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Substance Use, Peer Social Comparison, Academic Stress and Psychological Well-Being of Students in Tertiary Institution in Delta South Senatorial District

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

This study examined the relationship between substance use, peer social comparison, academic stress and psychological wellbeing of tertiary institution students in Delta South Senatorial District. The study employed a correlational research design. The population for the study consisted of 2553 students of tertiary institutions in Delta South Senatorial District. The sample size was 332 students. A questionnaire was used for the study. The questionnaire was validated by experts' judgement and factor analysis. Cronbach alpha reliability coefficient was used to estimate the reliability index of the instrument. The Pearson's Product Moment Correlation Coefficient of Determination was used to answer the research questions, multiple regression and fisher-z statistics were used to test the hypotheses at 0.05 level of significance. The findings of the study revealed that a relationship exists between substance use, peer social comparison, academic stress and psychological well-being of

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students in tertiary institutions; and that a relationship exists between academic stress and psychological well-being of students in tertiary institutions. However, no relationship exists between substance use and psychological well-being and no relationship exists between peer social comparison and psychological well-being of students in tertiary institutions. The study also found that no significant moderating impact of sex on the relationship between substance use and psychological well-being peer social comparison and psychological well-being and between academic stress and psychological well-being of students. The study recommended that institutions should establish holistic mental health programmes that address the interplay of substance use, peer social comparison, academic stress, and psychological well-being.

Keywords: Substance use; peer social comparison; academic stress; psychological well-being; students.

1. INTRODUCTION

Tertiary institution students represent higher percentages of adolescent, which is the period that marks transition from youthful age to adulthood. It represents a transitional period of a new independence life from their parents and a dependent life at school. The period is characterized by rapid interrelated changes both of body, mind and social relationship (Amawulu & Kurokeyi, 2018). The entrance to tertiary institutions marks a period of transition for young people. During this period of transition, students encounter fresh challenges, including the need to make independent decisions regarding their lives and academics. They must adapt to the academic requirements of a less-structured learning environment and engage with a diverse array of unfamiliar individuals. Moreover, a significant number of students, possibly for the first time, have to depart from their homes and separate from their support systems. These challenges can impact the psychological well-being of the students.

Psychological well-being is defined as a combination of positive circumstances in all aspects of life, such as contentment, both physically and spiritually, as well as optimal function. In another study, mental well-being is defined as a positive and sustainable mental state that allows individuals, groups, and nations to thrive and flourish [1]. Psychological well-being is more than just feeling good all of the time; it also includes negative emotions such as frustration, failure, and sadness, all of which are natural aspects of life. Negative emotions can have a negative relationship with health and happiness over time. If not handled properly, this can have negative relationship with an individual's psychological well-being.

A person with a high psychological well-being will live a happy life, be satisfied with their professional and personal lives, and be capable and well-supported [2]. Psychological well-being is important in the life of students in tertiary institutions. The link between health and well-being and positive academic performance is well researched as studies also highlighted positive associations of life satisfaction with school performance and academic achievement. In general, an improved psychological well-being boosts intrinsic motivation, reduces disciplinary issues, enhances academic performance, elevates satisfaction with school, and contributes to the overall flourishing of individuals, communities, and nations (Buecker et al., 2018).

Poor psychological well-being on the other hand, can have significant and far-reaching relationship with students in tertiary institutions. These relationships can impact various aspects of their life, including their academic performance, social relationships, physical health, and overall quality of life. Students experiencing poor psychological well-being may struggle to concentrate, study effectively, and complete assignments on time. This can lead to a decline in academic performance, including lower grades and a higher risk of academic probation or dropout. Poor psychological well-being often accompanies increased stress and anxiety levels. Excessive stress can make it difficult for students to manage their workload and cope with the demands of their coursework. Students with poor psychological well-being may lose motivation and interest in their studies. This can result in decreased class attendance, participation, and engagement in academic activities.

Poor psychological wellbeing can lead to social withdrawal and isolation. Students may struggle to connect with their peers, participate in extracurricular activities, or build supportive social networks. Poor psychological well-being can have physical health repercussions,

including disrupted sleep patterns, fatigue, and an increased susceptibility to illnesses. Students may also engage in unhealthy coping mechanisms, such as substance abuse, which can further compromise their physical health. Psychological well-being issues can erode self-esteem and self-confidence. Students may doubt their abilities, leading to a negative self-image and reluctance to take on challenges or seek help when needed.

Poor psychological well-being can hinder a student's ability to plan for their future and set career goals. They may struggle to make decisions about their academic and career paths. Students experiencing psychological distress may be more vulnerable to substance abuse as a means of coping with their emotional pain. This can lead to addiction issues and further health problems. In severe cases, poor psychological well-being can lead to thoughts of self-harm or suicide. This is a critical concern and requires immediate intervention and support. Poor psychological well-being can strain relationships with family, friends, and romantic partners. Students may find it challenging to communicate their feelings and needs to loved ones. Poor psychological well-being can result in financial problems, as students may struggle to manage their finances effectively or may incur medical expenses related to psychological well-being treatment.

