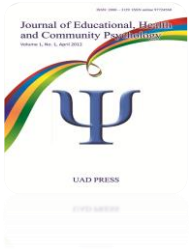

Factors Affecting the University Students' Mental Health during the 2020 Covid-19 Outbreak

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Abstract

The COVID-19 pandemic had a detrimental impact on the mental well-being of young individuals living in rural areas of the Philippines. A survey conducted online, involving 722 students from Isabela State University, Isabela aimed to assess their mental health. The survey gathered information on the students' characteristics, sources of stress, coping mechanisms, and mental health challenges related to the pandemic. Two diagnostic tools, the Patient Health Questionnaire-9, and the Gender Anxiety Disorder-7, were used to evaluate depression and anxiety levels. The results revealed that most 19- to 20-year-old students experienced mild depression and anxiety, with females being more affected than males. Financial constraints hindered access to mental health care, impacting academic performance. COVID-19 symptoms, a lack of counseling, and social isolation were additional stressors. Coping strategies included exercise, a healthy diet, and creative activities. These findings reveal the interconnectedness of isolation, economic challenges, educational setbacks, and mental health effects caused by COVID-19. To address these issues, it is crucial to improve counseling services, provide telehealth training, conduct seminars, implement interventions, offer academic support, and utilize mental health technologies. These measures can bridge the gap between students, parents, and educational institutions. Additionally, future studies should focus on developing tailored therapies for the most affected groups.

Keywords: *anxiety, COVID-19 pandemic, mental health, stressors, Philippines*

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Introduction

The COVID-19 pandemic has shown how important mental health is for many of the people who have been affected. The prevalence of epidemics creates new stressors, including fear and worry

about oneself or loved ones, constraints on physical movement and social activities due to quarantine, and sudden and radical lifestyle changes. Mental health issues are a common concern for college students, affecting approximately one in seven, with depression and anxiety being the most common (Auerbach et al.,2018). During the lockdown period, factors related to changes in academic structures from face-to-face learning to virtual education (Bostan,2020), tedious activities and examinations, and battles with limited resources such as Internet connectivity and mobile devices can be directly associated with anxiety, stress, frustration, and depressive disorders. Some studies (Bautista & Manuel,2020) have concluded that this pandemic and home quarantine have contributed to health anxiety and loneliness among university students. Related studies (Shereen, et al.,2020) have suggested that the incidence of depression, anxiety, and self-harm is prevalent between 16 and 25 years of age. Most of them had studied secondary and tertiary education. A study (Moghe et al., 2020) showed that female students are more concerned about their health and future and are more prone to psychological issues such as feelings of uncertainty, helplessness, and outbursts than male students.

According to the World Health Organization (2007), a pandemic is an epidemic occurring worldwide or across a vast area, crossing international boundaries, and typically affecting many people. Extremely strict measures to stop pandemics, like forcing schools to close and stopping all production and business that isn't essential, are making people's daily lives and jobs very hard and putting economic organizations in danger. (Ayittey et al., 2020). People generally, said that quarantine made them feel bad things like fear, nervousness, sadness, guilt, confusion, anger, numbness, and anxiety. (Reynolds, et al. 2008). Studies (Ro et al., 2017) have shown that the psychological effects of a pandemic were a higher level of anxiety, worries, and behaviors in the general population.

According to previous studies, college students aged 16–25 experience stress, anxiety, and depression (Mahmoud et l.,2015). Any impediment to this process may result in denial, self-blame, dissatisfaction, stress, or worry, even if students learn new skills to maintain relationships, independence, and self-sufficiency. Despite its adverse effects on physical and mental health, social media is widely available and used as a coping mechanism.

In particular, academic structural changes, exams, and a struggle with scarce resources during the community quarantine might be directly linked to anxiety, stress, frustration, and depressive illnesses (Bostan,2020). Therefore, it is crucial to advance policies that support mental health and combat the pandemic's social and psychological repercussions (Matthews et al., 2019). Evidence suggests that the incidence of depression, anxiety, and self-harm in 16-24-year-olds is rising, particularly in young women (McManus & Gunnel, 2020). Global student mental health surveys suggest that 21.2% of students will have experienced depression at some point, and 18.6% will have experienced anxiety, similar to when asked about the last 12 months (Cuijpers et al.,2019). The University of Bristol Health Sciences survey in 2017 found that 27% of student medics, dentists, and vets reported symptoms of moderate to severe depression and anxiety. Perhaps more worryingly, only one in five depressed individuals sought help (Bhugra et al., 2019). Some barriers students described when seeking support were lack of services, not knowing how to access resources, fear of academic consequences, and social stigma.

