not-for-profit sectors.

Conflicts of interest

The authors declare that there is no conflict of interest.

References

Ali, M., Uddin, Z., Amran Hossain, K. M., Uddin, T. R. (2022). Depression, anxiety, stress, and suicidal behavior among Bangladeshi undergraduate rehabilitation students: An observational study amidst the COVID-19 pandemic. *Health Science Reports*, *95*(2), e549. https://doi.org/10.1002/hsr2.549. PMID: 35284647; PMCID: PMC8905129

Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment*, *10*(2), 176-181. https://dx.doi.org/10.1037/1040-3590.10.2.176

Arslan, G., Yildirim, M., Karatas, Z., Kabasakal, Z., & Kilinc, M. (2020). Meaningful living to promote complete mental health among university students in the context of the COVID-19 pandemic. *International Journal of Mental Health and Addiction*, *20*, 930-942. www.doi.org/10.1007/s11469-020-00416-8

Chang, J.-H., Fresco, J., & Green, B. (2014). The Development and Validation of the Compassion of Others' Lives Scale (The COOL Scale). *International Journal of Humanities and Social Science*, 4(5), 33-42.

Coyne, C., Ballard, J. D., & Blader, I. J. (2020). Recommendations for future university pandemic responses: What the first COVID-19 shutdown taught us. *PLOS Biology*. https://doi.org/10.1371/journal.pbio.3000889

Darling-Hammond, L., & Hyler, M. E. (2020). Preparing educators for the time of COVID... and beyond. *European Journal of Teacher Education*. https://doi.org/10.1080/02619768.2020.1816961

Edlund, K., Sundberg, T., Johansson, F., Onell, C., Rudman, A., Holm, L. W., Grotle, M., Jensen, I., Côté, P., & Skillgate, E. (2022). Sustainable University Life (SUN) study protocol for a prospective cohort study of modifiable risk and prognostic factors for mental health problems and musculoskeletal pain among university students. *BMJ Open*, *12*, e056489. www.doi.org/10.1136/bmjopen-2021-056489

Elharake, J. A., Akbar, F., Malik, A. A., Gilliam, W., Omer, S. B. 2022). Mental Health Impact of COVID-19 among Children and College Students: A Systematic Review. *Children Psychiatry and Human Development*, *54*(3), 913-925. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8747859/

Guo, Z., X., Bai, S., Minhat, H. S., Nazan, A. I. N. M., Feng, J., Li, X., Luo, G., Zhang, X., Feng, J., Li, Y., Si, M., Qiao, Y., Ouyang, J., & Saliluddin, S. (2021). Assessing social support impact on depression, anxiety, and stress among undergraduate students in Shaanxi province during the COVID-19 pandemic of China. *PloS One*, *16*(7), e0253891-e0253891. https://doi.org/10.1371/journal.pone.0253891

International Wellbeing Group (2013). *Personal Wellbeing Index*. 5th Edition. Australian Center on Quality of Life. http://www.acqol.com.au/instruments#measures

Koelen, J. A., Mansueto, A. C., Finnemann, A., de Koning, L., van der Heijde, C. M., Vonk, P., Wolten, N. E. Klein, A., Epskamp, S., & Wiers, R. W. (2021). COVID-19 and mental health among at-risk university students: A prospective study into risk and protective factors. *International Journal and Methods in Psychiatry Research*. www.doi.org/10.1002/mpr.1901

Lovibond, S. H., & Lovibond, P. F. (1995). *Depression Anxiety Stress Scales* [Database record]. PsycTESTS. https://dx.doi.org/10.1037/t01004-000

Maia, B. R., & Dias, P. C. (2020). Ansiedade, depressão e estresse em estudantes universitários: o impacto da COVID-19. *Estudos de Psicologia*, *37*, e200067. https://doi.org/10.1590/1982-0275202037E200067

Moawad, R. A. (2020). Online Learning during the COVID- 19 Pandemic and Academic Stress in University Students. *Journal for Multidimensional Education*, *12*(1Sup2), 100-107.

Mofatteh, M. (2021). Risk factors associated with stress, anxiety, and depression among university undergraduate students. *AIMS Public Health*, *8*(1), 36-65. https://doi.org/10.3934/publichealth.2021004

Northern, J. J., O'Brien, W. H., Goetz, P. W. (2010). The development, evaluation, and validation of a Financial Stress Scale for undergraduate students. *Journal of College Student Development*, 51(1), 79-92.