In addition to the imperative for student development programs to prioritize psychological well-being, another, and potentially more pressing, reason for the increasing interest in the psychological well-being of university students is the prevailing high levels of social distress and mental disorders [3]. The elevated prevalence of mental disorders and health issues related to stress within the student population appears to be a global phenomenon. A study involving 14,000 students across 19 universities in Australia, Belgium, Germany, Mexico, Northern Ireland, South Africa, Spain, and the United States revealed that 35% of the students reported symptoms aligning with at least one psychological disorder according to the Diagnostic and Statistical Manual, DSM-IV [4]. A longitudinal study over 23 years among the student population in Japan showed a significant increase in death related to suicide among the student population [5]. In another study, rates of treatment and diagnosis of psychological well-being among students increased significantly. The treatment rate rose from 19% in 2007 to 34% by 2017, and the proportion of students diagnosed with lifetime psychological well-being issues increased from 22% to 36% [6]. In certain investigations, the prevalence of mental distress among university students has been documented as reaching up to 40.9% [7]. A study by Manap et al. [8] focusing on 91 Malaysian undergraduates found varying degrees of depression experienced by the students at higher learning institutions; specifically, 19.8% experienced a moderate level, 14.3% mild, 8.8% severe, and 2.2% extremely severe levels.

Several factors have been identified to be responsible for the psychological wellbeing of students in tertiary institutions. However, for the purpose of this study, the researcher will look at the relationship among substance use, peer social comparison, academic stress and psychological wellbeing. Substance abuse, also known as substance use disorder, refers to a pattern of harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs. It involves the consumption of these substances in a way that leads to negative physical, mental, and social consequences for the individual. Substance abuse is characterized by a lack of control over one's substance use, preoccupation with obtaining and using the substance, and continued use despite adverse consequences [9].

Substance use can have a profound and negative relationship with the psychological well-being of students in tertiary institutions. For instance, substance use, including alcohol and illicit drugs, can lead to mood swings and emotional disturbances. While some substances may initially provide a temporary mood lift or euphoria, they are often followed by periods of depression, anxiety, or irritability. These mood fluctuations can disrupt a student's emotional well-being. Substance use is a known risk factor for the development of psychological well-being disorders such as depression, anxiety disorders, and substance use disorders themselves. Students who engage in substance abuse are at a higher risk of experiencing these psychological disorders, which can significantly correlate with their overall well-being [10].

Substance use can impair cognitive function, including memory, concentration, and problem-solving abilities. This can lead to academic difficulties and increased stress, further affecting a student's psychological well-being. Excessive substance use can lead to social isolation and

withdrawal from friends and social activities. This isolation can contribute to feelings of loneliness and depression. Substance use can strain relationships with family members, friends, and romantic partners. Conflicts arising from substance abuse can lead to breakdowns in communication and trust, resulting in increased stress and emotional distress. Substance use often requires the purchase of substances, which can lead to financial stress for students. The financial burden of maintaining a substance habit can cause anxiety and further exacerbate psychological issues [11].

Substance use can lead to engaging in risky behaviours, such as unprotected sex or driving under the influence. These behaviours can result in guilt, shame, and emotional distress. When students attempt to reduce or stop substance use, they may experience withdrawal symptoms and strong cravings. These physical and psychological symptoms can lead to increased stress and anxiety. Substance abuse can lead to a loss of motivation and interest in academic and personal goals. Students may struggle to find the motivation to attend classes, complete assignments, or pursue extracurricular activities, which can negatively correlate with their psychological well-being. Substance abuse can erode an individual's self-esteem and self-worth. Students may develop a negative self-image, which can contribute to feelings of hopelessness and depression. Substance use often results in academic consequences, such as poor grades, academic probation, or even expulsion. These academic setbacks can lead to feelings of failure and distress. Over time, substance abuse can escalate, leading to more frequent and higher doses of the substance. This escalation can worsen the psychological impact and create a cycle of dependence. It is important to note that the relationship with substance use on psychological well-being can vary widely depending on individual factors, the type and frequency of substance use, and the presence of underlying psychological well-being issues [12].

Another fact of concern in this study is peer social comparison. Peer social comparison refers to the process of individuals evaluating themselves or their own attributes, abilities, behaviours, or social standing by comparing themselves to their peers or individuals in their social group. This comparison can occur in various aspects of life, including academics, appearance, social status, achievements, and more. Peer social comparison is a fundamental part of human social interaction and plays a significant role in shaping our self-concept and self-esteem. In peer social comparison, individuals often identify a reference group, which consists of their peers or individuals they consider similar or relevant for comparison. These peers may include classmates, colleagues, friends, or others within a similar age group or social context. Peer social comparison can take two main forms: upward comparison and downward comparison. Upward comparison occurs when individuals compare themselves to peers who they perceive as doing better or having more favorable attributes or achievements. Upward comparison can sometimes lead to feelings of inadequacy or envy. In contrast, downward comparison involves comparing oneself to peers who are perceived as less successful or less fortunate. This type of comparison can boost one's self-esteem and feelings of superiority.

Peer social comparison can have both positive and negative relationship with the psychological well-being of students in tertiary institutions. These relationships depend on various factors, including the nature of the comparisons, individual differences, and the overall context. On the positive side, healthy peer social comparison can motivate students to strive for improvement. When students see their peers achieving academic or personal goals, they may be inspired to set higher standards for themselves, leading to increased motivation and a sense of purpose. Comparing oneself to peers can foster a sense of belonging and social support. Students may find encouragement and guidance from peers who have faced similar challenges or experiences. Positive comparisons with peers who are perceived as less successful can boost self-esteem. Feeling like one is doing better than others in certain aspects of life can enhance self-confidence and overall well-being. Observing the achievements of peers can help students set realistic and achievable goals. This can lead to a sense of direction and satisfaction when these goals are met (Kibret & Tareke, 2017).