Recent studies on college student's mental health in Chine have revealed rising level of anxiety and sadness following the outbreak (Lei et al., 2021). Similarly, the instrument's used in this study such as the PHQ9 and GAD-7 was used to assess the psychosocial factors of Chinese students (Ma, et al., 2020).

The Philippine Mental Health Act (Republic Act No. 11036) in 2018 marked a significant milestone for the country. Previously, the Philippines was among the few nations without dedicated mental health legislation. This Act seeks to ensure comprehensive and integrated mental health care access while protecting the rights of those suffering from mental diseases and their families. (Lally et al., 2019). However, despite recognizing social risk factors for mental health, the strategic plan for the Act primarily focuses on four pillars: mental health promotion, governance, service delivery, and information and research. In the Philippines, mental healthcare faces challenges such as inadequate investment, a shortage of mental health professionals, and underdeveloped community mental health programs. Furthermore, economic constraints and limited accessibility further impede people's access to mental health services. Furthermore, stigma prevents Filipinos from seeking therapy (Tuliao & Velasquez, 2014). In addition, the COVID-19 pandemic has highlighted the challenges that schools

confront, particularly in rural parts of the Philippines, where children are already vulnerable to mental health crises but lack adequate resources and support to address their needs and gain access to inexpensive healthcare.

The gap in this study lies in the current research's focus on anxiety and depression related to the COVID-19 pandemic, neglecting the exploration of various stressors and barriers to mental health. This study not only investigates anxiety and depression but also provides respondents with an understanding of the diverse stressors and obstacles to mental well-being. It further seeks to offer respondents different coping strategies tailored to their personalities and highlight the impact of good mental health. Additionally, this study aims to introduce novel techniques and interventions through online and offline services, fostering a strong relationship between students and institutions while reducing the stigma associated with mental health in rural places of the Philippines.

The research utilized a survey-based evaluation to assess the mental health status of college students at Isabela State University, Angadanan Campus, in the aftermath of the pandemic. Several independent variables were considered, including the profile of the respondents, COVID-19 stressors, barriers to mental health, and coping mechanisms. Additionally, the study investigated the relationship between depression and anxiety levels as independent variables and the dependent variables of age and gender. The study's main objective was to examine student characteristics and identify various stressors associated with COVID-19 in academic, health, and lifestyle aspects. Moreover, the study aimed to identify factors that hinder individuals from achieving well-being and wellness and accessing mental health services. Furthermore, it sought to explore coping strategies employed by respondents to manage challenging or stressful emotions arising from the COVID-19 pandemic. Lastly, the study aimed to evaluate the levels of depression and anxiety, investigating their significant relationship with respondents' age and gender.

Methods

Design

A descriptive survey research design was used in this study using semi-structured multiple-choice questions. The university's research review committee approved the study before it was conducted. A consent letter was obtained from the participants before the survey. Due to the lockdown and social distance protocols implemented by the Department of Health and Inter-Agency Task Force, an online descriptive study was made and sent to college students using Google Forms.

Instrument

The development of a content-valid instrument involved a thorough review of relevant literature. Additionally, a panel of experienced researchers, psychologists, and sociologists from the university provided their insights and expertise. To ensure consistency, the questionnaires were administered multiple times to the same group of respondents, and the obtained scores showed similarity over repeated testing conducted before the final survey.

A total of six sets of online questionnaires were administered in this study. Four sets were utilized to gather information about the participants' demographic profiles, COVID-19 stressors, barriers to mental health, and coping mechanisms. The remaining sets included the standard Patient Health Questionnaire-9 (PHQ-9) and the Gender Anxiety Disorder-7 (GAD-7), both of which are commonly employed diagnostic tools in primary and secondary care mental health services.

The adapted PHQ-9 in this study exhibited a sensitivity and specificity of 88%, with a Cronbach's alpha coefficient of 0.89 (Kroenke et al., 2001). It consists of nine items that assess various symptoms of depression, including feelings of sadness, loss of interest or pleasure in activities, changes in appetite or weight, sleep disturbances, fatigue, difficulty concentrating, feelings of worthlessness or guilt, and thoughts of self-harm or suicide. Severity levels were categorized as minimal (0-4), mild (5-9), moderate (10-14), moderately severe (15-19), and severe (20+). Similarly, the adapted GAD-7 in this study demonstrated a sensitivity of 89% and specificity of 82%, with a Cronbach's alpha coefficient of 0.92 (Spitzer et al., 2006). The GAD-7 comprises seven items that assess common symptoms of anxiety, such as excessive worry, restlessness, difficulty concentrating, and irritability. Severity levels were classified as minimal (0-4), mild (5-9), moderate (10-14), or severe (15-21).