Pellegrini, M., Uskov, V., & Casalino, N. (2020). Reimagining and re-designing the post-COVID-19 higher education organizations to address new challenges and responses for safe and effective teaching activities. *Law and Economics Yearly Review Journal, 9*(1), 219-248. https://doi.org/10.2139/ssrn.3659062

Porru, F., Robroek, S. J. W., Bultmann, U., Protoghese, I., Campagna, M., & Burdorf. (2020). Mental health among university students: The associations of effort-reward

imbalance and overcommitment with psychological distress, *Journal of Affective Disorders*, *282*, 953-961. www.doi.org/10.1016/j.jad.2020.12.183

Ribeiro, I. J. S., Pereira, R., Freire, I. V., de Oliveira, B. G., Casotti, C. A., & Boery, E. N. (2019). Stress and Quality of Life Among University Students: A Systematic Literature Review. *Health Professions Education*, *4*(2), 70-77. https://doi.org/10.1016/j.hpe.2017.03.002.

Rodríguez-Hidalgo, A. J., Pantaleón, Y., Dios, I., & Falla, D. (2020). Fear of COVID-19, stress, and anxiety in university undergraduate students: A predictive model for depression. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.591797

Rogers, A., Shepherd, J., Garey, L., & Zvolensky, M. (2020). Psychological factors associated with substance use initiation during the COVID-19 pandemic. *Psychiatry Research*, *293*, 113407. https://doi.org/10.1016/j.psychres.2020.113407

Russell, D. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment*, *66*, 20-40. https://doi.org/10.1207/s15327752jpa6601_2

Schat, A. & Kelloway, K., & Desmarais, S. (2005). The Physical Health Questionnaire (PHQ): Construct Validation of a Self-Report Scale of Somatic Symptoms. *Journal of Occupational Health Psychology*, *10*, 363-381. https://doi.org/10.1037/1076-8998.10.4.363

Serrano Sarmiento, A., Sanz Ponce, R., & González Bertolín, A. (2021). Resilience and COVID-19. An analysis in university students during confinement. *Education Sciences*, *11*(9), 533.

Simegn, D. B., Yeshaw, Y., Yitayih, S., Woldegerima, B., & Dagne, H. (2021). Depression, anxiety, stress and their associated factors among Ethiopian University students during an early stage of COVID-19 pandemic: An online-based cross-sectional survey. *PloS One*, *16*(5), e0251670. https://doi.org/10.1371/journal.pone.0251670

Soria, K. M., & Stebleton, M. J. (2012). First-generation students' academic engagement and retention. *Teaching in Higher Education*, *17*(6), 673-685. https://doi.org/10.1080/13562517.2012.666735

Stamatis, C. A., Broos, H. C., Hudiburgh, S. E., Dale, S. K., & Timpano, K. R. (2022). A longitudinal investigation of COVID-19 pandemic experiences and mental

health among university students. *Brazilian Journal of Clinical Psychology*, *61*, 385-404. https://doi.org/10.1111/bjc.12351

Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The Meaning in Life Questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*, *53*, 80-93.

Thuraiselvam, S., & Thang, R. B. (2015). Factors that affect students' mental health: A study at Taylor's University School of Hospitality, Tourism and Culinary Arts. *Taylor's 7th Teaching and Learning Conference 2014 Proceedings*. Springer. https://doi.org/10.1007/978-981-287-399-6_1

von Keyserlingk, L., Yamaguchi-Pedroza, K., Arum, R., & Eccles, J. S. (2022). Stress of university students before and after campus closure in response to COVID-19. *Community Psychology*, *50*(1), 285-301. https://onlinelibrary.wiley.com/doi/full/10.1002/jcop.22561

Wang, X., Hegde, S., Son, C., Keller, B., Smith, A., & Sasangohar, F. (2020). Investigating mental health of US College students during the COVID-19 Pandemic: Cross-sectional survey study. *Journal of Medicine Internet Research*, *22*(9), e22817. https://doi.org/10.2196/22817

Zimet, G., Dahlem, N., Zimet, S., & Farley, G. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, *52*, 30-41. https://doi.org/10.1207/s15327752jpa5201_2

Zimet, G., Powell, S., Farley, G., Werkman, S., & Berkoff, K. (1990). Psychometric characteristics of the Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, *55*, 610-617. https://doi.org/10.1080/00223891.1990.9674095

Recibido: 26 de julio de 2024
Revisado: 19 de enero de 2025
Aceptado: 18 de febrero de 2025