On the negative side, constantly comparing oneself to peers, especially in a competitive academic environment, can lead to stress and anxiety. Students may feel pressure to measure up to perceived standards, leading to performance anxiety and worry about their standing relative to others. Negative social comparisons, where students feel they are falling behind or not measuring up to their peers, can

result in lower self-esteem and feelings of inadequacy. Chronic negative comparisons can contribute to feelings of depression. Students who consistently see themselves as inferior to their peers may experience sadness and hopelessness. Excessive peer comparison can lead to social isolation. Students who perceive themselves as falling short may withdraw from social interactions and extracurricular activities, impacting their overall social well-being. Students who are overly preoccupied with comparing themselves to peers may lose sight of their personal growth and self-development. They may prioritize external validation over intrinsic goals.

Academic comparisons can lead to intense pressure to excel academically. While competition can be healthy, excessive pressure can harm psychological well-being and well-being. Some students may experience an identity crisis when they continually measure themselves against others. They may struggle to establish a sense of self-worth and identity independent of peer comparisons. Comparing oneself to others, particularly on social media, can lead to unrealistic expectations and a distorted perception of reality. This can contribute to feelings of dissatisfaction and inadequacy [13].

The researcher is also interesting in finding out the connection between academic stress and psychological wellbeing. Academic stress refers to the psychological and emotional pressure and tension that students experience as a result of the demands, challenges, and expectations associated with their educational pursuits. This type of stress is specifically linked to the academic environment and encompasses various factors that can contribute to feelings of anxiety, overwhelm, and strain. Academic stress can affect students at all levels of education, from primary school to higher education institutions. The volume of coursework, assignments, projects, and exams that students are required to complete can be a significant source of stress. Trying to manage multiple academic tasks simultaneously can lead to time pressure and feelings of being overwhelmed. The anticipation of tests, exams, and assessments can induce anxiety and stress. Students may worry about their ability to perform well, leading to physical symptoms like nervousness, racing heart, or even panic attacks [14].

Academic stress can have a significant relationship with the psychological well-being of students in tertiary institutions. The demands and pressures associated with higher education can contribute to a range of psychological challenges and emotional distress. Academic stress often leads to heightened anxiety levels. Students may experience constant worry about exams, assignments, and academic performance. In severe cases, this anxiety can escalate into panic attacks, characterized by intense fear and physical symptoms like rapid heartbeat and shortness of breath. Persistent academic stress can contribute to feelings of sadness and hopelessness, potentially leading to depression. The pressure to excel academically and fear of failure can be emotionally taxing and impact a student's overall mood and motivation [15].

Excessive stress can erode self-esteem. Students who feel overwhelmed or believe they are not meeting academic expectations may develop negative self-perceptions and self-doubt. Academic stress can lead to burnout, a state of physical and emotional exhaustion. Burnout is often accompanied by a sense of detachment from academic work and a loss of motivation. Stress can impair cognitive function, including memory, attention, and problem-solving abilities. This can hinder a student's ability to focus on coursework and perform well academically, further increasing stress levels [16].

Stress can disrupt sleep patterns, leading to insomnia or poor-quality sleep. Inadequate rest can contribute to fatigue and exacerbate stress-related psychological symptoms. Chronic academic stress can have physical health consequences, such as headaches, digestive issues, and a weakened immune system. These physical symptoms can further correlate with psychological well-being. Students experiencing academic stress may withdraw from social activities and relationships to focus on their studies. This isolation can lead to loneliness and further psychological distress. Some students turn to substance abuse (e.g., alcohol or drugs) as a coping mechanism for academic stress. This can lead to addiction issues and compound psychological problems [17].

The desire for academic excellence can lead to perfectionism, where students set unrealistically high standards for themselves. Perfectionism can result in constant self-criticism and increased stress. Students under academic stress may resort to negative coping mechanisms, such as procrastination, avoidance, or self-sabotage, which can exacerbate their psychological

distress. Overall, academic stress can significantly reduce a student's quality of life. It can create a cycle of stress-related symptoms and behaviours that negatively correlate with their psychological and emotional well-being [18].

In exploring the nature of the relationship that could exists between substance abuse, peer social comparison, academic stress and psychological adjustment of students in tertiary institutions, there is a need to explore how sex could moderate the relationship. The choice of sex is predicated on the recognition that sex can play a significant role in how individuals experience and respond to these factors. There can be sex differences in the prevalence and patterns of substance abuse. For example, males and females may have different substances of choice, reasons for use, and vulnerability to addiction. Understanding how sex moderates the relationship between substance abuse and psychological adjustment can help tailor intervention strategies. Peer social comparison can be influenced by sex norms and expectations. Social comparisons related to appearance, academic performance, and other domains may differ for males and females. Sex can moderate the relationship of these comparisons with psychological well-being. Academic stressors may be experienced differently by males and females due to societal and cultural factors. Sex roles and expectations can influence how students perceive and respond to academic stress, and these differences can affect psychological adjustment. Sex identity and its alignment with societal norms can influence psychological adjustment. Individuals who do not conform to traditional sex norms may face unique stressors that correlate with their psychological well-being differently.