Data Analysis

The survey data were totaled, compiled, and statistically analyzed using the SPSS software to facilitate data analysis and interpretation. The frequency distribution of respondents' demographic profiles was examined. Similarly, the collected responses to stressors and coping mechanisms, including mental health barriers, were analyzed using frequency distribution. Scoring was used to categorize responses based on depression and anxiety levels. Pearson's chi-square association test and cross-tabulation were used to determine whether there was a significant relationship between students' levels of depression and anxiety and their age and gender.

Results

Demographic Profile

A total of 722 participants responded to the online survey. Table 1 depicts the respondents' descriptive information on the different variables. Of whom 66.10% were female (n = 477), and 33.90% were male (n = 245). Most participants (56.37%, n = 407) belonged to the age group of 19–20 years, followed by the age group of 21–22 years (26.04%, n = 188). The most represented program was the BS Industrial Technology program (23.55%, n = 170), followed by the BS Criminology program (21.33%, n = 154) and the BS Hospitality Management program (19.53%, n = 141). Sophomores (38.80%, n = 280) had the highest number of students who answered the survey, followed by freshman students (38.37%, n = 277) and third (20.91%) and fourth-year students (1.94%), respectively (n = 151, n = 14).

Table 1.
Demographic characteristics of the participants

Variables		Female n=477 n	66.10% %	Male n=245 n	33.90% %	Total N=722 n	100% %
Age	17-18	57	11.95%	19	7.76%	76	10.53 %
	19-20	283	59.33%	124	50.61%	407	56.37 %
	21-22	105	22.01%	83	33.88%	188	26.04 %
	23-24	16	3.35%	8	3.27%	24	3.32%
	25 and above	16	3.35%	11	4.49%	27	3.74%
Course	BS Criminology	72	15.09%	82	33.47%	154	21.33 %
	BS Industrial Technology	95	19.92%	75	30.61%	170	23.55 %
	BS in Education	85	17.82%	17	6.94%	102	14.13 %
	Bachelor in Vocation Technical Teacher Education	38	7.97%	12	4.90%	50	6.93%
	BS Information Technology	76	15.93%	29	11.84%	105	14.54 %
	BS Hospitality Management	111	23.27%	30	12.24%	141	19.53 %
Year_ Level	First Year	200	41.93%	77	31.43%	277	38.37 %
	Second Year	188	39.41%	92	37.55%	280	38.78 %
	Third Year	79	16.56%	72	29.39%	151	20.91 %
	Fourth Year	10	2.10%	4	1.63%	14	1.94%

The \

COVID-Related Stressors

Respondents' different sources of stress due to the COVID-19 pandemic were put into three groups: academic, health, and lifestyle.

Academic Stressors

Regarding academic-related concerns, Figure. 1 shows the most significant number of respondents, of whom 44.2% (n = 319) had experienced mild difficulty concentrating on their academics and 37.3%, or 269 of them, had moderate difficulty focusing on it. Similarly, most participants had reasonable fear and worry about their grades and plans (n = 290; 40.2%). In addition, 292 (40.4%) respondents experienced mild difficulty adapting to distance learning education and a moderately increased class workload (n = 288, 39.9%).

