
Correlation between University Students' Psychosocial Disorder, Sociodemographic, and Flexible Learning Condition during the COVID-19

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ABSTRACT

This study investigated the severity of psychosocial disorders among college students attending higher education institutions, such as depression, anxiety, and stress. The study also examined the relationship between psychosocial disorders of students and sociodemographic variables, the availability of resources, and the adopted modality for flexible learning. Following a descriptive research approach, this study surveyed 54 undergraduate students in Bukidnon, Philippines, during the second semester of 2021-2022. The survey utilized DASS-21 by Lovibond and Lovibond (1995) to measure depression, anxiety, and stress. The results revealed that students reported a severe degree of anxiety, moderate depression, and mild stress due to the pandemic. However, among the sociodemographic variables, only age showed a significant negative correlation with stress level with $r=-0.311$, $p=.022$. Further, the results indicated no significant correlation between students' psychosocial disorders and the availability of resources and adopted modality for flexible learning. Considerable care has to be taken into account as the data were acquired online, which has constraints and is from a relatively small sample. This research is anticipated to have significant consequences for various stakeholders and institutions as it may assist them in taking the necessary interventions.

KEYWORDS: *DASS-21, university students, sociodemographic, flexible learning, COVID-19*

INTRODUCTION

Various educational institutions have adopted flexible learning worldwide to contain the spread of COVID-19. Countries have implemented stringent quarantine policies in response to the COVID-19 virus's ability to evolve and become more contagious after a year (Wang et al., 2021). The outbreak caused by COVID-19 has altered students' academic and personal lives (Zentari et al., 2020) and affected the psychosocial disorder of university students to a certain degree; which levels of anxiety and stress experienced by college students were already a cause for public health concern (Durbas et al., 2021).

Recent studies on the impact of the pandemic on psychosocial disorder have revealed considerable psychological and social impacts on the population, particularly among college students who are more likely to suffer post-traumatic stress disorder, anxiety, depression, and

other signs of distress (Saladino et al., 2020). In fact, in the European Union, particularly in France, Germany, Poland, and Spain, there was reported an increase in stress and anxiety among university students by about 60% due to the COVID-19 pandemic (Voltmer et al., 2021). A study was also conducted among 116 high school and college students in the US and revealed that the COVID-19 pandemic has led to an extremely high degree of stress and mental health with a greater prevalence among female students (Aiyer et al., 2020). In China, a study was also conducted among 756 Chinese medical students. It revealed that gender, grade, psychosocial stressors, specific online learning disorders (flexibility), and the online learning environment (teaching, social and cognitive presence) were predictors of perceived stress (Wang et al., 2021). However, studies on the effect of the pandemic on psychosocial disorders among university students have not been extensively explored in the Philippines.

Hence, this study was conducted to determine the psychosocial disorder of university students in terms of depression, anxiety, and stress levels using the Depression, Anxiety, and Stress Scale (DASS-21) adopted from Lovibond, SH & Lovibond, PF (1995) during the second semester of the school year 2021-2022. Furthermore, the study attempted to explore the correlation between the psychosocial disorders experienced by students and their sociodemographic profile and the availability of resources for flexible learning modalities.

Statement of the Problem

The study specifically aimed to:

1. Determine the psychosocial disorders of students using DASS-21; and
2. Explore the correlation between psychosocial disorder and sociodemographic profile and the availability of resources utilized by students for flexible learning modalities.

