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Mood And Quality Of Life During The COVID-19 Pandemic Of Buenos Aires University Students

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ABSTRACT
The onset of the 2019 coronavirus disease (COVID-19) pandemic in Buenos Aires brought about strict lockdown measures throughout the country. Many people were infected with SARS-CoV-2, including university students. This retrospective study, conducted from July to November 2021, aimed to assess the mood and quality of life of Buenos Aires university students during various phases of the pandemic. A total of 508 students participated, providing data on mood and quality of life before and during the two lockdown periods (March-December 2020 and April to July 2021), and the intervening periods. Results revealed significant declines in mood during the lockdown periods, with reductions in happiness, optimism, and quality of life. Women reported higher levels of stress, fatigue, depression, anxiety, fear of COVID-19, worry, and hostility compared to men, while older students (aged 25-35) exhibited heightened anxiety and stress levels compared to younger students (aged 18-24). Limitations of the study include the sample heterogeneity and the reliance on self-report measures. Despite these limitations, the study highlights the profound impact of the pandemic on mood and quality of life of university students in Buenos Aires, emphasizing the need for targeted interventions to support their mental wellbeing in future pandemics.

Keywords: COVID-19; mood; quality of life; immune fitness; students; Argentina

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Introduction

The onset of the 2019 coronavirus disease (COVID-19) pandemic in Buenos Aires prompted a series of strict lockdown measures, impacting the lives of many, including university students. From March 2020 to December 2020, Argentina experienced its first lockdown period, characterized by the closure of educational institutions, and the shutdown of non-essential facilities, such as cafes, restaurants, and gyms. Only essential establishments, such as pharmacies, supermarkets, and hospitals remained open. These measures, aimed at curbing the spread of the virus, forced individuals to adhere to various hygiene restrictions and remain confined to their homes, with

limited exceptions for essential activities like hospital visits or caregiving responsibilities for vulnerable individuals. Moreover, high risk individuals (i.e., people over 60 years of age, pregnant women, and patients with at least one of the following pathologies: chronic respiratory diseases, heart diseases, immunodeficiencies, and diabetics) or those infected with the coronavirus were placed under mandatory quarantine [Sagripanti et al., 2021; Cohen et al., 2020].

The sudden shift to online education posed significant challenges for university students, disrupting their daily routines and social connections. The closure of campuses deprived students of face-to-face interactions with peers and teachers, potentially increasing feelings of loneliness and isolation. Concurrently, uncertainties surrounding the duration of remote learning and the pandemic's trajectory led to increased levels of stress and anxiety among students, who had a hard time adjusting to the new, remote way of learning, while navigating personal and academic uncertainties.

From August 2020, the strict lockdown measures were somewhat alleviated, and during this phase (referred to as "social, preventive, and mandatory distancing"), people could leave home for recreational activities and visit previously forbidden places while adopting mandatory health measures (e.g., wearing a face mask, washing hands, attaining a minimum social distance of 1.5 m). However, the resumption of on-site activities, including university operations, remained inconsistent; universities continued with remote education.

There was another decrease in lockdown measures during the summer of 2021, however, after cases started increasing again, a second lockdown period from April to July 2021 was reinstated. The intermittent relaxation and reimplementation of lockdown measures highlights the unpredictable nature of the pandemic's course.

During the different lockdown periods of the pandemic, university students in Buenos Aires experienced a range of challenges, including disruptions in their studies, reduced social interactions, and ongoing health concerns. This aligns with research conducted in other countries worldwide, showing similar trends regarding the significant mental health challenges among university students during the pandemic. For instance, a cross-sectional study in the United States found increased levels of stress, anxiety, and depression among college students due to disruptions caused by the COVID-19 pandemic. [Son et al., 2020] Similarly, studies in Europe and Asia have highlighted the widespread psychological distress and its negative impact on students' academic performance and social lives [Zhou et al., 2020; Bäuerle et al., 2020]. Research in the Middle East, such as a study conducted in Saudi Arabia, also reported significant psychological consequences on the pandemic, including augmented levels of stress and anxiety among students [AlAteeq et al., 2020]. Additionally, findings from South Africa underscored similar trends, where students faced not only mental health challenges, but also academic and financial uncertainties during the lockdown periods [Conradie et al., 2020]. These global insights underscore the shared experiences of students worldwide, while also pointing towards the unique challenges faced by students in Buenos Aires, influenced by local conditions and responses to the pandemic. Therefore, it is crucial to examine their mood and quality of life during this time, in order to gain insight into the difficulties they encountered.

Methods

A retrospective online survey was conducted among Buenos Aires university students, between July 2021 and November 2021. The participants were invited via university email to complete the survey. They could participate in the study if they were 18 to 35 years old and students at the University of Buenos Aires. The study was approved by the Ethics Review Board of the University of the West of Scotland (approval code: 2021-16410-13697; date of approval: 18 May 2021) and informed consent was obtained from all participants. The survey was designed in QuestionPro and conducted in Spanish language. A detailed description of the survey methodology, the survey, and raw data can be found elsewhere [Hendriksen et al., 2022].

