

## Gender differences in depression, anxiety, and stress among Filipino college students during the post-pandemic period

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### ABSTRACT

This paper aims to look at the level of depression, anxiety, and stress experienced by Filipino college students in a state university in the post-pandemic period. Six hundred thirty (n = 630) students participated in the data collection process, utilizing a stratified random sampling technique. The data was analyzed using frequency, percentage, mean, standard deviation, and Mann-Whitney U test. DASS-21 was used to measure the level of depression, anxiety, and stress experienced by the student. Results showed a moderate level of depressive symptoms among male and female respondents. Females reported to have experienced severe anxiety and mild stress, whereas male respondents recorded a moderate level of anxiety and a normal level of stress. Moreover, the results also revealed that there is a significant difference in the level of depression, anxiety, and tension between female and male college students ( $p < 0.05$ ). This suggests that men and women experienced stressors and pressures and responded to emotional difficulties in distinct ways. This highlights the significance of gender-sensitive approaches in mental health support and intervention programs within educational settings. Appropriate resources and strategies that can be used in academic institutions may include focus group training and workshops about expressing emotions through open dialogue for both genders, gender-specific mental health programs as part of their regular semestral orientation, and educational seminars as part of their mental health programs and services which includes activity such as mental health day or any university-organized games that are related to mental health wherein both genders must participate for a holistic approach.

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### 1. Introduction

World Health Organization (2022) states that mental health is significant to individuals' personal, community, and socio-economic development. Individual's mental health is at risk, especially when exposed to unfavorable circumstances such as social, economic, geopolitical, and environmental. Mental health risks can be present in society at diverse scales that can be found in both local and global aspects, namely economic setbacks, climate crises, and disease outbreaks (World Health Organization, 2022).

Among the most worldwide public health concerns is a recent disease outbreak of a global infection, Covid-19, that spread to every nation and greatly affected industries, including

the educational sector. Schools are challenged to engage with distance learning and even with post-pandemic, blended, or hybrid learning modalities (Estrellado, 2021). According to Pedrelli et al. (2015), mental health concerns such as depression, anxiety, and stress are common among college students. Unfortunately, it worsened and increased to as high as 60% during the pandemic, which brought about significant changes, challenges, and difficulty in adjustment in the field of education that involved adopting alternative instructional methods, such as using technology in the teaching and learning process (Abrams, 2022).

In the study of Casumpang et al. (2023), post-pandemic has caused mental distress to students and emphasized that transitioning to a post-pandemic learning environment presents challenges because of the complexity of balancing commitments alongside online learning. Furthermore, he mentioned that students feel more stressed and anxious, making them less motivated to learn (Casumpang et al., 2023; Estrellado, 2021). Moreover, it was reported by Fabella (2023) that pandemic impacted the adolescent's mental health and is frequently experienced by college students. This led to severe mental health concerns caused by anxiety, stress, and depression symptoms. Based on the records, there are more incidences of mental health concerns, depression, anxiety, and stress experienced by university students (Samaniego, 2022).

On the other hand, gender is an essential factor in better understanding the responses of females and males to depression, anxiety, and stress. Socially constructed differences in roles and responsibilities, status, and power between men and women contribute to differences in mental health, especially in seeking help from those who are affected. Moreover, men and women think and act the way they do due to cultural ideas of femininity and masculinity, not because of role identities or psychological qualities. According to studies, Filipino women were twice as likely as males to experience mental health issues like depression (Alibudbud, 2023). This was corroborated by Parrado-González and León-Jariego (2020), stating that women had worse mental health and more emotional distress than men.

Addressing these mental health concerns may help students in their multifaceted academic journey in the post-pandemic period. World Health Organization (2022) highlighted that all countries must improve the implementation of mental health action plans to protect better and prevent mental health problems. It also emphasized that school health services must deliver mental health care to meet and reach the encompassing mental health needs of the students. However, Abrams (2022) reported that schools are reevaluating their approach amidst the increasing need for mental health care. Notably, according to (Alibudbud, 2021), developing countries such as the Philippines experienced increasing local and international pressure to incorporate mental health in education because of discrimination, stigma, and lack of mental health services and programs.

The Philippine education system may start strengthening its program and policy to raise awareness of mental health issues, identify and support those at risk, facilitate access to treatment, and improve mental health intervention and support to promote healthy student well-being. Although many studies examine students' levels of depression, anxiety, and stress, there is insufficient data in the post-pandemic period relative to these variables.

