



E-ISSN: 3108-852X

APSSHS

Academic Publications of Social Sciences and Humanities Studies

2022, Volume 2, Issue 1, Page No: 19-27

Available online at: <https://apsshs.com/>

Journal of Applied Organizational Systems and Behavior

## Loneliness Experienced by Students of The Faculty of Science and Arts During The COVID-19 Pandemic

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### Abstract

This study aims to assess the loneliness levels experienced by students of the Faculty of Science and Arts at Rafha campus, Northern Border University, KSA, during the Novel Corona virus outbreak, while also examining variations in loneliness based on gender and marital status. To fulfill this objective, the researcher employed a descriptive approach, designed an initial data collection form, and utilized the UCLA Loneliness Scale. The research population comprised 1,160 students, with a sample of 365 participants. Data was gathered online during the first semester of the 2020-2021 academic year. Findings revealed that students' loneliness levels during the Novel Corona virus outbreak were below average. Additionally, analysis showed significant gender differences, with female students having a higher mean score (191.59) than male students (153.82). However, no significant differences were found in loneliness related to marital status.

**Keywords:** COVID-19, Loneliness, Novel corona virus, Students of the faculty

**How to cite this article:** Eriksson J, Holm K, Nilsson A. Loneliness experienced by students of the Faculty of Science and Arts during the COVID-19 pandemic. *J Appl Organ Syst Behav.* 2022;2(1):19-27. <https://doi.org/10.51847/gKhJzWA2N>

**Received:** 11 March 2022; **Revised:** 21 May 2022; **Accepted:** 23 May 2022

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### Introduction

At the start of 2020, the World Health Organization (WHO) identified COVID-19, a new coronavirus illness, as a Public Health Emergency of International Concern, emphasizing the substantial risk of its global dissemination [1, 2]. By March 2020, COVID-19 was officially classified as a pandemic by WHO, triggering widespread anxiety across populations worldwide [3].

During such pandemic crises, safeguarding both mental and physical health alongside the overall welfare of affected communities becomes imperative. Nevertheless, fears regarding viral transmission between individuals may undermine social unity and trust [4].

To combat COVID-19's transmission, authorities have enforced critical interventions, particularly social distancing. Additionally, isolation and quarantine measures targeted those exposed or infected by the virus, while general social distancing was mandated across communities to slow down the spread [5]. Although lockdowns have been useful in reducing infection rates, they also bear consequences detrimental to population well-being [6]. Loneliness, a profound mental health challenge, has progressively intensified amid the pandemic, urging policymakers, government officials, and mental health professionals to account for its long-term repercussions during recovery planning [7].

Worldwide, mental health systems were largely unprepared for the psychological fallout induced by COVID-19 [8]. Loneliness has thus been recognized as a pressing public health issue, with concerns mounting that lockdowns could



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exacerbate social isolation [9]. Supporting this, Brodeur *et al.* [6] demonstrated the adverse mental health effects associated with lockdown restrictions.

### *Research problem*

Since the outbreak of COVID-19, a variety of control measures have been implemented globally, such as lockdowns, home quarantine, social distancing, e-learning, and remote work. While these interventions aim to curb virus transmission, they risk increasing feelings of loneliness. Hwang *et al.* [5] noted that although quarantine and social distancing are necessary to reduce viral spread, they can lead to significant loneliness and social isolation, affecting both physical and psychological health, thus widening the social impact of the pandemic. The possibility that ‘stay-at-home’ mandates and lockdowns might intensify loneliness—a critical public health concern—is increasingly recognized, though detailed profiles and associated risk factors remain to be fully understood [10]. Moreover, Killgore *et al.* [7] linked greater loneliness with heightened depression and suicidal thoughts. Algeeg [11] also reported that higher loneliness correlates with increased depression and mental health disorders. Further, Bu *et al.* [9] identified students as particularly vulnerable to loneliness during lockdowns, a conclusion echoed by Keckojevic *et al.* [12], who highlighted the pandemic’s adverse mental health impact on college students. Given this context, it is vital to explore loneliness among Faculty of Science and Arts students during the Novel Coronavirus outbreak. This study thus addresses the following questions:

1. What is the extent of loneliness experienced by students at Rafha’s Faculty of Science and Arts during the COVID-19 outbreak?
2. Do loneliness levels among these students vary based on gender and marital status during this time?