Demographic data including age and sex was collected. Mood was assessed with single-item ratings, including the items "stress", "anxiety", "depression", "fatigue", "hostility", "worry", "fear of COVID-19", "loneliness", "optimism", and "happiness". These were rated on scales ranging from 0 (absent) to 10 (extreme). In a similar way "being active" was assessed. The single-item scales have been validated previously [Verster et al., 2021] and have a high-test retest reliability [Verster et al., 2023]. Quality of life was rated on a scale ranging from 0 (very poor) to 10 (excellent). All assessments were made for (1) the period before COVID-19, (2) the first lockdown period (March – December 2020), (3) summer 2021 (January-March 2021, no lockdown), and (4) the second lockdown period (April 2021 to July 2021).

Data were analyzed with SPSS (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 29.0. Armonk, NY: IBM Corp.). Mean and standard deviation (SD) were computed for all variables. Within-subject comparisons of the mood assessments of the four timepoints were conducted with the Related-Samples Friedman's Two-Way Analysis of Variance by Ranks test. A Bonferroni's correct was applied, and differences were considered significant if $p < 0.017$. Between-group comparisons were conducted with the Independent Samples Mann-Whitney U Test. Differences between the groups (men versus women,

and 12-24 year olds versus 25-35 year olds) were considered significant, after Bonferroni's correction, if $p < 0.0125$.

Results

Data of n=508 students (153 men and 356 women) were included in the analysis. Their mean (SD) age was 22.5 (3.5) years old. The mood outcomes are summarized in Figure 1 and Table 1. The analysis revealed that, compared to before the pandemic, mood was significantly poorer during the two lockdown periods (see Figure 1A-1H). In line, students reported significantly reduced happiness, optimism, and quality of life during the two lockdown periods. For some of the mood items (e.g., fatigue, depression, loneliness), during the summer period without lockdown the ratings returned to 'before pandemic' levels. However, fear of COVID remained significantly higher during the summer no lockdown period.

Figure 2 and Table 2 summarize the mood ratings according to sex. For both men (N=149, 29.3%) and women (N=359, 70.7%), mood ratings were significantly poorer during the two lockdown periods. For some of the mood items, significant sex differences were observed. For stress and worry, ratings were already significantly higher among women than men before the pandemic. During the pandemic, women had significantly poorer (higher) ratings for stress, fatigue, depression, anxiety, fear of COVID-19, worry, and hostility. The differences were most pronounced during the two lockdown periods. No sex differences were reported in the effects on quality of life.

Figure 3 and Table 3 summarize the results according to age. A difference between the 18-24 year old group (N=391) and the 25-35 year old group (N=117) included anxiety, which was significantly higher during the first lockdown and subsequent summer period among 25-35 year old students. During the summer (no lockdown) period, 25-35 year old students also reported significantly higher ratings of stress and worry compared to 18-24 year old students. In line, quality of life, which was already significantly lower before the pandemic among 25-35 year old students, was also significantly lower during the summer period. No other significant differences were observed between the two age groups.

Discussion

This study underscores the significant impact the COVID-19 pandemic had on the mood of university students in Buenos Aires. Various factors, including lockdown restrictions, disrupted routines, and uncertainties about the future, likely contributed to this effect.

The disruption of routine presented a significant challenge to students' emotional wellbeing due to the closure of universities and the transition to online learning during the lockdown period. Before the pandemic, students relied on established routines and in-person interactions for their academic and social lives. However, the sudden shift to remote education required adapting to new modes of instruction, often involving unfamiliar technologies and disruptions to daily routines [Velásquez-Rojas et al., 2022; Bordoni et al., 2022]. This abrupt change likely caused feelings of disorientation and difficulty maintaining structure. Consequently, students may have experienced heightened levels of stress, anxiety, and a general decrease in mood [de la Fuente et al., 2021; Lucuix et al., 2021; Rice et al., 2023; Mendonça, 2020].

Uncertainty about the duration of remote learning measures and the lockdown situation may have further amplified students' emotional distress. (Torrente et al., 2021) further noted that young people in the Argentinean population, such as university students, experienced the highest emotional stain. They hypothesized that young people may perceive themselves as less susceptible to COVID-19 compared to older individuals. Consequently, the perceived cost-benefit ratio of the preventative measures may have seemed more disadvantageous for them. Despite the relatively high rate of adherence to COVID-19 restrictions, it's possible the compliance came with a high emotional toll.

Additionally, the closure of various facilities, including schools, bars, and restaurants following the lockdown resulted in reduced social interactions [Torrente et al., 2021]. University students, who were presumably accustomed to vibrant social lives on campus, may have struggled with feelings of loneliness and isolation due to the sudden lack of in-person contact with friends, classmates, and professors. Other studies [Rice et al., 2023; Mendonça, 2020] reported similar results among university students in Argentina. They highlighted the challenged faced by some students in adapting to online platforms after schools transitioned to remote education during the lockdown period.

Difficulties in adapting to changes in the learning format likely contributed to decreases in mood amongst students. Feeling overwhelmed or disengaged with remote learning may have led to frustration and stress, ultimately impacting students' overall mood and wellbeing. Moreover, studies noted a concerning increase in school dropouts [Rice et al., 2023; Mendonça, 2020]. This could stem from difficulties in adjusting to the online and remote learning environment, or it might be attributed to a general decline in mood caused by the pandemic. Nevertheless, the decision to drop out of school can further exacerbate negative emotions, creating a cycle that affects mood negatively.