Hence, pursuing this study to explore the evolving environment of mental health in educational settings by examining the extent of depression, anxiety, and stress among Filipino college students is deemed necessary. Moreover, mental health challenges may vary across genders. Thus, shedding light on gender differences to the extent of depression, anxiety, and stress would lessen, if not eliminate, the potential impact of Covid-19 post-pandemic on mental health

disparities. Understanding these gender differences is critical to developing targeted interventions, doable programs, and support systems tailored to the diverse needs of college students.

In summary, this study fills a research gap on depression, anxiety, and stress of college students during the post-pandemic era, concentrating on gender disparities. By creating new research in this field, this study hopes to influence practices and policy recommendations that assist college students' mental health and, in turn, create a welcoming and inclusive learning environment for all.

## **2. Theoretical basis**

The theory of integration model by Johari and Marzuki (2013) includes the stress life event theory, Freud's (1926) anxiety theory, and Beck's cognitive theory, which is used to discuss the study of stress, anxiety, and depression experienced by the respondents during the post-pandemic period.

Beck's Cognitive Theory of Depression (2008) posits that depression arises from distorted thinking patterns and negative cognitive schemas. According to this framework, individuals with depression often perceive themselves, the world, and the future in unfavorable and unrealistic terms. Cognitive distortions such as overgeneralization, personalization, and catastrophizing contribute to the persistence of depressive symptoms. In the post-pandemic era, disruptions to social interactions, changes in academic routines, and uncertainties about the future may exacerbate these cognitive distortions among college students. Beck's (2008) theory highlights the importance of addressing maladaptive thought patterns and cognitive distortions in mitigating depressive symptoms and promoting mental well-being. This framework enables researchers to understand how college students may interpret and respond to the challenges posed by the post-pandemic landscape. However, it may overlook other important factors contributing to depression and may not fully capture the unique stressors and coping mechanisms experienced by Filipino college students.

Sigmund Freud's (1926) theory of anxiety suggests that anxiety stems from perceived threats or harassment an individual encounters. According to Freud (1926), anxiety is inherent to the instinct for self-preservation and manifests as a sense of panic in response to perceived threats in the environment. In the post-pandemic landscape, uncertainties surrounding health, finances, and the future may evoke feelings of anxiety among college students. Social distancing measures, academic uncertainties, and disruptions to daily routines may exacerbate these feelings, leading to heightened levels of anxiety. Freud's (1926) Theory of Anxiety offers foundational insights into anxiety as stemming from perceived threats and the instinct for self-preservation, which is particularly relevant in the context of uncertainties surrounding health, finances, and the future. Nonetheless, its heavy reliance on psychoanalytic concepts and limited consideration of cognitive and situational factors may restrict its applicability.

The stressful Life Events Theory pioneered by Holmes and Rahe (1967) posits that significant life events can induce stress, impacting an individual's physical and mental well-being. According to this framework, stress arises from experiences that challenge an individual's coping mechanisms and adaptive responses. In the context of Filipino college students during the post-pandemic period, various stressors such as academic disruptions, financial strain, social isolation, and health concerns may contribute to heightened levels of stress. The theory emphasizes the cumulative effect of negative pressures on daily life and underscores the importance of understanding how these stressors influence mental health outcomes.

### 3. Methodology

This research investigates the level of depression, anxiety, and stress among Filipino college students during the post-pandemic period. A descriptive-quantitative research design was utilized to collect the data.

The respondents of the study are comprised of Filipino college students who took General Education I subject - Understanding the Self- aged 18 to 25 years old at a state university in Negros Oriental. The researchers determined the sample size by using the stratified random sampling method (Nguyen et al., 2021), aggregating the number of students enrolled in the subject GE 1 from the Colleges of Business Administration (CBA), Arts and Sciences (CAS), Criminal Justice Education (CCJE), Industrial Technology (CIT) and Nursing, Pharmacy and Allied Health Sciences (CNPAS) to ensuring a proportionate representative sample from each academic unit. The sample size was computed based on the total population. Next, a proportion of the sample from each stratum was calculated based on the computed sample size and population. After adding the contribution from each stratum, six hundred thirty ( $n = 630$ ) students were selected. Further, the researchers identified the number of participants according to their gender. The participants within each stratum were selected randomly using established randomization procedures. This method enhances the research's methodological robustness, facilitating an accurate exploration of the diverse perspectives within the university's various academic disciplines (Pennsylvania State University, 2023). This approach was meticulously applied to guarantee fair representation across different genders and academic disciplines, enhancing the study's reliability and ensuring that findings accurately reflect the diverse perspectives within the university community. The selected respondents were formally informed through a letter of correspondence stipulating the study's objectives. The same letter was sent to the respondent's respective deans and subject instructors.