In view of the above, this study is aimed to examine the relationship between substance use, peer social comparison, academic stress and psychological wellbeing of tertiary institution students in Delta South Senatorial District.

1.1 Hypotheses

The following null hypotheses were formulated and tested at 0.05 alpha level:

1. There is no significant relationship between substance use, peer social comparison, academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District.
2. There is no significant relationship between substance use and psychological well-being of students in tertiary institutions in Delta South Senatorial District.
3. There is no significant moderating impact of sex on the relationship between substance use and psychological well-being of students in tertiary institutions in Delta South Senatorial District.
4. There is no significant relationship between peer social comparison and psychological well-being of students in tertiary institutions in Delta South Senatorial District.
5. There is no significant moderating impact of sex on the relationship between peer social comparison and psychological well-being of students in tertiary institutions in Delta South Senatorial District.
6. There is no significant relationship between academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District.
7. There is no significant moderating impact of sex on the relationship between academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

2. METHODS

2.1 Research Design

The study employed a correlational research design to examine the relationships between various variables.

2.2 Participant Selection

The sample size for this study was 332 students. The students were selected from tertiary institutions across Delta South Senatorial District using a multi-stage sampling method; the first phase of sampling selected the students from across the tertiary institutions using proportionate stratified sampling technique. In this method, the researcher selected 13% each from every tertiary institution in Delta South Senatorial District. Then, in the second stage, the researcher stratified the students into male and female for the purpose of the study.

2.3 Measures

A questionnaire was used as the primary research tool. The questionnaire comprises two

sections (A-B) and addresses various aspects of the study. Section A gathers demographic data, while Section B contain measures related to substance use, peer social comparison, academic stress and psychological well-being.

Substance Use Rating Scale (SURS): This scale contains 25 items, which were constructed to measure a range of behaviours and attitudes related to substance use, including alcohol, tobacco, prescription drugs, and illegal substances. They can be used to assess the prevalence and patterns of substance use among tertiary institution students. The items were structured on a 4-point scale, ranging from 1 for strongly disagree to 4 for strongly agree.

Peer Social Comparison Rating Scale (PSCRS): This scale contains 25 items, which were constructed to measure various aspects of peer social comparison, including academic, social, and lifestyle comparisons. They can be used to understand how students in tertiary institutions perceive and engage in social comparisons with their peers, which can correlate with their behaviours and well-being. The items were structured on a 4-point scale, ranging from 1 for strongly disagree to 4 for strongly agree.

Academic Stress Rating Scale (SSRS): This scale contains 25 items, which were constructed to measure various aspects of academic stress, including emotional and physical symptoms, pressure to excel, time management, and social aspects. They can be used to assess the level of academic stress experienced by students in tertiary institution. The items were structured on a 4-point scale, ranging from 1 for strongly disagree to 4 for strongly agree.

Psychological Well-Being Rating Scale (PWRS): This scale contains 25 items, which were constructed to measure various dimensions of psychological well-being, including emotional, social, and personal aspects. They can be used to assess the level of psychological well-being among students in tertiary institutions. The items were structured on a 4-point scale, ranging from 1 for strongly disagree to 4 for strongly agree.

The instrument was given to the researcher's supervisor and two experts in the field of Guidance and Counselling for validation on face. Content and construct validities were determined through pilot testing on 50 respondents from Delta Central Senatorial District who were not part of the study, followed by confirmatory factor analysis. The results indicated the cumulative variance and construct validity of each section. A total cumulative variance of 68.19% for Substance Use Rating Scale; 70.57% for Peer Social Comparison Rating Scale; 60.16% for Academic Stress Rating Scale; and 63.25% for Psychological Well-Being Rating Scale were obtained respectively. On the other hand, rotated component matrix revealed a range of scores of 0.60-0.83 for Substance Use Rating Scale; 0.52-0.90 for Peer Social Comparison Rating Scale; 0.62-0.883 for Academic Stress Rating Scale; and 0.54-0.885 for Psychological Well-Being Rating Scale. The reliability of the instrument was established using Cronbach's alpha reliability coefficient. The internal consistency of each section was examined to ensure the reliability of the questionnaire. It revealed a coefficient of 0.92 for Substance Use Rating Scale; 0.70 for Peer Social Comparison Rating Scale; 0.50 for Academic Stress Rating Scale; and 0.55 for Psychological Well-Being Rating Scale.

2.4 Data Collection

The researchers with the assistance of three trained research assistants to administer the questionnaire to the respondent in their respective schools. The students were educated on how to fill the questionnaire in order to avoid multiple answers.

2.5 Data Analysis

Data collected were collated, scored, coded, and entered into the Statistical Package for Social Sciences (SPSS) version 26. The study utilized the Pearson's Product Moment Correlation Coefficient to answer research questions. Additionally, linear regression analysis was employed to test hypotheses 1, 2, 4 and 6, while multiple regression statistics was used for hypotheses 3, 5 and 7. All hypotheses were tested at a significance level of 0.05.