Table 1. Mood, being active, and quality of life.

Overall assessments	Mean (SD)					Pairwise comparisons		
Time period	**B**	**L1**	**NL**	**L2**	**Overall**	**B vs L1**	**B vs NL**	**B vs L2**
Stress	5.3 (2.6)	6.2 (2.7)	4.9 (2.6)	6.0 (2.7)	<0.001*	<0.001*	0.010*	<0.001*
Fatigue	4.4 (2.6)	5.5 (2.8)	4.6 (2.7)	5.6 (2.8)	<0.001*	<0.001*	0.551	<0.001*
Depression	3.4 (2.8)	4.7 (2.9)	3.6 (2.8)	4.5 (2.9)	<0.001*	<0.001*	0.072	<0.001*
Loneliness	3.4 (2.9)	5.0 (3.0)	3.6 (2.9)	5.5 (3.1)	<0.001*	<0.001*	0.337	<0.001*
Anxiety	4.8 (2.7)	6.2 (2.9)	4.8 (2.6)	5.8 (2.8)	<0.001*	<0.001*	0.496	<0.001*
Fear of COVID-19	2.8 (3.1)	5.7 (2.8)	4.9 (2.9)	4.9 (2.9)	<0.001*	<0.001*	<0.001*	<0.001*
Worry	4.9 (2.6)	6.6 (2.6)	4.9 (2.7)	5.7 (2.7)	<0.001*	<0.001*	0.290	<0.001*
Hostility	3.1 (2.7)	4.3 (2.9)	3.2 (2.7)	3.9 (2.9)	<0.001*	<0.001*	0.593	<0.001*
Happiness	6.2 (2.4)	4.9 (2.3)	6.0 (2.3)	5.3 (2.3)	<0.001*	<0.001*	0.111	<0.001*
Optimism	5.7 (2.6)	4.6 (2.4)	5.6 (2.4)	5.2 (2.4)	<0.001*	<0.001*	0.029	<0.001*
Being active	4.4 (2.7)	3.9 (2.8)	4.3 (2.8)	4.0 (2.9)	<0.001*	<0.001*	0.063	<0.001*
Quality of life	7.2 (1.7)	5.3 (2.4)	6.9 (2.0)	5.8 (2.4)	<0.001*	<0.001*	0.002*	<0.001*

Mean, standard deviation (SD, between brackets), and p-values are shown. Significant differences between before the pandemic (B) and the other time periods are indicated by *. Pairwise comparisons were computed if the main effect was significant ($p < 0.05$), and considered significant if $p < 0.017$, after Bonferroni's correction for multiple comparisons. Abbreviations: B = before the pandemic, L1 = lockdown 1, NL = no lockdown, L2 = lockdown 2, COVID-19 = coronavirus disease 2019.