The researchers adopted a standardized instrument called the Depression, Anxiety, and Stress Scale-21, which was developed by Lovibond and Lovibond (1995). DASS-21 is widely used as a screening tool that measures depression, anxiety, and stress symptoms separately (Moya et al., 2022), and a study by Nguyen et al. (2021) reported that this scale is reliable and suitable for assessing symptoms, especially on depression, anxiety, and stress. This aimed to determine the emotional states of depression, anxiety, and stress. A 4-point rating system, ranging from "Did not apply to me at all" to "Applied to me very much or most of the time," is used to score the 21 items in this exam. Three scales are included in the questionnaire to measure depression, which also evaluates dysphoria, hopelessness, devaluation of life, self-depreciation, lack of interest or involvement, anhedonia and inertia, anxiety, which assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect, and stress, which evaluates arousal from nerves, difficulty relaxing, being easily upset, agitated, irritable, or overly impatient, among other things. The DASS-21's Cronbach's Alpha was 0.959, indicating high internal consistency. For anxiety, depression, and stress, the corresponding Cronbach's Alpha values were 0.87 (95%CI 0.86 to 0.89), 0.92 (95%CI 0.91 to 0.93), and 0.89 (95%CI 0.88 to 0.90), respectively. The DASS-21's total scores will be multiplied by two to determine the scale's final score and interpreted according to the standard process (Lovibond & Lovibond, 1995).

Respondents of the study were given a copy of the research instrument. An informed consent that contains a thorough description of the research, its purpose, and how data gathered will be utilized was provided to the respondents. The researcher administered the questionnaire to the respondents in April 2023 through a combination of both online via Google Forms and actual distribution of printed questionnaires, which were deployed onsite, after which, on May 2023, researchers encoded and analyzed the data and interpreted the results. There were no

missing data during the data gathering as the researchers thoroughly checked the items before leaving the area where they were conducted. Researchers only selected those who voluntarily gave and adhered to the informed consent. Confidentiality and privacy were thoroughly maintained and are protected by the Data Privacy Act of 2012 (Secureprivacy, 2025).

Descriptive and inferential statistics were used to analyze the data gathered. Specifically, frequency, percentage, mean, and standard deviation were used to present the level of depression, anxiety, and stress of female and male Filipino college students. Mann Whitney U-test was used to find the difference in the level of depression, anxiety, and stress between female and male respondents.

To ensure the participant's safety, the researchers have adhered to the code of ethics and professional standards for psychology practitioners (Psychological Association of the Philippines, 2022). In addition, the provisions stipulated in the 2022 National Ethical Guidelines for Research involving human participants were also adhered to accordingly.

In the case of publication, respondents were informed and kept anonymous. Data gathered from the survey, analysis, and interpretation were secured, and only the researchers could access the data. Data was stored in device/s with a passcode and locked steel cabinets until research was completed. Further, researchers took steps to prevent non-maleficence by ensuring that participating in this study would not harm the respondents.

## 4. Result and discussion

### 4.1. Result

This section presents and analyzes the data gathered through a survey of six hundred and thirty Filipino college students studying in a state university during the post-pandemic period, which were identified as respondents in this study.

#### Table

Table 1 presents the profile of Filipino college respondents.

**Table 1**

*College Profile of College Respondents*

College		<i>f</i>	<i>Percentage</i>
CBA			
	BS Accountancy	39	6.2
	BS Business Administration	192	30.5
	BS Hospitality Management	91	14.4
CAS			
	BS Computer Science	24	3.8
	BS Information Technology	33	5.2
CCJE	BS Criminology	77	12.2
CIT	BS Industrial Technology	105	16.7
CNPAHS	BS Pharmacy	30	4.8
	Associate in Medical, Dental, and Nursing Assistant	39	6.2

Note. n = 630

Source. Data analysis result of the research

Table 1 shows the distribution of respondents according to the colleges they are enrolled in. The findings utilized the frequency count and percentage.