### *Research objectives*

The study aims to:

Evaluate loneliness levels among Faculty of Science and Arts students in Rafha amid the COVID-19 outbreak.

Investigate differences in loneliness across gender and marital status during the pandemic.

### *Research significance*

This research is significant as it examines loneliness among university students during the Novel Coronavirus crisis, a crucial issue needing urgent attention. Zhang *et al.* [13] highlighted the limited focus on mental health consequences and effective strategies for mitigation. Research is urgently required to reduce mental health burdens on vulnerable groups during pandemic conditions [14]. Additionally, the study fills a research gap by focusing on loneliness among university students in Arab nations during the COVID-19 outbreak.

### *Terminologies of the research*

#### *Loneliness*

Loneliness refers to a distressing emotional condition that arises when there is a marked deficiency in the amount or depth of an individual’s social connections [15].

#### *Students of the faculty*

This term specifically pertains to the students enrolled at the Faculty of Science and Arts located on the Rafha campus of Northern Border University, Kingdom of Saudi Arabia.

#### *Novel coronavirus (COVID-19)*

The World Health Organization designated the new coronavirus responsible for the outbreak as SARS-CoV-2, with the disease it causes termed COVID-19. The name COVID-19 is derived from "CO" for corona, "VI" for virus, and "D" for disease (Johns Hopkins Aramco Healthcare, 2020).

### *Theoretical framework and previous studies*

The emergence of COVID-19 represents an extraordinary health crisis worldwide, demanding broad shifts in human behavior and imposing significant mental and emotional strain [16]. The pandemic challenged healthcare infrastructures globally, compelling governments to implement strict containment strategies including physical distancing, work-from-home systems, and temporary closure of many services. Educational institutions, including universities, had to transition abruptly from conventional in-person teaching to digital platforms [17, 18].

This global emergency has influenced every aspect of life, spanning economic stability, interpersonal interactions, and physical and psychological well-being. Mandatory stay-at-home regulations and limited mobility disrupted familial routines and everyday social engagement, which are crucial to human social functioning [19].

### *Impact of COVID-19 on mental health*

Due to its rapid transmission and the scarcity of immediate treatment options, COVID-19 placed exceptional pressure on nations' ability to sustain public health and economic systems. These compounded stresses led to widespread emotional disturbances such as anxiety and psychological distress. In mitigating the pandemic's mental health burden, it is essential to formulate strategic approaches for both prevention and intervention [20]. Furthermore, Ozamiz-Etxebarria *et al.* [21] underscored the urgency of sustained research to manage and treat the emerging psychological conditions during the outbreak. Existing literature confirms a strong link between loneliness and deteriorating mental health [15]. Heinrich and Gullone [22] emphasized that the presence of fulfilling social ties is critical to maintaining both mental and physical health, urging mental health professionals to prioritize the reduction of social disconnection in their clinical practice.

### *Loneliness*

The concept of loneliness is often defined as a subjective and unfavorable experience resulting from perceived inadequacies in social connectedness, distinct from the mere act of being alone [23]. Loneliness is a personal, deeply human phenomenon that can vary in impact across individuals and has been linked to diminished self-worth and symptoms of depression [24]. Contemporary studies have increasingly identified loneliness as a serious public health concern [25], particularly as its prevalence continues to grow amid the COVID-19 pandemic, which remains an ongoing threat to global public health [26, 27].