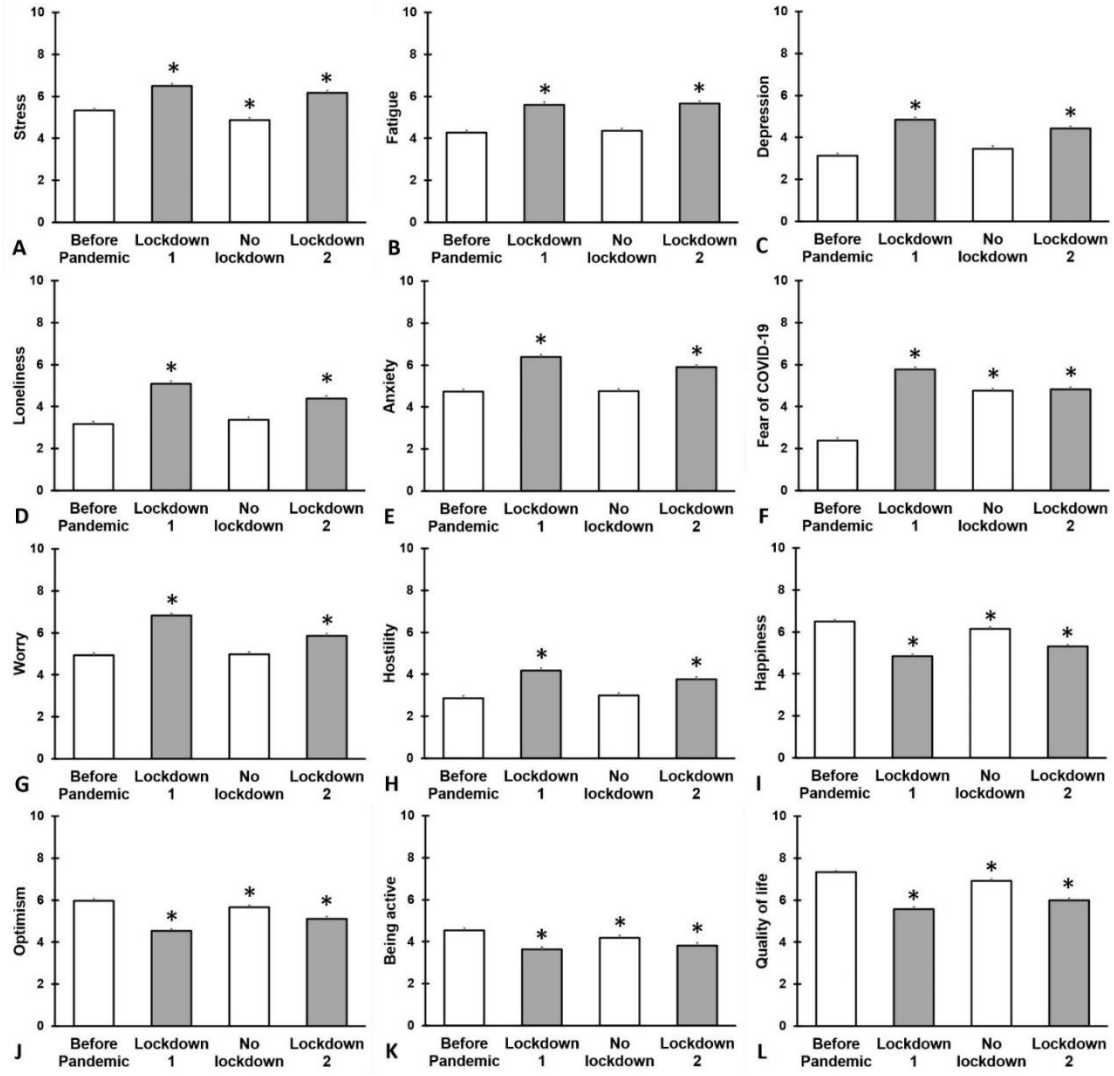

Figure 1. Mood assessments.

Mean and standard error are shown for (a) stress, (b) fatigue, (c) depression, (d) loneliness, (e) anxiety, (f) fear of COVID-19, (g) worry, (h) hostility, (i) happiness, (j) optimism, (k) being active, and (l) quality of life. Significant differences from 'before pandemic' ($p < 0.017$) are indicated by *.

Table 2. Mood, being active, and quality of life according to sex.

Time period	B		L1		NL		L2	
Sex	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**
Stress	4.3 (2.8)	5.7 (2.4) †	5.0 (2.8)	6.7 (2.5) †*	4.6 (2.7)	5.0 (2.6) *	5.1 (2.7)	6.3 (2.6) †*
Fatigue	4.0 (2.6)	4.6 (2.6)	4.9 (3.0) *	5.7 (2.7) †*	4.5 (2.7)	4.6 (2.8)	5.0 (2.9) *	5.9 (2.7) †*
Depression	3.1 (2.7)	3.5 (2.9)	4.0 (2.9) *	5.0 (2.9) †*	3.4 (2.8)	3.7 (2.8)	4.1 (3.0) *	4.6 (2.9) *
Loneliness	3.2 (2.9)	3.5 (2.9)	4.7 (3.0) *	5.1 (3.0) *	3.5 (2.9)	3.6 (2.9)	4.1 (3.0)	4.7 (3.1) *
Anxiety	4.4 (2.7)	5.0 (2.7)	4.8 (3.0) *	6.7 (2.6) †*	4.2 (2.6)	5.1 (2.6) †	4.9 (2.8)	6.1 (2.7) †*
Fear of COVID-19	3.0 (3.1)	2.7 (3.1)	5.2 (3.0) *	6.0 (2.7) †*	4.6 (2.9) *	5.1 (2.9) *	4.2 (2.9) *	5.2 (2.8) †*
Worry	4.3 (2.7)	5.1 (2.6) †	6.1 (2.6) *	6.8 (2.5) †*	4.4 (2.7)	5.2 (2.6) †	4.8 (2.8)	6.1 (2.6) †*
Hostility	2.8 (2.6)	3.2 (2.7)	3.9 (2.9) *	4.4 (2.9) *	3.3 (2.8)	3.2 (2.7)	3.4 (2.8)	4.1 (3.0) †*
Happiness	6.0 (2.5)	6.3 (2.4)	5.0 (2.5) *	4.9 (2.2)	6.0 (2.4)	6.0 (2.2)	5.3 (2.6) *	5.3 (2.2)
Optimism	5.4 (2.8)	5.8 (2.4)	4.8 (2.5) *	4.6 (2.4) *	5.6 (2.8)	5.6 (2.2) *	5.6 (2.6)	5.0 (2.3) *
Being active	4.2 (2.6)	4.5 (2.7)	3.9 (2.7) *	3.8 (2.8) *	4.3 (2.8)	4.2 (2.8) *	4.3 (2.8)	3.9 (2.9) *
Quality of life	7.1 (2.0)	7.3 (1.6)	5.2 (2.6) *	5.4 (2.3) *	7.1 (2.2)	6.9 (1.9) *	5.7 (2.7) *	5.8 (2.3) *

Mean and standard deviation (SD, between brackets) are shown. Significant differences between men and women (p < 0.0125, after Bonferroni's correction) are indicated by †. Significant differences between before the pandemic and the other time periods (p < 0.017, after Bonferroni's correction) are indicated by *. Pairwise comparisons were computed if the main effect was significant (p < 0.05). Abbreviations: B = before the pandemic, L1 = lockdown 1, NL = no lockdown, L2 = lockdown 2, COVID-19 = coronavirus disease 2019.