**Table 2**

*Distribution of Gender among College Respondents*

Gender	<i>f</i>	%
Female	400	63.5
Male	230	36.5
<b>n</b>	630	100.0

Source. Data analysis result of the research

Table 2 summarizes the gender distribution in the study population. The data is heavily comprised of female respondents. Of 630 Filipino college students enrolled in the GE 1 Understanding the Self course, 63.5 % were female, while 36.5% were male.

**Table 3**

*Level of Depression, Anxiety, and Stress Between Gender*

Variable	Gender	Min	Max	Mean	Standard Deviation
Depression	Female	0	48	15.93	9.32
	Male	0	42	14.47	9.03
Anxiety	Female	0	42	18.20	9.62
	Male	0	42	14.77	9.16
Stress	Female	0	42	16.61	8.60
	Male	0	42	14.80	8.44

Note. Depression subscale: Normal (0-9), Mild (10-13), Moderate (14-20), Severe (21-27) and Extremely Severe (28+); Anxiety subscale, Normal (0-7), Mild (8-9), Moderate (10-14), Severe (15-19) and Extremely Severe (20+); and Stress subscale Normal (0-14), Mild (15-18), Moderate (19-25), Severe (26-33) and Extremely Severe (34+)  
Source. The data are from "Depression Anxiety Stress Scales (DASS--21, DASS--42)" by S. H. Lovibond and P. F. Lovibond, 1995 (<https://doi.org/10.1037/t01004-000>)

Table 3 presents the level of depression, anxiety, and stress experienced by female and male Filipino college respondents. Among females, the average scores showed that they experienced moderate levels of depression, severe levels of anxiety, and a mild level of stress. On the other hand, males experience a moderate level of depression and anxiety and a normal level of stress.

**Table 4**

*Significant Difference in the Level of Depression, Anxiety, and Stress Between Male and Female College Students*

Variable	Gender	p-value
Depression	Female	0.012
	Male	
Anxiety	Female	0.000
	Male	
Stress	Female	0.000
	Male	

Note. \* $p < .05$

Source. Data analysis result of the research

A Mann-Whitney U test examining the significant difference in the level of depression, anxiety, and stress between female and male respondents is shown in Table 4. The results indicated that there was a significant difference in the level of depression, anxiety, and stress between female and male respondents ( $p < 0.05$ ). This suggests that the mental health experiences of female and male Filipino college respondents differ significantly.

#### **4.2. Discussion**

Mental health is associated with the individual's ability to become aware of their stressors, problems in life, satisfaction, self-fulfillment, and how they can contribute to society. Mental health can also differ in two ways, positive and negative. These concepts adhere to the individual development of the human, especially adolescents and developing teenagers (Tus, 2021).

In recent years, the significance of mental health has been underscored by organizations such as the World Health Organization, which asserts that mental well-being is pivotal for personal, community, and socio-economic development (World Health Organization, 2022). Furthermore, the World Health Organization (2022) highlights that individuals face heightened risks to their mental health when exposed to adverse circumstances spanning social, economic, geopolitical, and environmental realms. These risks manifest at various scales, both locally and globally, encompassing economic downturns, climate crises, and disease outbreaks.

The investigation of Filipino college students' levels of stress, anxiety, and depression offers insights that are consistent with psychological theories and the body of current literature. The results highlighted how susceptible female college students are to stress, anxiety, and depression in the aftermath of the pandemic. To reiterate, females experienced moderate levels of depression, signifying an experience of mild depressive symptoms that may imply a significant experience impacting daily life and functioning, a severe level of anxiety indicating frequent experiences of noticeable symptoms such as excessive worry and restlessness, and a mild level of stress suggesting manageable stress that does not significantly disrupt daily functioning.

On the other hand, males experience moderate levels of both depression and anxiety scores, denoting a noteworthy presence of depressive symptoms and noticeable anxiety symptoms characterized by excessive worry and restlessness. In contrast, the stress level for males was classified as usual, signifying lower symptom intensity and suggesting that the stress they experience is generally manageable without significant disruption to daily functioning. Interestingly, while both genders experience moderate levels of depression, comparative analysis indicates that there is a noticeable difference in the severity of symptoms.

In summary, the study emphasizes the gender variations in mental health experiences, supporting earlier findings by Tee et al. (2020) and Alibudbud (2023) that show female students are more prone to anxiety, stress, and depression than their male counterparts. Research by Wiklund et al. (2012), Chaplin et al. (2008), and Gao et al. (2020) further clarifies this sensitivity by indicating that social and physiological factors may be involved in women's increased emotional discomfort. Studies by Justo-Alonso et al. (2020) and Samaniego (2022) also showed that women expressed higher levels of anxiety than men did. However, male students showed lower stress levels. This may be attributed to cultural norms around masculinity that inhibit emotional expression, as mentioned in the works of Komiya et al. (2000) and Al-Qaisy (2011).