### *Loneliness during COVID-19 pandemic*

Loneliness has emerged as a crucial risk factor negatively impacting both emotional health and quality of life. Despite its recognized influence on mental wellness, there remains limited knowledge regarding effective methods to reduce loneliness, particularly during emergencies such as the COVID-19 pandemic [28].

In response to the rapid global spread of SARS-CoV-2, countries worldwide enforced lockdowns and stringent public health protocols to curb infections. This unprecedented situation sparked a wave of scholarly inquiries into the psychological repercussions of prolonged social isolation [7, 9, 10, 29–34].

Findings from most studies consistently indicate an escalation in loneliness during the pandemic. Bu *et al.* [10] identified four distinct levels of baseline loneliness, varying from minimal to severe. Bu *et al.* [9] further noted that the same risk factors for loneliness persisted before and throughout the pandemic. While younger individuals and women appeared particularly susceptible [9, 10, 32], older adults reported comparatively lower loneliness levels [33].

Social conditions such as cohabiting with several people, being in a marital relationship, and strong social support systems served as protective buffers against loneliness [29]. Moreover, González-Sanguino *et al.* [35] found that spiritual well-being was a key protective element, whereas loneliness was the most significant predictor for mental health disorders like anxiety, depression, and post-traumatic stress.

According to Bu *et al.* [9], demographic vulnerabilities remained largely unchanged during the pandemic. Individuals most at risk included those aged between 18 and 30, single or economically inactive persons, urban residents, students, and people with limited education or income. These groups experienced intensified loneliness during lockdowns compared to pre-pandemic levels.

The analysis by Groarke *et al.* [29] reinforced the importance of social support structures such as marriage and shared living environments in mitigating loneliness. Similarly, Luchetti *et al.* [33] explored how social restriction policies influenced perceived loneliness and revealed that although older adults were generally less lonely, they experienced a surge in loneliness during the height of the outbreak.

### *Previous studies*

Numerous investigations have addressed the issue of loneliness experienced by university students amid the COVID-19 crisis. One such investigation by Wilczewski *et al.* [36] explored this phenomenon among international students at the University of Warsaw. This study analyzed data from 357 participants originating from 62 nations, with 236 individuals remaining in the host country and 121 returning to their home countries. The findings revealed a notable rise in loneliness, particularly among students who were self-isolating, regardless of their physical location.

In another context, Labrague *et al.* [37] examined the extent of loneliness among 303 college students from the Central Philippines during the pandemic using a cross-sectional methodology. The research highlighted that feelings of loneliness were prevalent, but elements such as coping strategies, social support systems, and psychological resilience served as buffering mechanisms.

A different approach was adopted by Al-Fiqi and Aboel-Fetouh [38], who conducted a descriptive-analytical study aiming to explore various psychological disturbances linked to the COVID-19 pandemic among Egyptian university students. Their findings indicated that boredom emerged as the most prominent concern, while other issues such as loneliness, depression,

psychological distress, compulsive behavior, and sleep and eating disorders were observed at moderate levels. Additionally, gender and age were found to significantly influence the severity of psychological symptoms, whereas living environment showed no such effect.

Elmer *et al.* [39] utilized longitudinal data collected since 2018 to evaluate how the pandemic affected Swiss undergraduate students' mental health and social networks. Their study included a group of 212 students exposed to the pandemic and a comparative group of 54 students from prior to the outbreak. The results demonstrated substantial declines in mental well-being, with marked increases in stress, loneliness, depression, and anxiety, alongside reductions in social connections like co-studying, peer interactions, and support systems.

### *Comment on previous studies*

The present research builds upon prior studies by Wilczewski *et al.* [36], Labrague *et al.* [37], and Al-Fiqi and Aboel-Fetouh [38], all of which investigated loneliness in university populations during the COVID-19 pandemic. What sets the current study apart is its unique demographic focus, as it surveys students in Saudi Arabia—unlike the referenced research which involved populations from Poland, the Philippines, Switzerland, and Egypt. Crucially, none of the earlier works considered how loneliness during the pandemic might vary according to gender or marital status, which this study seeks to examine.