Conceptual Framework

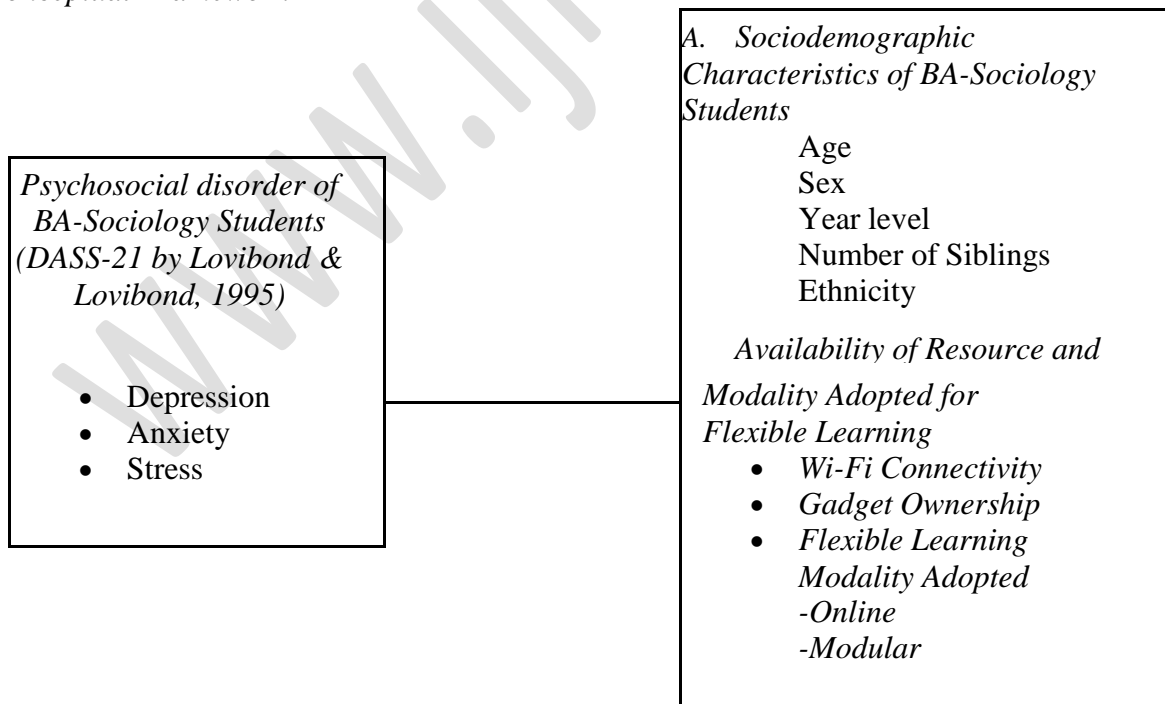


Figure 1: Schematic Diagram of the Study

In the context of this study, psychosocial disorders are delimited to depression, anxiety, and stress. Depression is defined by the World Health Organization (WHO) as a prevalent mental disorder marked by persistent melancholy and a loss of interest or pleasure in formerly rewarding or pleasurable activities. Anxiety is the expectation that a possible future threat may materialize (Kupfer, 2015). Anxiety disorders are characterized by excessive and persistent fear and worry, often concomitant behavioral issues. Stress is a non-specific response of the body to demand, such as when one is pushed out of the comfortable equilibrium (Selye, 1946). It is a common reaction to catastrophes or emergencies (Trujillo et al., 2007).

Using the DASS-21 developed by Lovibond and Lovibond (1995), depression, anxiety, and stress levels among BA – Sociology students were measured. The DASS- 21 scales consist of seven items divided into subscales with identical content and assessed on a Likert scale ranging from 0-(not at all) to 3 (applied regularly or frequently). The DASS 21 provides less information about specific symptoms, but its factor structure is comparable (Wiseman et al., 2015).

Moreover, psychosocial disorders can be influenced by factors such as the sociodemographic profile and the learning environment (Wang et al., 2021). Thus, the study explored the correlation between students' psychosocial disorders and sociodemographic profiles such as age, sex, year level, number of siblings, and ethnicity. The study also determined the correlation between the availability of resources utilized by students (WIFI access and gadget ownership) and the modality adopted for flexible learning with their depression, anxiety, and stress levels.