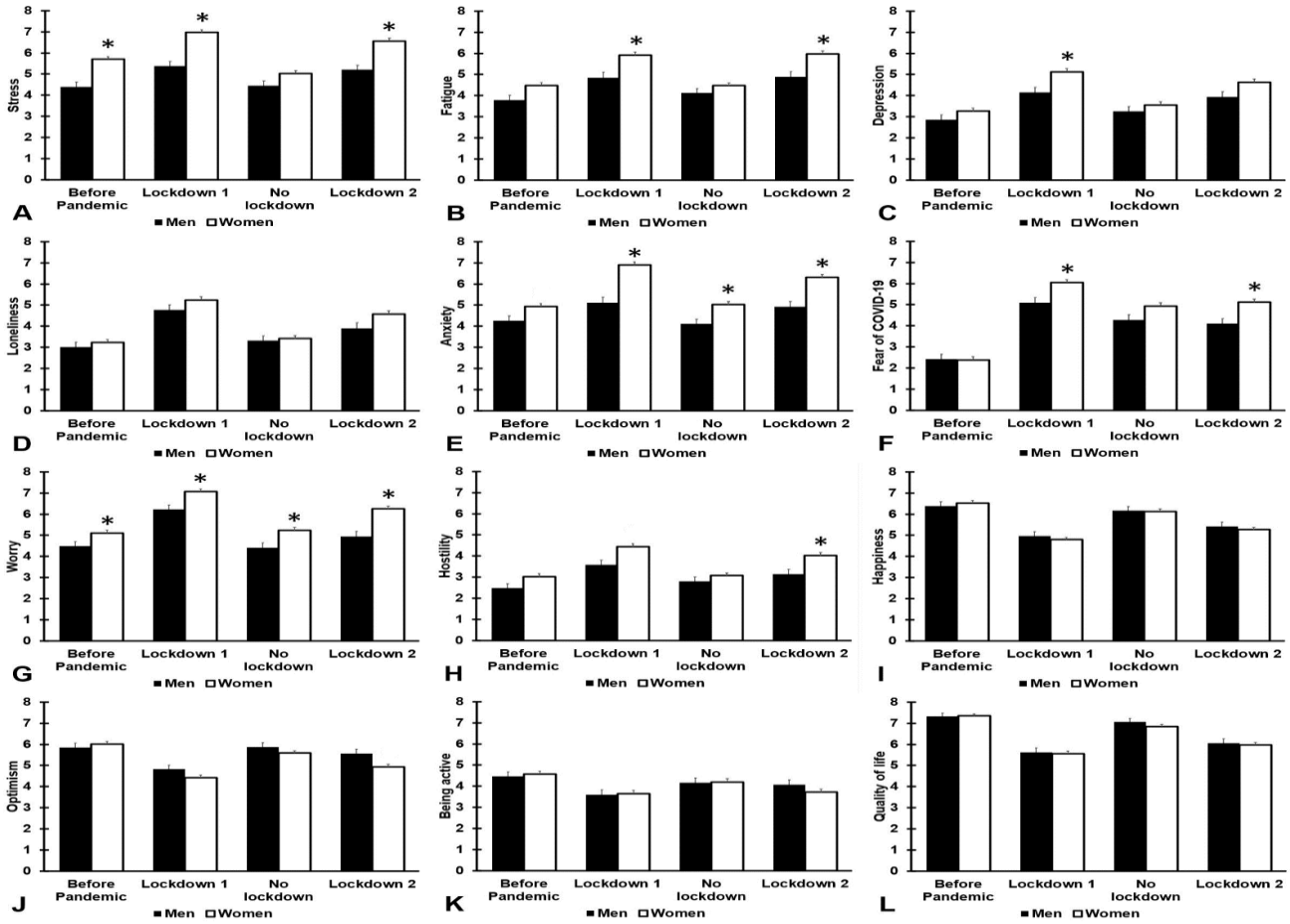

Figure 2. Mood assessments according to sex.

Mean and standard error are shown for (a) stress, (b) fatigue, (c) depression, (d) loneliness, (e) anxiety, (f) fear of COVID-19, (g) worry, (h) hostility, (i) happiness, (j) optimism, (k) being active, and (l) quality of life. Significant differences between men and women (p < 0.0125, after Bonferroni's correction) are indicated by *

Table 3. Mood, being active, and quality of life according to age group.