### *Research hypotheses*

1. Students at the Faculty of Science and Arts experienced a heightened sense of loneliness amid the COVID-19 pandemic.
2. There are statistically significant gender-based differences in the loneliness levels among students of the Faculty of Science and Arts during the pandemic.
3. Loneliness during the COVID-19 outbreak varies significantly among students of the Faculty of Science and Arts based on marital status.

## **Materials and Methods**

To explore the extent of loneliness experienced by students amid the Novel Coronavirus outbreak, and to identify potential differences based on gender and marital status, the study was grounded in a descriptive research framework. This methodology was selected due to its ability to objectively capture and interpret real-life circumstances as they exist, allowing for an accurate analysis of the phenomenon within its natural context.

### *Sample and population*

The participants in this research were drawn from the student body of the Faculty of Science and Arts at Northern Border University, Rafha campus, during the first academic term of 2020–2021. The total population included 1,160 students—383 males and 777 females. Out of this population, 365 students voluntarily responded through an electronic survey instrument, accounting for 31.47% of the total enrollment. The data gathering process was conducted over a two-month period, specifically in November and December 2020.

### *Research sample descriptions*

Demographic characteristics of the research participants, categorized by Gender and Marital Status variables, are detailed in **Table 1**. This categorization provides the foundational structure for analyzing group-based differences in the reported levels of loneliness.

**Table 1.** Study sample descriptions according to Gender and Marital status variables

Descriptions Variables	Levels	Frequency	%
Gender	Males	83	22.7
	Females	282	77.3
	Total	365	100.0
Marital status	Married	45	12.3
	Single	320	87.7
	Total	365	100.0

### *Tools of the research*

The instruments utilized in this investigation comprised the following:

1. A Preliminary Data Form, developed specifically by the researcher to collect basic demographic and background information.

2. The UCLA Loneliness Scale, originally created by Russell *et al.* [40] and subsequently translated and adapted to the Saudi cultural context by Khider and Al-Shennawi, as referenced in the work of Al-Asimi [41]. This scale was selected due to several compelling justifications:
- 1) It demonstrates strong psychometric soundness and consistency. As cited by Al-Asimi [41], Russell reported a Cronbach's alpha coefficient of 0.94; similarly, Khider and Al-Shennawi observed a reliability index of 0.87; and Al-Asimi himself found a split-half reliability of 0.86.
  - 2) It has been widely employed for assessing loneliness in university-level populations.
  - 3) The scale's standardization for use within the Saudi academic environment enhances its cultural relevance and applicability.

The instrument contains 20 items, with responses captured on a four-point Likert scale ranging from never to always. Scoring is directionally sensitive: positively worded items are rated from 4 to 1, while negatively phrased items are scored from 1 to 4.

#### *Validity and reliability of the scale in the current research*

To ensure that the UCLA Loneliness Scale retained its measurement validity within the context of this study, a pilot evaluation was conducted. This involved administering the scale to a randomly selected subgroup of 40 students from the broader research population.

#### *Internal consistency analysis*

To examine the internal reliability of the scale's items, Pearson correlation coefficients were calculated between individual item scores and the total score of the loneliness scale. This statistical procedure helped determine the extent to which each item was aligned with the overall construct.

**Table 2** presents the corrected item-total Pearson correlation coefficients for each item on the Loneliness Scale (n = 40).

**Table 2.** Person corrected item-total Pearson correlation coefficients for items of Loneliness Scale

Item No.	Item-Total Correlation	Probability (significant)	Item No.	Item-Total Correlation	Probability (significant)
1	.730	.001	11	.704	.001
2	.299	.031	12	.702	.001
3	.462	.001	13	.408	.004
4	.724	.001	14	.716	.001
5	.549	.001	15	.670	.001
6	.715	.001	16	.399	.005
7	.705	.001	17	.318	.023
8	.622	.001	18	.635	.001
9	.499	.001	19	.608	.001
10	.818	.001	20	.587	.001

An examination of the data presented in **Table 2** reveals that all calculated correlation coefficients were positive, with the majority reaching statistical significance at the 0.001 level, and the remaining items achieving significance at the 0.05 level. These findings confirm that each item on the Loneliness Scale maintains a strong and meaningful association with the overall score, thereby demonstrating high internal consistency across the scale.