3. RESULTS

Hypothesis 1: There is no significant relationship between substance use, peer social comparison, academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

Table 1. Regression analysis of the relationship between substance use, peer social comparison, academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District

Model Summary					
R	***R^2***	***Adj. R^2***		**Std Error**	
0.217	0.047	0.038		6.45218	
ANOVA					
	SS	***df***	***MS***	***F***	**Sig.**
Regression	673.819	3	224.606	5.395	.001[b]
Residual	13654.856	328	41.631		
Total	14328.675	331			
Coefficient					
	Unstandardized Coefficients		**Standardized Coefficient**	***t***	**Sig.**
	B	**Std. Error**	**β**		
(Constant)	25.232	1.707		14.780	.000
Substance Use	-.047	.055	-.050	-.855	.393
Peer Social Comparison	-.017	.041	-.029	-.409	.683
Academic Stress	.335	.096	.229	3.480	.001

Table 2. Regression analysis of the relationship between substance use and psychological well-being of students in tertiary institutions in Delta South Senatorial District

ANOVA					
	SS	***df***	***MS***	***F***	**Sig.**
Regression	19.647	1	19.647	.453	.501[b]
Residual	14309.027	330	43.361		
Total	14328.675	331			

Table 3. Pearson's correlation and Fisher's Z statistics of the moderating impact of sex on the relationship between substance use and psychological well-being of students in tertiary institutions in Delta South Senatorial District

Sex	**Variables**	***n***	**Mean**	***SD***	***r***	**Fisher-*Z***	**Remark**
Male	Substance Use	21	18.65	6.55			
	Psychological well-being	5	29.32	6.85	0.04		Not significant
Female	Substance Use	11	29.32	6.85		0.00	
	Psychological well-being	7	30.50	6.00	0.04		

Table 4. Regression analysis of the relationship between peer social comparison and psychological well-being of students in tertiary institutions in Delta South Senatorial District

ANOVA					
	SS	***df***	***MS***	***F***	**Sig.**
Regression	99.013	1	99.013	2.296	.131[b]
Residual	14229.662	330	43.120		
Total	14328.675	331			

Table 5. Pearson's correlation and Fisher's Z statistics of the moderating impact of sex on the relationship between peer social comparison and psychological well-being of students in tertiary institutions in Delta South Senatorial District

Sex	**Variables**	***n***	**Mean**	***SD***	***r***	**Fisher-*Z***	**Remark**
Male	Peer Social Comparison	215	39.96	11.23	0.10	0.33	Not significant
	Psychological Well-Being		29.32	6.85			
Female	Peer Social Comparison	117	39.27	11.18	0.06		
	Psychological Well-Being		30.50	6.00			

Table 6. Regression analysis of the relationship between academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District

Model Summary					
R	***R^2***	***Adj. R^2***		**Std Error**	
0.208	0.043	0.040		6.44544	
ANOVA					
	SS	***df***	***MS***	***F***	**Sig.**
Regression	619.235	1	619.235	14.906	.000[b]
Residual	13709.440	330	41.544		
Total	14328.675	331			
Coefficient					
	Unstandardized Coefficients		**Standardized Coefficient**	***t***	**Sig.**
	B	**Std. Error**	**β**		
(Constant)	24.237	1.467		16.518	.000
Academic Stress	.304	.079	.208	3.861	.000

Table 7. Pearson's correlation and Fisher's Z statistics of the moderating impact of sex on the relationship between academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District

Sex	**Variables**	***n***	**Mean**	***SD***	***r***	**Fisher-*Z***	**Remark**
Male	Academic Stress	215	18.09	4.58			
	Psychological Well-Being		29.32	6.85	0.25	1.17	Not significant
Female	Academic Stress	117	18.03	4.35			
	Psychological Well-Being		30.50	6.00	0.11		

Table 1 shows the result of a regression statistics which was performed to investigate the relationship between substance use, peer social comparison, academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District. The calculated F-value is 5.395, and the p-value is 0.001, which is less than the alpha level of 0.05. Consequently, the null hypothesis is rejected. This suggests that a relationship exists between substance use, peer social comparison, academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District. The R^2 value of 0.047 indicates that substance use, peer social comparison and academic stress explain 4.7% of the variation in psychological well-being among students. The unstandardized regression coefficient (B) for predicting psychological well-being from substance use is -0.047; substance use is -0.017; and academic stress is 0.335. The standardized regression coefficient for substance use = -0.050, t = -0.855; peer social comparison = -0.029, t = -0.409; and academic stress = 0.229, t = 3.480. While academic stress is significant at 0.05 alpha level, substance use and peer social comparison are not.

Hypothesis 2: There is no significant relationship between substance use and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

Table 2 shows the result of a regression statistics which was performed to investigate the relationship between substance use and psychological well-being of students in tertiary institutions in Delta South Senatorial District. The calculated F-value is 0.453, and the p-value is 0.501, which is greater than the alpha level of 0.05. Consequently, the null hypothesis is accepted. This suggests that no relationship exists between substance use and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

Hypothesis 3: There is no significant moderating impact of sex on the relationship between substance use and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

Table 3 shows the result of a Pearson's correlation and Fisher's Z statistics, which was used to determine the moderating impact of sex

on the relationship between substance use and psychological well-being of students in tertiary institutions in Delta South Senatorial District. The result shows that male students had a coefficient (*r*) of 0.04 while female students had a coefficient (*r*) of 0.04. The fisher-z (z_{obs}) is 0.00, which is less than 1.96, the correlation coefficients are therefore not statistically significantly different. Hence, the null hypothesis is accepted, which means that there is no significant moderating impact of sex on the relationship between substance use and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

Hypothesis 4: There is no significant relationship between peer social comparison and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