METHODOLOGY

Research Design

The study utilized a descriptive survey method to determine the psychosocial disorder of university students and its correlation with their sociodemographic profile and the availability of resources and modalities adopted for flexible learning. A descriptive survey is a process of collecting data to answer a research question about the status of the individuals being examined (Fraenkel and Wallen, 2000). This research strategy was chosen to obtain extensive information on the nature of the phenomenon's variables to better describe and comprehend it from the subjects' perspectives.

Respondents of the Study

This study surveyed 54 BA – Sociology students in an academic institution in Bukidnon during the second semester of 2021-2022. The respondents were predominantly female (n=40), with an average age of 23.02. The sociodemographic characteristics of students, availability of resources, and adopted modality for flexible learning are presented in table 1.

Table 1

Sociodemographic characteristics, availability of resources and adopted modality for flexible learning of BA – Sociology students, Bukidnon, 2nd Semester SY 2021- 2022 (N=54)

<i>Characteristics</i>		<i>f</i>	<i>%</i>	<i>Mean</i>	<i>SD</i>
Sex	Male	14	25.9		
	Female	40	74.1		
Year Level	2nd-year level	13	24.1		
	3rd-year level	11	20.4		
	4th-year level	30	55.6		
Age (years)				23.02	2.73
Number of Siblings				3.69	2.10
Ethnicity	Non-IP	43	79.6		
	IP	11	20.4		
Availability of WIFI	No WIFI Connection	41	75.9		
	With WIFI Connection	13	24.1		
Gadget Ownership	With Smartphone	34	63.0		
	Without Smartphone	20	37.0		
FLM Adopted	Online	40	74.1		
	Modular	14	25.9		
	Total	54	100.0		

Sampling Technique

This study employed the accidental sampling method. Accidental sampling is a sort of non-probability sampling in which participants are not selected at random. One of the benefits of accidental sampling is that it is inexpensive, efficient, and straightforward to execute (Jager et al., 2017).

Survey Instrument

The study utilized a survey questionnaire consisting of two sections. In the first section, sociodemographic variables of respondents, such as sex, age, year level, school year, number of siblings, and ethnicity, were determined. Also, it provided data on the students' availability of resources (WiFi connection and gadget ownership) and adopted modality (online or modular) for flexible learning. To determine students' depression, anxiety, and stress levels in section 2, the researcher adopted the Depression, Anxiety, and Stress Scale - 21 Items (DASS-21) by Lovibond and Lovibond (1995). Each category in the DASS-21 consists of seven items. The DASS-21 was chosen because it has been validated and shown to be a trustworthy screening instrument for symptoms of depression, anxiety, and stress, a unique characteristic of the tool. In addition, no specialist training is necessary to administer the instrument. The DASS- 21 has been employed extensively in both clinical and non-clinical samples, including the population of injured individuals. The DASS-21 provides less information about specific symptoms, but its factor structure is comparable (Wiseman et al., 2015).

The rating scale is as follows: (0) did not apply to me at all; (1) applied to me to some degree, or some of the time; (2) applied to me to a considerable degree or a good part of the time; and (3) applied to me frequently or frequently. The scores on the DASS- 21 will need to be multiplied by 2 to calculate the final score. The severity ratings are presented in table 2.

Table 2

Depression, Anxiety, and Stress Scale and Clinical Severity Ratings

Rating	Depressio n	Anxiet y	Stres s
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely severe	28+	20+	34+

Data Collection

The researcher obtained permission from the chairperson and teachers of the possible respondents. The participants were contacted and informed of the purpose of the study. DASS-21 questionnaire through Google form was delivered to the students' email addresses. Study respondents were informed of the confidentiality and anonymity of their responses.

Statistical Analysis

The data collected were processed using MS Excel and SPSS (version 22.0). This study utilized the following statistical methods: For problem 1, descriptive statistics such as the mean and the standard deviation were employed to determine the psychosocial disorder levels of students. For problem 2, Pearson's r for the relationships between psychosocial disorders, sociodemographic characteristics, availability of resources and modality adopted for flexible learning at 0.05 level of significance.