#### *Reliability estimates*

To further assess the scale's reliability, the researcher calculated two key indicators: Cronbach's Alpha and the Spearman-Brown Coefficient, both applied to the total scores derived from the Loneliness Scale. The computed reliability indices are summarized in **Table 3**, reflecting the consistency and dependability of the scale as employed in this study.

**Table 3.** Results of Cronbach's Alpha and Spearman-Brown Reliability Coefficients Loneliness total scores

	No of Items	Reliability Coefficients	
		Alpha	Spearman-Brown
Loneliness total scores	20	.902	.937

## Results and Discussion

### Hypothesis 1

The first hypothesis, proposing that loneliness levels were elevated among Faculty of Science and Arts students during the COVID-19 crisis, was evaluated using a one-sample t-test. Summary statistics from this analysis appear in the table below.

**Table 4.** Results of the One-Sample T-Test to determine the level of loneliness among the students of the Faculty of Science and Arts during the outbreak of the Novel Coronavirus (n = 365)

Variable	Mean	SD	Test Value*	Cal. (t) value	P. (Sig)	Statistical Inference
Loneliness Total cores	42.65	12.84	50	-10.929	.001	Below the average

(\*) The test value is the theoretical mean for the theoretical scores.

According to **Table 4**, the mean loneliness score among students was (42.65), with a calculated (t) value of (-10.929) and a significance level of (0.001). These findings suggest that the loneliness level for students at the Faculty of Science and Arts during the Novel Coronavirus outbreak was below the average threshold.

This outcome partially aligns with Al-Fiqi and Aboel-Fetouh's [38] findings, which reported a moderate degree of loneliness among students. However, it contrasts with Labrague *et al.*'s [39] research, where a high loneliness level was identified during the COVID-19 period, possibly due to differences in sample characteristics. Additionally, Wilczewski *et al.* [36] observed elevated loneliness in students undergoing self-isolation.

Even though the loneliness measured in this study was below average, the need for psychological support remains critical to safeguard students' mental well-being, as earlier research has highlighted increased loneliness rates among students during the pandemic, with student status being a notable risk factor.

The researcher concurs with Williams *et al.* [42] that addressing this public health issue requires urgent, effective interventions. Monitoring mental health closely is crucial to prevent and manage future psychological disorders, as emphasized by Ozamiz-Etxebarria *et al.* [21], especially given the unprecedented scale of global infections, demanding increased focus and effort to confront this challenge.

### hypothesis 2

To evaluate hypothesis (2) — which proposes that loneliness differs significantly among students of the Faculty of Science and Arts by gender during the COVID-19 outbreak — the researcher employed the Mann-Whitney non-parametric test. The outcomes of this analysis are presented in the subsequent table.

**Table 5.** Results of the Mann-Whitney test examining gender differences in loneliness among Faculty of Science and Art students during the Novel Coronavirus outbreak.

Variable	Gender	Mean of ranks	U Value	Cal. (z) Value	Sig. Level	Statistical Inference
Loneliness Total cores	Males	153.82	9281	2.868	.004	Female's Mean is greater

**Table 5** reveals that the average loneliness score for male students is (153.82), while female students show a higher average score of (191.59). The Mann-Whitney test calculated a (z) value of (2.868) with a significance level of (0.004), indicating that the difference is statistically meaningful. This suggests a clear gender-related disparity in loneliness among students at the Faculty of Science and Art during the Novel Coronavirus pandemic, with females exhibiting notably higher loneliness levels than males.