Table 4 shows the result of a regression statistics which was performed to investigate the relationship between peer social comparison and psychological well-being of students in tertiary institutions in Delta South Senatorial District. The calculated F-value is 2.296, and the p-value is 0.131, which is greater than the alpha level of 0.05. Consequently, the null hypothesis is accepted. This suggests that no relationship exists between peer social comparison and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

Hypothesis 5: There is no significant moderating impact of sex on the relationship between peer social comparison and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

Table 5 shows the result of a Pearson's correlation and Fisher's Z statistics, which was used to determine the moderating impact of sex on the relationship between peer social comparison and psychological well-being of students in tertiary institutions in Delta South Senatorial District. The result shows that male students had a coefficient (*r*) of 0.10 while female students had a coefficient (*r*) of 0.06. The fisher-z (z_{obs}) is 0.33, which is less than 1.96, the correlation coefficients are therefore not statistically significantly different. Hence, the null hypothesis is accepted, which means that there is no significant moderating impact of sex on the relationship between peer social comparison and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

Hypothesis 6: There is no significant relationship between academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

Table 6 shows the result of a regression statistics which was performed to investigate the relationship between academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District. The calculated F-value is 14.906, and the p-value is 0.000, which is less than the alpha level of 0.05. Consequently, the null hypothesis is rejected. This suggests that a relationship exists between academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District. The R^2 value of 0.043 indicates that academic stress explains 4.3% of the variation in psychological well-being among students. The unstandardized regression coefficient (B) for predicting psychological well-being from academic stress, is 0.304; while the standardized regression coefficient is 0.208, t = 3.861, $p < 0.05$ level of significance.

Hypothesis 7: There is no significant moderating impact of sex on the relationship between academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

Table 7 shows the result of a Pearson's correlation and Fisher's Z statistics, which was used to determine the moderating impact of sex on the relationship between academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District. The result shows that male students had a coefficient (*r*) of 0.25 while female students had a coefficient (*r*) of 0.11. The fisher-z (z_{obs}) is 1.17, which is less than 1.96, the correlation coefficients are therefore not statistically significantly different. Hence, the null hypothesis is accepted, which means that there is no significant moderating impact of sex on the relationship between academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District.

4. DISCUSSION

Relationship between substance use, peer social comparison, academic stress and psychological well-being of students in tertiary institutions in delta south senatorial district: The first finding revealed

that a relationship exists between substance use, peer social comparison, academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District. This finding underscores the need for comprehensive and integrated support systems within tertiary institutions. Recognizing that substance use is often intertwined with academic stress and social influences, institutions should develop holistic strategies that encompass psychological well-being awareness, counselling services, and targeted interventions addressing both academic and social pressures.

The possible reasons behind the above finding lie in the challenging nature of the tertiary education environment. Academic stress, characterized by demanding coursework, exams, and deadlines, can create a fertile ground for maladaptive coping mechanisms such as substance use. Peer social comparison further exacerbates these pressures, as students may feel compelled to conform to perceived norms, potentially leading to unhealthy behaviors. Moreover, the transitional phase of tertiary education involves significant life changes and increased independence, making students more susceptible to external influences. Peer groups, social expectations, and academic challenges converge, creating a complex landscape where substance use may be seen as a coping mechanism or a means of fitting in.

The above finding agrees with the result of previous findings. For instance, Studies like that by Hasking et al. [19] and Li et al. [20] illustrate that students often use substances to cope with academic stress, anxiety, and social pressures. However, such self-medication often worsens problems in the long run, exacerbating psychological well-being issues [21]. Upward social comparison, as explored by Meier et al. [22], fuels feelings of inadequacy and self-doubt, particularly in competitive academic environments [23]. This pressure can drive unhealthy coping mechanisms, including substance use [24]. Perceiving high levels of peer substance use, as shown by Read et al. (2015), can normalize it and increase individual engagement due to social influence [25]. Academic pressure, demanding workloads, and fear of failure, as highlighted by Evans et al. [26], contribute to significant stress in students [27]. This stress can be a risk factor for substance use as a coping mechanism [28]. The combined effects of these factors often manifest in various psychological well-being issues like depression, anxiety, and substance abuse disorders [21]. This, in turn, negatively impacts academic performance [26] and can lead to social withdrawal and isolation [29].

Relationship between substance use and psychological well-being of students in tertiary institutions in delta south senatorial district: The second finding showed that no relationship exists between substance use and psychological well-being of students in tertiary institutions in Delta South Senatorial District. This finding implies that, contrary to expectations, engaging in substance use does not necessarily correlate with a decline in psychological well-being among this particular student population. One possible interpretation of this finding could be that students in tertiary institutions may have diverse reasons for substance use that do not uniformly impact their psychological well-being. It suggests that, for some individuals, substance use may be a recreational or social activity without significant negative consequences on their psychological well-being.

Several factors could contribute to this lack of correlation. Firstly, students may engage in substance use moderately or in controlled settings, preventing it from becoming a source of psychological distress. Additionally, some individuals may possess effective coping mechanisms that mitigate the potential negative impact of substance use on their mental well-being. The absence of a clear relationship between substance use and psychological well-being may also underscore the importance of considering other variables that influence psychological well-being among students. Factors such as social support, resilience, and coping strategies may play a more prominent role in determining psychological well-being in this context.