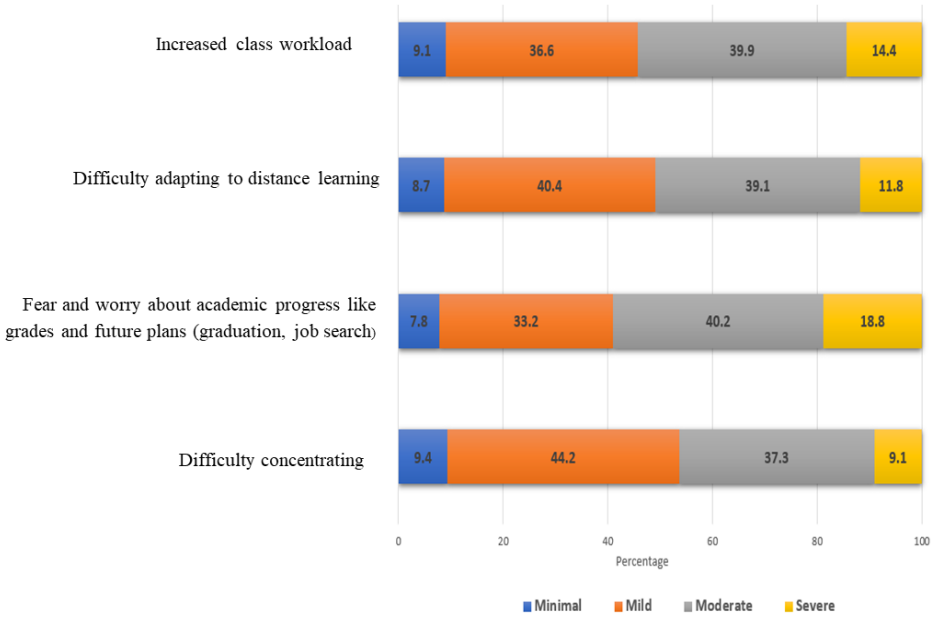

Figure 1. Percentage Distribution of the respondents' extent of experiencing Academic-Related Stressors

Health Stressors

More than half the participants had minimal ratings, as shown in Figure. 2. The reported top health-related stressors are; they had been infected with COVID-19 (n = 69.5%), followed by respondents

who were diagnosed with mental illness (n = 482, 69.5%) and suicidal thoughts (n=388, 53.7%). Some respondents had similar mild ratings for lack of fitness (n = 307, 42.5%), depressive thoughts (n = 297, 41.1%), fear and worry about the health of loved ones (n = 293; 40.6%), changes in eating patterns (n = 280, 38.8%), the risk of getting infected with COVID-19 due to an existing physical illness (n = 272, 37.3%), and changes in sleeping habits (n = 269, 37.50%).

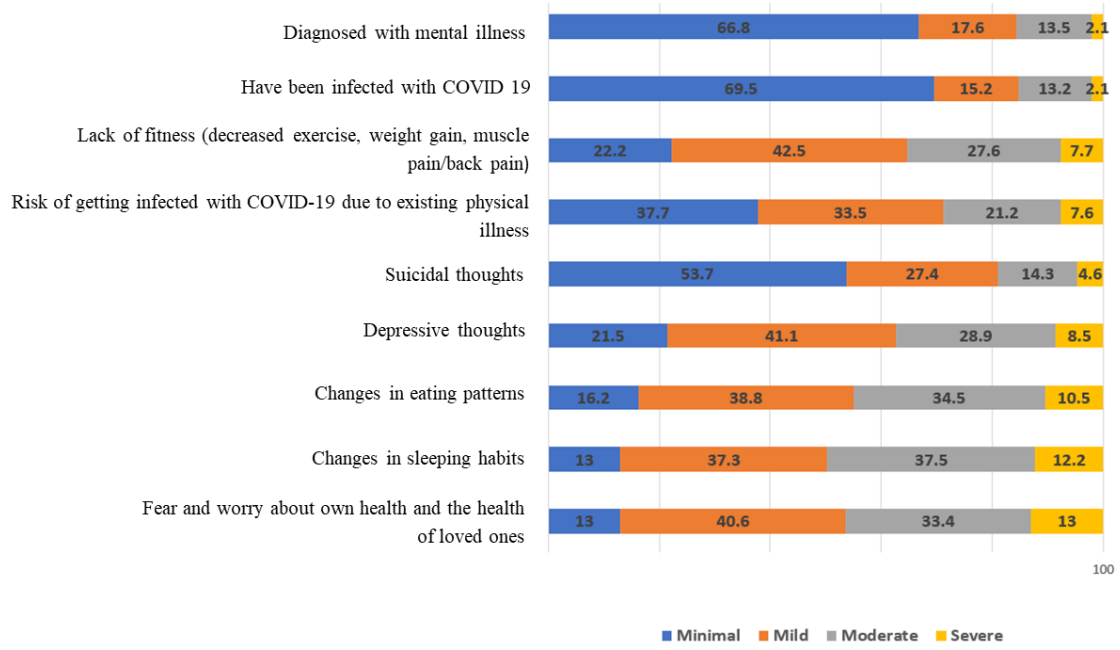

Figure 2. Percentage Distribution of the respondents' extent of experiencing Health-Related Stressors

Life Styles Stressors

All participants reported mild experiences while involved in the top eight lifestyle stressors, as shown in Figure. 3. Unsurprisingly, limited access to counseling services (n = 332, 46%) and changes in social relations or social isolation (n = 325, 45%) were the top two lifestyle concerns due to sudden restrictions. In addition, some participants had fear and worry about the media (n=319, 44.2%), limited access to medical care (n=315, 43.6%), limited access to other services such as restaurants, groceries, and gym (n=294,40.7%), social or physical distancing (n=291,40.3%), changes in travel or

transportation (n=284,39.4%), and fear and worry about the current financial situation (n=257,35.6%).