Previous research such as that by Al-Fiqi and Aboel-Fetouh [38], Labrague *et al.* [27], and Wilczewski *et al.* [36], which focused on loneliness among university students during COVID-19, did not specifically analyze gender differences, underlining the relevance of this study's findings. The results correspond with studies on the broader population conducted by Bu *et al.* [10], Li and Wang [32], Bu *et al.* [9], and Rodríguez-Rey *et al.* [43], which found that women were at a higher risk of loneliness throughout the pandemic. Consequently, there is a pressing need for additional research into the factors driving the pandemic's negative psychological impact on females, especially in terms of loneliness. Furthermore, providing accessible counseling and mental health support for students during such crises is essential to reduce adverse outcomes.

### Hypothesis 3

To investigate hypothesis (3) — that loneliness among students at the Faculty of Science and Art during the Novel Coronavirus outbreak varies significantly according to marital status — the researcher applied the Mann-Whitney non-parametric test. The outcomes of this analysis are detailed in the following table:

**Table 6.** Outcomes of the Mann-Whitney test assessing loneliness differences by marital status among Faculty of Science and Art students during the Novel Coronavirus outbreak.

Variable	Marital status	Mean of ranks	U Value	Cal. (z) Value	Sig. Level	Statistical Inference
Loneliness Total cores	Married	183.97	7157	0.066	.474	The difference isn't significant

**Table 6** displays the loneliness mean scores for married and single students, which are (183.97) and (182.86) respectively. The Mann-Whitney test returned a (z) value of (.066) with a significance level of (0.474), indicating no statistically meaningful difference between these groups. This suggests that marital status does not influence loneliness levels among students at the Faculty of Science and Art during the Novel Coronavirus pandemic.

Notably, prior research by Al-Fiqi and Aboel-Fetouh [38], Labrague *et al.* [37], and Wilczewski *et al.* [36] concentrated on loneliness among university students during COVID-19 but did not address differences based on marital status, underscoring the unique contribution of the present study. According to Groarke *et al.* [29], strong social ties such as marriage serve as a protective element against loneliness, a view supported by earlier work from Gubrium [44] and Stack [45] who found that loneliness is generally less common in married individuals. Given the unprecedented circumstances of COVID-19, these findings highlight the need for further investigation.

In agreement with Giallonardo *et al.* [8], the researcher stresses the importance of thoroughly understanding the mental health impacts of new stressors to design effective interventions tailored to both the general population and vulnerable groups.

## Conclusion

This study sought to measure loneliness levels among students at the Faculty of Science and Arts, Rafha campus, Northern Border University, KSA, during the Novel Coronavirus outbreak, and to examine the differences based on gender and marital status. Utilizing a descriptive design and collecting data electronically, statistical analyses showed that loneliness among the students was generally below average. Female students exhibited higher loneliness scores than their male counterparts, while marital status was not associated with significant differences in loneliness.

Based on these findings, several recommendations are put forward to support student mental health and reduce the negative psychological effects of the COVID-19 pandemic, along with suggestions for future research endeavors.

### Recommendations

1. Launch online psychological counseling services for students throughout the pandemic period.
2. Develop and offer online training programs aimed at strengthening students' psychological resilience against ongoing pandemic challenges.
3. Prioritize mental health resources and support specifically for female university students, who appear more vulnerable.

### Future research directions

1. Investigate mental health issues linked to loneliness among female university students in more depth.
2. Conduct studies focused on depression among female students, given its close relationship with loneliness.
3. Repeat similar research across other university faculties during the pandemic to compare results.
4. Explore whether students infected with COVID-19 experience higher loneliness levels than those uninfected, to better target support efforts.

**Acknowledgments:** Gratitude is extended to Northern Border University for permitting the research and facilitating data collection, as well as to all participants for their cooperation.

**Conflict of interest:** None

**Financial support:** None

**Ethics statement:** None

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