RESULTS AND DISCUSSION

The Psychosocial Disorder Severity of BA – Sociology Students

Recent studies have shown the pandemic's effect on students' psychosocial aspects, including anxiety, depression, and stress, which have become prevalent among them (Thakur, 2020; Gazmararian et al., 2021). Using the DASS – 21, this study examined depression, anxiety, and stress as psychosocial disorders. Results indicated that among the three categories comprising psychosocial disorder, the anxiety component received the highest rating level, which was *severe*. Anxiety is the anticipation of potential future danger (Kupfer, 2015). During the COVID-19 pandemic, a significantly high prevalence of anxiety was seen among students. In addition, spending the quarantine in seclusion, worrying about infection for themselves and others, having an unknown future, sleeping poorly, and moving to online learning were all connected with more significant anxiety during the epidemic (Jehi et al., 2022).

The level of depression among students was determined to be *moderate*. Although moderate depression is less severe than severe depression, it nonetheless causes problems at work, school, home, or social (CDCP, 2013). Despite the significance of COVID-19 preventative measures, it has long- and short-term effects on students' physical and emotional health

(Radwan et al., 2020). These adverse effects may affect students' emotional responses, such as depression (Gao et al., 2020).

Moreover, the stress level of students was reportedly *mild*. Stress has been demonstrated to be one of the leading causes of various physical and mental problems; as a result, students' mental and physical health will be adversely affected by prolonged stress (Malik & Javed, 2021). Further, the student's ability to adapt to the changes may be insufficient, such that these inefficiencies and disruptions result in poor performance outcomes, intensify the feeling of stress, and may cause increased levels of depressive symptoms among students (Zunhammer et al., 2013).

Table 3

Summary of Psychosocial Disorder Severity of BA – Sociology Students (N = 54)

Psychosocial Disorder	Mean	SD	Description
Depression	15.04	9.42	Moderate
Anxiety	16.33	8.93	Severe
Stress	16.00	7.52	Mild

Correlation between Psychosocial Disorders and Sociodemographic Profile

Several studies have also demonstrated sociodemographic factors' impact on students' psychosocial aspects. For instance, gender, age, educational level, and employment status appear to be variably associated with stress levels during the COVID-19 crisis (Lei et al., 2020; Park et al., 2020; Rodriguez et al., 2020). This has resulted in possible psychological effects of quarantine as a traumatic experience during the COVID-19 pandemic (Brooks et al., 2020; Torales et al., 2020). Depression, anxiety, and stress among Brazilian and Jordanian university students were also prevalent during the quarantine period (Lopes AR, Nihei, 2021; Hamaideh et al., 2022).

Of the three domains of psychosocial problems in this study, it was found that depression, anxiety, and stress were significantly associated. Nevertheless, regarding the students' sociodemographic characteristics, only age showed a significant negative correlation with stress level with $r = -0.311$, $p = .022$. Further, results indicated a weak negative correlation between the psychosocial aspects and the other sociodemographic like depression and year level and age, anxiety and the number of siblings, ethnicity, grade level, and age. The number of siblings and sex had a weak but positive correlation with stress. Age, gender, and economic level were negative predictors of depression, anxiety, and stress, whereas family size was the only positive predictor of stress (Radwan et al., 2020). A strong correlation was also found between depression, stress, and anxiety, with sociodemographics (e.g., gender, income, and smoking status) among undergraduate students (Hamaideh et al., 2022).

However, a more in-depth investigation of the sociodemographic features can be conducted using a larger population from various courses. A post-test result of the student's DAS should also be taken to identify the relationship between these variables and depression, anxiety, and stress to find the reliability and validity of the results.