Time period	B		L1		NL		L2	
Age group (years)	**18-24**	**25-35**	**18-24**	**25-35**	**18-24**	**25-35**	**18-24**	**25-35**
Stress	5.2 (2.6)	5.7 (2.1)	6.4 (2.8) *	6.9 (2.5) *	4.7 (2.7)	5.4 (2.4) †	6.1 (2.7) *	6.4 (2.5) *
Fatigue	4.2 (2.6)	4.5 (2.4)	5.8 (2.7) *	5.1 (3.1)	4.4 (2.7)	4.4 (2.6)	5.7 (2.8) *	5.5 (2.9) *
Depression	3.1 (2.8)	3.3 (2.5)	4.8 (3.0) *	4.9 (3.0) *	3.5 (2.9)	3.4 (2.7)	4.5 (3.0) *	4.1 (3.0) *
Loneliness	3.3 (2.8)	2.7 (2.5)	5.2 (3.0) *	4.6 (3.1) *	3.4 (2.8)	3.2 (2.9)	4.6 (3.0) *	3.8 (3.1) *
Anxiety	4.6 (2.8)	5.2 (2.3)	6.2 (2.9) *	7.0 (2.5) †*	4.6 (2.7)	5.3 (2.4) †	5.8 (2.8) *	6.1 (2.5) *
Fear of COVID-19	2.4 (2.9)	2.4 (3.2)	5.6 (2.8) *	6.2 (2.9) *	4.7 (2.9) *	5.1 (2.9) *	4.7 (2.9) *	5.2 (3.2) *
Worry	4.9 (2.6)	5.2 (2.4)	6.7 (2.6) *	7.3 (2.3) *	4.8 (2.7)	5.6 (2.4) †	5.7 (2.7) *	6.3 (2.5) *
Hostility	2.9 (2.6)	2.9 (2.6)	4.2 (2.9) *	4.1 (3.0) *	3.0 (2.6)	2.9 (2.7)	3.8 (2.8) *	3.7 (3.1)
Happiness	6.5 (2.3)	6.6 (2.2)	4.9 (2.2) *	4.8 (2.3) *	6.2 (2.2)	6.0 (2.0)	5.3 (2.2) *	5.5 (2.1) *
Optimism	5.9 (2.5)	6.3 (2.0)	4.4 (2.3) *	4.9 (2.2) *	5.6 (2.3) *	5.9 (2.1)	5.0 (2.4) *	5.6 (2.3) *
Being active	4.4 (2.6)	4.9 (2.9)	3.6 (2.7) *	3.7 (2.7) *	4.2 (2.7)	4.0 (2.7) *	3.8 (2.8) *	3.8 (2.9) *
Quality of life	7.5 (1.6)	6.9 (1.9) †	5.6 (2.4) *	5.4 (2.4) *	7.1 (1.9) *	6.2 (2.1) †*	6.1 (2.3) *	5.7 (2.5) *

Mean and standard deviation (SD, between brackets) are shown. Significant differences between the 18-24 year old group and the 25-35 year old group ($p < 0.0125$, after Bonferroni's correction) are indicated by †. Significant differences between before the pandemic and the other time periods ($p < 0.017$, after Bonferroni's correction) are indicated by *. Pairwise comparisons were computed if the main effect was significant ($p < 0.05$). Abbreviations: B = before the pandemic, L1 = lockdown 1, NL = no lockdown, L2 = lockdown 2, COVID-19 = coronavirus disease 2019.

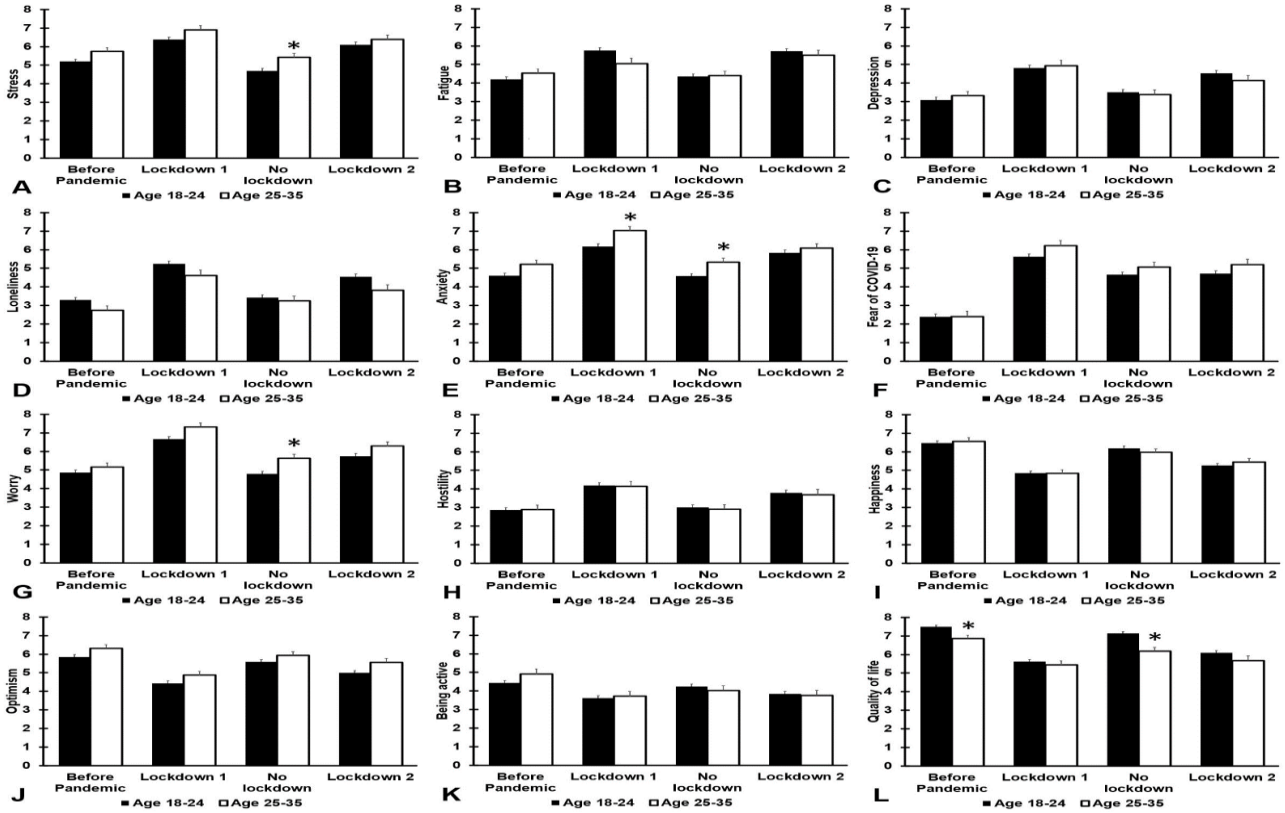

Figure 3. Mood assessments according to age group.