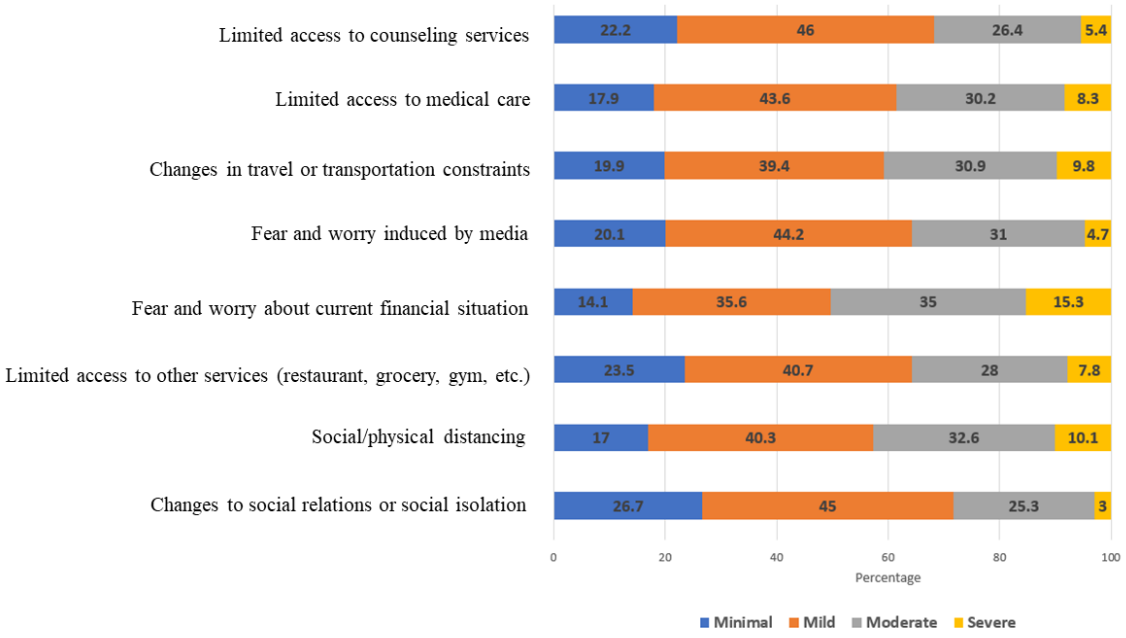

Figure 3. Percentage distribution of the respondents' extent of experiencing the Lifestyle-Related Stressors

Barriers to Mental Health

Among the barriers to mental healthcare, as presented in Figure 4, most findings depicted respondents' mild experiences in the following: limited access to services such as schedules for health concerns (n = 334, 46.30%); yourself or others may not see a problem even if it exists (n = 325, 45.00%); a lack of information about available resources (n = 321, 44.50%); doubt about the efficacy of mental health care (n = 307, 42.50%); being the most significant barrier to reaching out for help (n = 298; 41.30%); most respondents stated that their family income was P5,000 or less (n = 282, 39.10%); Only 35% (n = 253) had minimal experience with the social stigma brought about by the COVID-19 pandemic, as few had mildnsymptoms during the survey