Furthermore, these findings are consistent with Freud's (1926) theory of anxiety, which holds that people experience fear as a result of perceived threats or harassment. The high levels of anxiety that females have expressed could be explained by the increased uncertainty

surrounding their health, money, and future in the post-pandemic environment. Furthermore, Beck's Cognitive Theory of Depression (2008) sheds light on cognitive errors and unfavorable thought patterns that, particularly in the face of scholastic setbacks and social isolation, may exacerbate depressive symptoms among college students.

Depression, anxiety, and stress are recurrent themes in mental health discourse linked with individual well-being and societal contributions (Tus, 2021). These challenges, exacerbated by the pandemic, emphasize the vulnerability of college students to mental distress (Eisenberg et al., 2007). Despite this vulnerability, discrepancy exist between genders, with females often exhibiting higher levels of emotional discomfort and worse mental health outcomes (Chaplin et al., 2008; Justo-Alonso et al., 2020). The manifestation of these gender differences can be attributed to physiological factors, societal norms, and coping mechanisms (Afifi, 2007; Gao et al., 2020). While studies suggest females are more susceptible to depression and anxiety (Alibudbud, 2021; Tee et al., 2020), contrasting findings highlight the prevalence of depressive disorders among male students (Al-Qaisy, 2011; Wong et al., 2006). These discrepancies underscore the multifaceted nature of mental health experiences, influenced by cultural, biological, and psychological factors. These observed discrepancies emphasize the importance of considering gender-specific factors in understanding and addressing mental health challenges within this demographic.

## **5. Conclusions and recommendations**

This quantitative study focused on the Gender differences in depression, anxiety, and stress among Filipino college students during the post-pandemic period in Negros Oriental State University, Dumaguete City, with the use of Depression, Anxiety and Stress Scale - 21 by Lovibond and Lovibond (1995). The data was gathered last April 2023 with the supervision of an expert (registered psychologist). Data were collected from students during the actual test administration. The study did not delve into other aspects of the participants and focused only on depression, anxiety, and stress.

This study provides evidence that, despite the state of public health emergency being lifted, the presence of mental health issues, such as depression, anxiety, and stress, are still evident and experienced by college students in the post-pandemic period. Hence, manifestations of moderate to severe levels of depression, anxiety, and stress have been observed.

The findings of this study on Filipino college students reveal evident gender differences in mental health experiences, with female students exhibiting higher susceptibility to depression, anxiety, and stress. This is because of the emergence of social and physiological factors and cultural norms invalidating how males approach unprecedented problems because they are deemed to exhibit tougher and more vigorous physical and psychological fortitude than females. Nonetheless, it is imperative to acknowledge their experiences, particularly given that the data illustrates a spectrum of mental health challenges ranging from moderate to severe levels of depression, anxiety, and stress.

Despite the gender differences that still exist, it is critical to implement a comprehensive strategy for mental health support, such as programs that are an avenue for them to learn and express themselves by providing educational seminars that would help students learn more about handling their emotions or providing them an activity that would allow them to express their feelings through open dialogue in a focus group that takes into account the various needs and experiences of every student, regardless of gender. To adequately assist college students' well-

being, educational institutions must create comprehensive and customized (gender-specific) mental health programs in response to the range of mental health issues this study found, such as a regular semestral orientation on school-based mental health education. Researchers recommend using the Behavioral Health Team Model of Raviv et al. (2022), a system care intended for students developed to promote and implement a school-based mental health program and services to provide comprehensive intervention. This model is designed to establish a multi-disciplinary team to maximize resources and collaboration; this program provides early identification of behavioral and mental health needs that match and connect students to appropriate interventions through informed decision-making. Moreover, this ensures the monitoring of the student's progress, and based on the data, schools can innovate and generate intervention programs to support their students' mental health properly.

In addition, future researchers could include a larger sample and explore other demographic variables, such as economic status, that can also be a factor that can impact the student's mental health state. As well as exploring the participants' ideas on the possible activities or seminars they are interested in about mental health as part of the needs analysis. Longitudinal studies are recommended to monitor the student's progress over the years that the post-pandemic has passed.

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