Mean and standard error are shown for (a) stress, (b) fatigue, (c) depression, (d) loneliness, (e) anxiety, (f) fear of COVID-19, (g) worry, (h) hostility, (i) happiness, (j) optimism, (k) being active, and (l) quality of life. Significant differences between young (18-24 year old) and older (25-35 year old) students ($p < 0.0125$, after Bonferroni's correction) are indicated by *.

Worries about health and safety may have played a role in heightening anxiety and stress levels among university students, which can be supported by the observed increase in fear of contracting COVID-19 in our dataset. Concerns about their own health may be at play, however, worries about the health of loved ones could also play a big role, exacerbating emotional strain. Son et al. [2020] found that one of the greatest stressors contributing to increased levels of stress, anxiety, and depressive thoughts among university students was the fear and worry about their own health and of that of their loved ones. This fear of illness and its potential consequences can add stress to an already challenging period.

This study further highlighted notable disparities in observed mood between sexes, with women exhibiting higher levels of stress, fatigue, depression, anxiety, fear of COVID-19, worry, and feelings of hostility compared to men. These findings align with existing research in this area within other countries [Cholankeril et al., 2023; Bermejo-Franco et al., 2022; Prowse et al., 2021]. For example, (Prowse et al., [2021)] who examined students at Carleton University, reported that females experienced more feelings of social isolation and loneliness during the pandemic induced changes in social networks. This is consistent with broader research indicating that females are more vulnerable to the negative effects of loneliness on mental health [McQuaid et al., 2021; de la Fuente et al., 2021]. Furthermore, loneliness has been shown to increases not only depressive symptoms, but also to increase perceived stress and anxiety while reducing levels of optimism, which is in line with our findings [Hawkley & Cacioppo, 2010; Dotsikas et al., 2023].

Our results suggest that men and women may be differently affected by the effects of the lockdown and may employ different coping mechanisms. For example, women may rely more heavily on their social networks compared to men, potentially explaining why women exhibited significantly higher levels of stress and depression. This hypothesis is supported by research from Shin et al. [Shin & Park, 2023], which indicates that women benefit more from social networks than men. Therefore, the sex differences observed in this study may be attributed, at least in part, to variations in social support systems among men and women during the lockdown period.

Furthermore, sex differences in mood may also result from underlying inequities in access to healthcare services, with women facing greater barriers in utilizing essential healthcare resources. Research conducted prior to the pandemic has noted sex differences in healthcare access in Argentina, which likely persisted during the COVID-19 pandemic [Nievas et al., 2021].

Moreover, women may have had more concerns about financial issues, potentially contributing to the observed differences in mood between sexes. This could be attributed to the higher rate of job loss experienced by women during the pandemic, particularly in occupations less compatible with remote work. Berniell et al. [2023] examined job losses and remote work capabilities in Latin American countries including Argentina and reported a negative association between the ability to work from home and job losses for both genders. However, while this correlation weakened over time for men, it persisted for women, suggesting a stronger link between job loss and remote work capabilities for women. This implies women in Argentina are more likely to be employed in jobs that cannot be performed remotely, or that they may face greater barriers to working from home compared to men. Although the study referenced was not conducted specifically on university students, given that many university students hold part-time jobs, it is reasonable to infer that the sex differences observed in this research also extend to university students' employment situations.

Our research further found significant differences in mood between age groups during the pandemic. Notably, while both age groups experienced heightened anxiety during the first lockdown and subsequent summer period, individuals aged 25-35 exhibited significantly higher levels of anxiety, stress, and worry compared to their younger counterparts.

The notion that both age groups experienced increased levels of anxiety aligns with previous research [Leonangeli et al., 2022], showing that Argentinian university students aged 16-35 experienced heightened levels of stress, anxiety, and depression at the onset of the lockdown period. They attributed these effects to a lack of information regarding the nature of the disease, its mortality rate, or possible treatment options during the early stages of the pandemic in Argentina. Similar findings have been reported by other studies done in Argentina, as well as in other countries, such as the United States, Germany, and Israel, where younger individuals experienced heightened emotional distress following the onset of the pandemic [Lucuix et al., 2021; Bäuerle et al., 2020; Best et al., 2023; Birditt et al., 2021; Adzrago et al., 2022; Laufer & Bitton, 2021].