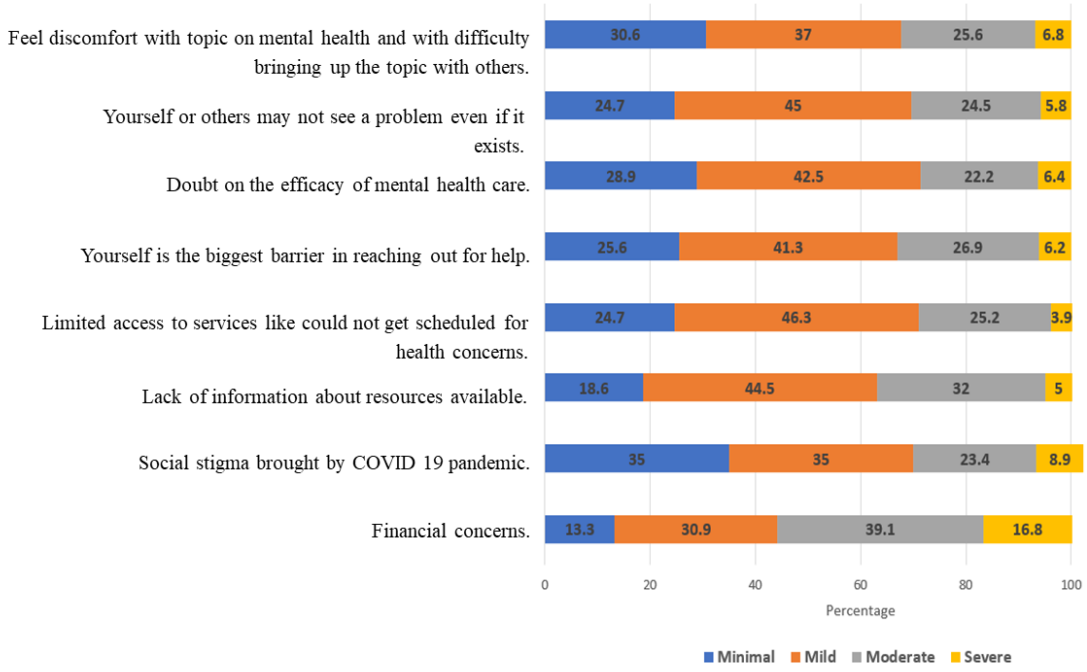

Figure 4. Percentage Distribution of the extent of experiencing the barriers to Mental Health Care

Coping Mechanisms

Different coping mechanisms during the COVID-19 pandemic are shown in Fig. 5

The top results (n=337, 46.70%) indicated that the respondents' coping mechanisms were mild through exercise, diet maintenance, and self-care activities. Respondents with limited experience engaged in creative activities, such as art creation, writing, and musical instrument playing (n = 330, 45.70%). Similarly, community, family, and friends provided moderate support (n-327, 45.30%). Furthermore, respondents focused on continuing their schoolwork and managing time for productive work (n = 317, 43.90%). Respondents' use of technologies, such as websites and social media, was moderate (n = 308, 42.70%) , using university health services such as counseling services (n = 297, 41.10%), and moderate experience also felt relaxed when they meditated, read, played with their pets, listened to music, played sports, or worked in their gardens (n = 292, 40.40%), and using other university health services (n = 275, 38.10%) reported mild experiences. Similarly, the respondents had moderate experience with spiritual and religious activities (n = 271, 37.50%).