The above study is at variance with the result of previous studies. For instance, a meta-analysis by Mojtabai et al. [21] analyzed data from 72 studies and found a significant positive association between substance use and various psychological well-being issues like depression, anxiety, and suicide ideation. This relationship applies to students in tertiary institutions as well. Park et al. [23] conducted another meta-analysis specifically focusing on academic stress and substance use among college students. Their findings confirmed a significant positive correlation, indicating that higher stress levels

tend to be associated with increased substance use. A study by Conway et al. [28], highlight the use of substances as a coping mechanism for academic stress and anxiety, highlighting a direct impact on well-being.

Various explanations may be responsible for why is not supported by the overwhelming body of research. Cultural and contextual differences between the current study and previous research could be influential. Cultural norms and societal attitudes toward substance use can vary widely, shaping the experiences and perceptions of students in different regions or institutions. The landscape of substance use and psychological well-being may evolve over time. Changes in societal attitudes, policies, or the prevalence of specific substances can influence the dynamics between substance use and psychological well-being. The current study might capture a snapshot of a different time period compared to earlier research. The availability and effectiveness of social support structures within the tertiary institution may vary. Strong social support can act as a protective factor, influencing the relationship between substance use and psychological well-being.

Moderating Impact of sex in the relationship between substance use and psychological well-being of students in tertiary institutions in delta south senatorial district: The third finding revealed that no significant moderating impact of sex on the relationship between substance use and psychological well-being of students in tertiary institutions in Delta South Senatorial District. This finding suggests that, in this particular study, the association between substance use and mental well-being is consistent across genders. This result is interesting and prompts exploration into potential reasons for the lack of a discernible sex-based moderation effect. Various reasons could be responsible for this finding. For instance, it is possible that both male and female students in this study employ similar coping mechanisms, including substance use, in response to stressors or challenges. If the reasons for engaging in substance use are comparable across genders, the moderating impact of sex on the relationship with psychological well-being may be minimal. If the stressors experienced by male and female students in tertiary institutions are similar or have comparable effects on mental well-being, the moderating role of sex may be less pronounced. Common stressors such as academic pressure, social expectations, and transitional challenges could contribute to a shared experience. Societal shifts in gender roles and expectations may influence the relationship between substance use and psychological well-being. If male and female students are navigating similar challenges and experiencing similar societal pressures, the impact of sex on this relationship might be diminished.

The above finding supports the result of previous studies. For instance, A meta-analysis by Mojtabai et al. [21] found that, overall, substance use negatively impacts well-being regardless of sex. A study by Conway et al. [28] showed no significant difference in the strength of the relationship between academic stress and substance use for male and female students. The finding is however, at variance with Le Grange et al. [29], whose study revealed that while both genders experienced negative psychological well-being outcomes associated with substance use, women reported higher levels of depression and anxiety.

Relationship between peer social comparison and psychological well-being of students in tertiary institutions in delta south senatorial district: The fourth finding showed that no relationship exists between peer social comparison and psychological well-being of students in tertiary institutions in Delta South Senatorial District. This finding suggests that students, in this particular study, may engage in comparison without experiencing feelings of inadequacy or heightened stress. Several factors could contribute to the absence of a discernible relationship between peer social comparison and psychological well-being. One plausible explanation is that students in the study may adopt healthier forms of social comparison, using their peers as sources of inspiration and motivation rather than as benchmarks for self-worth. Additionally, the study might have captured a cohort of students who possess robust coping mechanisms or who interpret social comparison in a way that does not lead to negative emotional consequences. Cultural and contextual influences, such as the institutional atmosphere and prevailing societal norms, could also play a role in shaping the impact of social comparison on well-being.

The above finding is contrast with a vast body of research demonstrating a significant and often negative connection. For instance, a meta-

analysis by Wang et al. (2015) analyzed data from 63 studies and found a significant negative relationship between social comparison and well-being across various age groups and contexts. Meier et al. [22] conducted a study specifically focusing on social comparison in university students and found that upward comparison (comparing oneself to those perceived as doing better) significantly predicted lower self-esteem and higher anxiety. Park et al. [23] highlighted that high levels of academic competition and pressure in universities can foster unhealthy social comparison, leading to stress, decreased motivation, and negative self-perceptions.

Various explanations may be responsible for why is not supported by the overwhelming body of research. It is plausible that students in the study predominantly engage in healthy social comparison, using their peers as sources of motivation and inspiration rather than feeling negatively affected. If the comparisons are constructive and contribute positively to self-perception, they may not lead to adverse psychological outcomes. Students may vary in their responses to social comparison, with some individuals being more resilient or less prone to negative emotional reactions. Personal characteristics, coping strategies, and levels of self-esteem can influence how social comparison affects psychological well-being. The presence of a supportive social environment within the tertiary institution may act as a buffer against negative consequences of social comparison. If students have access to strong social support networks, they may be better equipped to handle the potential stressors associated with comparing themselves to peers.

Moderating impact of sex in the relationship between peer social comparison and psychological well-being of students in tertiary institutions in delta south senatorial district: The fifth finding revealed that no significant moderating impact of sex on the relationship between peer social comparison and psychological well-being of students in tertiary institutions in Delta South Senatorial District. This finding implies that, in the context of this study, the influence of comparing oneself to peers on psychological well-being does not significantly differ between male and female students. Several factors could contribute to this lack of a discernible moderating effect. Both male and female students may employ similar coping mechanisms when engaging in social comparison. If the strategies used to manage the effects of comparison on psychological well-being are comparable across genders, it could lead to a lack of moderation by sex.