Table 4

Correlation Matrix between BA – Sociology Students' Sociodemographic Profile and DASS-21 scores, Bukidnon, 2022 (N=54)

Characteristics	Year level	Age	Sex	Number of siblings	Ethnicity	Depression	Anxiety	Stress
Year level	<i>r</i> 1.000							
	<i>p</i> .							
AGE	<i>r</i> .375***	1.000						
	<i>p</i> .005	.						
SEX	<i>r</i> -.036	-.218	1.000					
	<i>p</i> .795	.113	.					
Number of siblings	<i>r</i> .214	.168	-.078	1.000				
	<i>p</i> .120	.226	.577	.				
Ethnicity	<i>r</i> -.049	.047	.127	-.009	1.000			
	<i>p</i> .723	.736	.361	.949	.			
Depression	<i>r</i> -.065	-.227	.031	.099	-.206	1.000		
	<i>p</i> .640	.099	.824	.478	.135	.	.000	
Anxiety	<i>r</i> -.030	-.189	.168	-.164	-.125	.707***	1.000	.707**
	<i>p</i> .832	.171	.226	.236	.369	.000	.	.000
Stress	<i>r</i> -.037	-.311*	.233	.173	-.216	.824***	.707***	1.000
	<i>p</i> .790	.022	.090	.212	.117	.000	.000	.

*. Correlation is significant at the 0.05 level (2-tailed).

Correlation between Psychosocial Disorders and Availability of Resources and Adopted Modality for Flexible Learning

Online learning disorders (perseverance, attitude, and flexibility) and the online learning environment (teaching, social, and cognitive presence) were predictors of perceived stress (Wang et al., 2021). During the pandemic, students in the Philippines had a higher risk of poor mental health due to the shift in flexible learning methods (Malolos et al., 2021). During the pandemic, the digital divide resulting from socioeconomic differences might lead to mental health inequities among students (Cleofas & Rocha, 2021). It was found out students from resource-scarce areas may be at risk for mental problems during the COVID-19 epidemic due to social and cultural reasons (Hou et al., 2020), which were also observed in the Philippines, a developing nation with scarce resources (Alibudbud, 2021).

The results indicated no significant correlation between students' psychosocial disorders and the availability of resources and adopted modality for flexible learning. This can be attributed to the interplay of other external factors that can affect students' psychosocial disorders.

Table 5

Correlation Matrix between university students' flexible learning condition and DAS- 21 scores, Bukidnon, 2022 (N=54)

Variable		WiFi Connectivity	Gadget Ownership	Modality Adopted	Depression	Anxiety	Stress
WiFi Connectivity	<i>r</i>	1.000					
	<i>p</i>	.					
Gadget Ownership	<i>r</i>	.163	1.000				
	<i>p</i>	.240	.				
Modality Adopted	<i>r</i>	-.037	-.509**	1.000			
	<i>p</i>	.793	.000	.			
Depression	<i>r</i>	-.023	-.136	.029	1.000		
	<i>p</i>	.869	.326	.833	.		
Anxiety	<i>r</i>	-.010	-.104	.007	.707**	1.000	
	<i>p</i>	.943	.454	.960	.000	.	
Stress	<i>r</i>	.024	.051	-.068	.824**	.707**	1.000
	<i>p</i>	.865	.713	.625	.000	.000	.

Flexible Learning

*. Correlation is significant at the 0.05 level (2-tailed).

CONCLUSION

The study provides baseline data regarding university students' psychosocial disorders such as depression, anxiety, and stress levels. The results revealed that the anxiety level of students was severe, while depression and stress levels were moderate and mild. Despite this, there is a significant negative association between stress and age. However, the results indicated no significant correlation between students' psychosocial disorders and the availability of resources and adopted modality for flexible learning.

Considerable care should be exercised while evaluating the study's results. The most evident and significant limitation of this study is the restriction on generalizability imposed by the sample size, diversity of groups represented, and data-gathering procedure. Second, pre- and post-DASS-21 findings must be considered to determine if there are changes in the student's psychosocial disorder scores. In addition, the interaction of other external elements, such as cultural, social, and political aspects, should be considered as test factors. The administration, particularly the guidance office, faculty, staff, and parents, must be informed of the status of the students' DAS to assist students and prepare an appropriate action plan for students exhibiting higher levels of depression, anxiety, and stress.

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