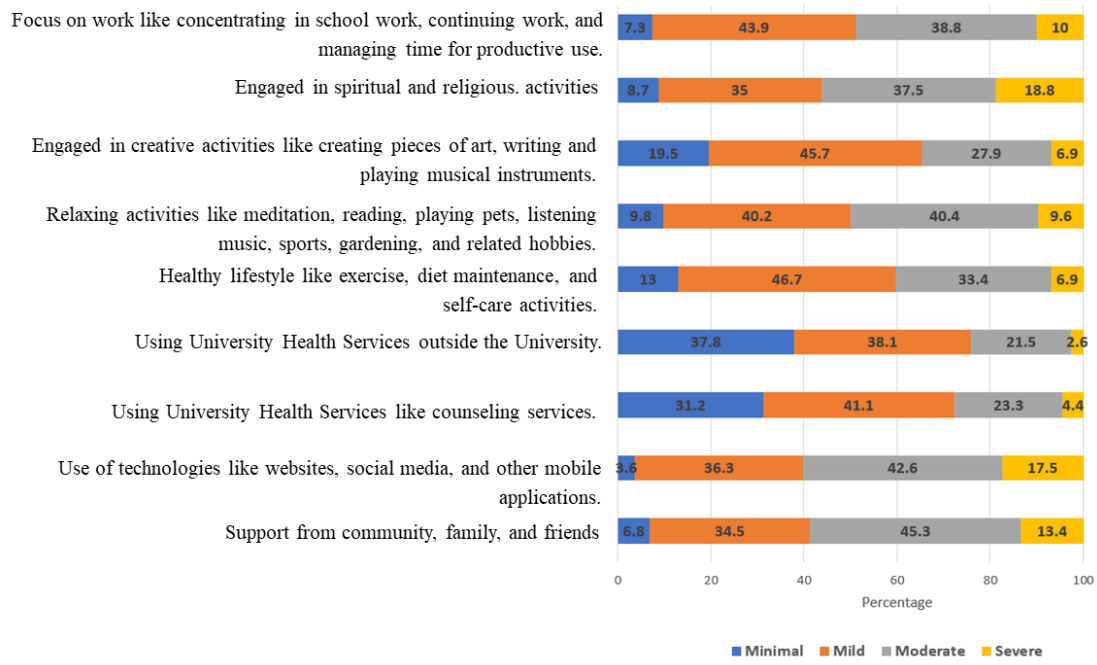

Figure 5. Percentage Distribution of the respondents' extent of experiencing the coping mechanisms

Levels of Anxiety and Depression Symptoms

The diagnostic tools, PHQ-9 and GAD-7, used to measure depression and anxiety were incorporated into the survey questionnaire and distributed online. As shown in Table 2, almost half of the respondents (n=323, 44.70%) experienced mild anxiety. Minimal anxiety was experienced by 30.30% of the participants (n=219), followed by moderate anxiety (17.70%, n=128), whereas 7.20% (n=52) had severe anxiety symptoms.

Some levels of depression were reported in Table 3, as follows: minimal (n= 154, 21.30%), mild (n=275, 38.10%), moderate (n=195, 27%), moderately severe (n=64, 8.90%), and severe (n=34, 4.70%). Most respondents (n=275, 38.10%) experienced mild depression.

Table 2.
Levels of Anxiety Symptom

Anxiety	Minimal		Mild		Moderate		Severe	
	n	%	n	%	n	%	n	%
	219	30.30	323	44.70	128	17.70	52	7.20

Table 3.
Levels of Depression Symptom

Depression	Minimal		Mild		Moderate		Moderately Severe		Severe	
	n	%	n	%	n	%	n	%	n	%
	154	21.30	275	38.10	195	27	64	8.90	34	4.70

Relationship of the respondents' depression and anxiety levels with their age and gender

Results from Table 4 show that depression and age (p=0.902) and depression and gender (p=0.211) were insignificant. When comparing anxiety to age, (p= 0.388) was also insignificant at the 0.005 level. However, when anxiety was compared by gender (p= 0.004), it revealed a significant relationship (see Table 5).

Table 4.
Relationship of the respondent's level of depression with their age and gender

Variables	Chi-Square Value	df	Sig. level
Depression and Age	9.264	16	0.902
Depression and Gender	5.848	4	0.211

Table 5.
Relationship of the respondent's level of anxiety with their age and gender

Variables	Chi-Square Value	df	Sig. level
Anxiety and Age	12.749	12	0.388
Anxiety and Gender	13.389	3	0.004

Discussion

Findings in the study show that most respondents were young adult females rather than males who were 19–20 years old. Similar studies during the pandemic (Wang et al., 2020; Mailizar et al., 2020) also showed that most Texas A&M University and Indonesia respondents were female, ranging from 19 to 22 years old. The age grouping of the respondents revealed that the age group of 19–20 years had higher percentages of severe depression and anxiety. This age group was mostly made up of second- and third-year students. They are most affected by the IATF health and safety protocols for staying at home.

The results regarding academic-related concerns among the participants suggest that a significant portion of them encountered challenges in maintaining focus on their studies, expressed worries about their grades and future plans, found it challenging to adapt to distance learning, and faced an increased workload. Additionally, the respondents mentioned financial constraints that hindered their ability to purchase mobile loads for online classes, and they had to assist their parents with household chores and engage in part-time jobs. These findings are consistent with prior research (Al-Maskari et al., 2022), which also highlighted the impact of resource availability on students' academic concerns, explicitly noting that many students were not prepared to utilize e-learning platforms before the onset of the pandemic.

A significant number of participants experienced various health-related stressors during the survey period. The COVID-19 outbreak had a significant impact, with the most common stressors being infection, mental illness, and suicidal ideation. The participants also reported concerns about their physical and mental well-being, including a lack of fitness, depressive thoughts, fear for loved ones' health, changes in eating patterns, and disruptions to sleep. A person's capacity for self-care, health literacy (Riiser et al., 2020), and healthy behavior are all affected by the participant's disclosure of health-related stressors.