Young individuals may experience increased levels of anxiety due to the closure of universities, having to move back home, lessened interactions with peers, but also concerns about the health of loved ones [Best et al., 2023; Birditt et al., 2021]. López Steinmetz et al. [2021] suggested that young individuals may face increased levels of anxiety due to their reliance on socialization and community connections outside their homes, which were significantly disrupted by the pandemic. Additionally, concerns about academic performance and potential (part-time) job loss among university students may exacerbate emotional distress during this period [López Steinmetz et al., 2021]. Furthermore, factors such as limited outdoor activities,

living conditions, and disrupted routines have also been identified as significant contributors to emotional distress among young individuals during the pandemic. Despite limited data on mood differences among specific age groups, Mehrabadi et al. [2023] found that individuals aged 26-35 showed the greatest increase in seeking help for mental health disorders during the lockdown in California. They attribute these findings to factors such as caring for and financially supporting younger family members, as well as concerns about the wellbeing of older family members. Financial instability resulting from unemployment, job changes, or business cutbacks likely contributed to heightened feelings of anxiety and depression.

Pieh et al. [2020] examined age-related disparities among Austrian individuals during the pandemic. Their research, contrary to our findings, revealed that individuals aged 18-24 exhibited the highest anxiety scores, followed by those under the age of 35, with those aged 65 and above being least affected. Pieh et al., [2020] suggested that uncertain working conditions and subsequent financial concerns may contribute to these results. Additionally, they propose that younger individuals may experience the impact of the lockdown restrictions more significantly. This aligns with a Canadian study by Nwachukwu et al. [2020], which indicated that individuals under the age of 25 were particularly affected by the lockdown period. They found that, aside from threats to academic, social, occupational, and financial prospects following the pandemic, increased time spent on social media by this group may expose them to more pandemic-related news, exacerbating emotional distress.

These varying findings regarding the age-related impact of the COVID-19 pandemic highlight that many factors influence individuals' emotional wellbeing and mood, which may vary depending on geographical location and the specific restrictions imposed within each country. Therefore, to try and understand why university students in Buenos Aires showed different mood patterns across age groups, a few theories were explored. One possible explanation is the socioeconomic context in Argentina [Rubinstein et al., 2023]. Before the pandemic, Argentina was already struggling with an economic crisis, facing high unemployment rates and inflation. The national government introduced economic measures to combat these issues, however the pandemic disrupted the efforts and exacerbated the existing economic problems as public health became a priority. The economic instability and financial crises may have disproportionately affected the 25-35 year old students, leading to heightened levels of worry and stress regarding job security, access to necessities, and financial stability [Romo & Ojeda-Galaviz, 2020]. Lucuix et al., [2021] identified unemployment as a factor leading to greater psychological vulnerability among Argentinian individuals during the COVID-19 pandemic. Moreover, it is possible that the older students may be more concerned with their health, the possibility of contracting the COVID-19 virus, and the challenges within Argentina's healthcare system. Limited resources, overcrowded hospitals, and difficulties accessing healthcare services could have exacerbated health-related concerns, further impacting the mental health of these students [Ramacciotti, 2021]. Also, they may be more concerned with the health and wellbeing of their loved ones.

Our results indicated that overall quality of life for those aged 25-35 was significantly lower compared to those aged 18-24 already before the onset of the pandemic. This may be because these individuals are more concerned with supporting themselves financially or even supporting their families, as this age group is more likely to be getting married and starting a family. Starting a family could lead to heightened levels of exhaustion and stress, having to balance work and private life, decreasing overall quality of life [Martins, 2019]. Furthermore, the idea of getting married or starting a family could also trigger stress among students in this age group, as they may perceive it as a cultural norm and societal expectation, thereby feeling pressured to conform. This could heighten stress levels and reduce satisfaction with life. Additionally, students within this age bracket may be more concerned with completing their degree and transitioning to the workforce, than those aged 18-24. Therefore, the social expectations regarding milestones such as career establishment or marriage may weigh more heavily on individuals in this age group, leading to feelings of dissatisfaction if they perceive themselves not meeting up to expectations or falling behind [Hasyim & Setyowibowo & Purba, 2024].

Our study has several limitations that require consideration. Firstly, the sample used consisted of university students studying in Buenos Aires, which may limit the generalizability of the findings to other demographic groups or regions. Therefore, whilst providing us with valuable insights, caution should be exercised when extrapolating the results to a broader population.

Secondly, mood outcomes were assessed using self-report measures, which are subject to social desirability bias and recall bias. Therefore, participants' responses may have been influenced by perceived social norms or memory of their mood, rather than actual experiences, potentially impacting the data.

Thirdly, the study focused on university students aged 18-35 years old, excluding other age groups. This limited age range may not capture the full spectrum of age-related differences in mood responses during the pandemic, thus impacting the generalizability of the results. Additionally, our study didn't explore the mood

changes among individuals within the same age range who weren't enrolled as students. Moreover, this omission prevented comparing non-students with students, thus limiting our ability to indirectly assess the impact of university enrollment (and closure hereof) on mood.

Also, our study didn't account for potential confounding variables, such as socio-economic status, pre-existing mental health conditions, relationship, and employment status, or living situations. These factors can affect mood during the pandemic, and therefore may have influenced our results. Furthermore, while our study compared mood outcomes between sex and age groups, it didn't explore the potential interaction between these variables. Future research should investigate this. Finally, our study relied solely on quantitative research methods. Future research could benefit from incorporating qualitative approaches to provide deeper insights into the reasons behind certain feelings or behaviors of students. Qualitative research could also help to understand possible coping mechanisms employed by students during the pandemic.

Notwithstanding these limitations, it can be concluded from the current study that COVID-19 lockdowns had a significant negative impact on mood and quality of life of Argentinean university students.

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