Meanwhile, findings highlight the various lifestyle stressors faced by the participants, including minimal access to counseling services, social isolation, and concerns related to media, healthcare, access to services, social distancing, travel changes, and financial situations. Research (Zhai & Du, 2020)

supports the impact of the deprivation of these opportunities on students' mental health problems. It indicates that such deprivation increases the likelihood of students resorting to substance abuse, experiencing worsening mental health issues, or even facing an increased risk of suicide.

The majority of participants experienced mild barriers to mental health, including limited access to services such as health concern schedules, a lack of awareness of existing problems, insufficient information about available resources, doubts regarding the effectiveness of mental health care, and concerns about the social stigma associated with the COVID-19 pandemic. Financial difficulties were a significant concern, as most respondents indicated a family income of P5,000 or less. These financial challenges could be attributed to the restricted access to healthcare services and information resources regarding mental health and COVID-19 stigma. According to studies (Patre et al., 2022), the participants' psychological health suffered significantly as a result of the financial crisis that their families were experiencing. Given that the respondents come from low-income households, it is very important for their family members to acquire knowledge on budgeting and prioritizing essential needs.

Coping strategies are potent determinants of mental health outcomes. During the COVID-19 outbreak, 46.70% of respondents engaged in healthy lifestyle behaviors such as exercise, diet maintenance, and self-care activities. Similar research revealed that the pandemic's lockdown has drastically limited outdoor activity time, and people use home-based exercise as a coping technique to promote psychological well-being (Faulkner et al., 2020; Vancini et al., 2021; Gupta et al., 2021). Over half of the participants participated in creative activities to alleviate boredom during the lockdown. Individuals who engaged in creative activities constantly throughout the pandemic reported higher optimism, self-esteem, and pleasant emotions (Brosowsky et al., 2022). Furthermore, respondents said that support from family and friends was crucial to their coping strategies, similar to previous research findings (Liu et al., 2020). Participants spending more time at home with restricted activities can be ascribed to the increased use of social media as a coping method. According to research (Ridout & Campbell, 2018), young people found treatment using social networking platforms extremely effective, engaging, and encouraging. The respondents' modest participation in spiritual and religious activities is consistent with the findings of Abdulghani et al.

(2020), who described religious participation as a coping mechanism against the COVID-19 pandemic. Adaramola et al. (2022) stressed the value of practical coping methods in minimizing negative emotions and alleviating the load of difficult circumstances.

The majority of respondents in this survey reported mild anxiety and depression. According to the same findings, students and healthcare professionals experience more stress, anxiety, and depression than others (Rehman et al., 2021; Halperin et al., 2021). Related research among university students (Islam et al., 2020; Lun et al., 2018; Naser et al., 2021) discovered mild to severe depression and anxiety symptoms in several study scopes. At $p = 0.004$, there was a significant connection between anxiety and gender. This finding demonstrates that anxiety and gender have a meaningful relationship and that female students are more anxious than male students. Similar findings (Hyland et al., 2020; Debowska et al., 2020; Sundarasen et al., 2020; Gao et al., 2020; Amico et al., 2004) show that women have a significantly higher prevalence of anxiety disorders than men, including generalized anxiety disorder (GAD), panic disorder, and specific phobias.

This study is limited to exploring university students' thoughts and observations, employs only qualitative data, and has a smaller sample size due to a bad internet connection. In addition, this study does not meta-analyze the size and consistency of the claimed mental health outcomes due to the variety of the outcomes and measuring procedures; the researcher proposed more studies with larger dispersed samples and employing mixed methods.

Conclusion

The COVID-19 pandemic and its effects are expected to improve mental health and well-being. Although some critical questions about these responses still need to be answered, there is strong evidence that the COVID-19 pandemic; lockdown; and economic, educational, and mental aspects are all connected. For psychological resilience, college students should develop ways of dealing with problems.

Universities need to make their students more aware of their mental health needs and concerns and give them the tools to get help and support when needed. Allocating resources to expand counseling services, such as tele-counseling and health-related programs, is recommended, along with the engagement of academic staff for information dissemination, pastoral support, and educational assistance. Strong teacher-student interactions are vital for students to feel less nervous and more manageable, especially in online classes. Some of the guidance and counseling units' priorities include stress management and financial literacy seminars, women's empowerment activities, room-to-room counseling, and organizing peer counselors. Future research will focus on customizing tailored interventions for the most affected categories and looking into the long-term psychological effects of COVID-19.

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