Male and female students might share common perceptions regarding the nature and significance of social comparison. If there is a convergence in how both genders interpret and respond to social comparisons, it may result in a similar impact on their psychological well-being. Evolving societal expectations and changing gender dynamics may contribute to a reduced moderating impact of sex on the relationship. If traditional gender roles and associated stereotypes are diminishing, both male and female students may experience social comparison in more similar ways. If there is a high level of gender equality within the tertiary institution, with both male and female students having equal access to resources and opportunities, the moderating effect of sex may diminish. Reduced gender disparities could lead to similar experiences in response to social comparison.

The above finding agrees with the result of other studies. For instance, Wang et al. (2015) found a significant negative relationship between social comparison and well-being across genders. studies like that by Meier et al. [22] show no significant difference in the strength of the relationship between upward social comparison and anxiety for male and female students. Meier et al. [22] found that downward social comparison (comparing oneself to those perceived as doing worse) had a stronger negative impact on self-esteem for women than men. Le Grange et al. [29] revealed that while both genders experienced negative self-perceptions and social isolation due to social comparison, women reported higher levels of depression and anxiety.

Relationship between academic stress and psychological well-being of students in tertiary institutions in delta south senatorial district: The sixth finding showed that a relationship exists between academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District. This finding underscores the significant impact that the challenges of academic life can have on their psychological well-being. The study suggests that the stressors associated with academic responsibilities, such as exams,

deadlines, and high expectations, contribute to variations in students' psychological well-being. Academic stress can act as a significant factor influencing psychological well-being outcomes. The observed relationship implies that higher levels of academic stress are associated with poorer psychological well-being. This may manifest in symptoms such as anxiety, depression, or feelings of overwhelm, affecting students' overall emotional and psychological well-being. The pressure to perform well academically, often inherent in tertiary education, can lead to heightened stress levels. This pressure may stem from both internal expectations and external factors, such as competition with peers or future career prospects.

The above is in line with the result of previous studies. For instance, studies by Evans et al. [26] and Mojtabai et al. [21] reveal a significant positive correlation between academic stress and various psychological well-being issues like anxiety, depression, and low self-esteem. This trend also holds true for students in tertiary institutions. Research by Auerbach et al. [27] demonstrates a direct link between perceived academic stress and stress-related symptoms among university students. Similarly, Conway et al. [28] highlight the use of unhealthy coping mechanisms like substance use in response to academic stress, further impacting well-being.

Moderating impact of sex in the relationship between academic stress and psychological well-being of students in tertiary institutions in delta south senatorial district: The seventh finding revealed that no significant moderating impact of sex on the relationship between academic stress and psychological well-being of students in tertiary institutions in Delta South Senatorial District. This finding suggests that, in the context of this study, the influence of academic stress on psychological well-being is similar for both male and female students. Several factors may contribute to the absence of a discernible moderating effect. It is possible that both male and female students in the study employ similar coping mechanisms when faced with academic stress. If the strategies used to manage stress and preserve psychological well-being are comparable across genders, it could lead to a lack of moderation by sex.

Evolving societal expectations and changing gender dynamics may contribute to a reduced moderating impact of sex on the relationship between academic stress and psychological well-being. If traditional gender roles and associated stereotypes are diminishing, both male and female students may experience academic stress in more similar ways. If there is a high level of gender equality within the tertiary institution, with both male and female students facing similar academic expectations and pressures, the moderating effect of sex may diminish. Reduced gender disparities in academic stress could lead to similar experiences for both genders.

The above finding agrees with the result of previous studies. For instance, a meta-analysis by Mojtabai et al. [21] found a significant positive correlation between academic stress and various psychological well-being issues across genders. Similarly, Conway et al. [28] found no significant difference in the strength of the relationship between academic stress and substance use for male and female students. The finding however, disagrees with Le Grange et al. [29,30,31,32], who revealed that while both genders experienced negative self-perceptions and social isolation due to academic stress, women reported higher levels of depression and anxiety. Research by Meier et al. [22] suggests that coping mechanisms employed by male and female students differ, with females opting for rumination and social comparison more often, potentially exacerbating negative well-being outcomes.

5. CONCLUSION AND RECOMMENDATIONS

On the basis of the finding obtained in the study, the researcher concludes that the study unveils valuable insights into the intricate relationships shaping the mental well-being of tertiary students in the region. Firstly, it reveals a complex interplay among substance use, peer social comparison, academic stress, and psychological well-being. Contrary to prevailing expectations, the study challenges the conventional belief that substance use directly influences psychological well-being. Furthermore, the study emphasized consistency across genders, suggesting that both male and female students share similar experiences regarding substance use and peer social comparison's impact on psychological well-being. The study also brings to light the limited impact of peer social comparison on the psychological well-being of students in the region. This finding challenges the universality of

the negative effects of social comparison, indicating that factors unique to the local context may contribute to this deviation from general trends.

On a positive note, the study confirms the presence of a significant relationship between academic stress and psychological well-being. This implies that academic stress is a noteworthy factor influencing the psychological well-being of students in Delta South Senatorial District. However, the absence of a moderating impact of sex suggests that both male and female students are similarly affected by academic stress in terms of their psychological well-being. In view of the findings, the following are recommended:

1. Institutions in Delta South Senatorial District should establish holistic mental health programmes that address the interplay of substance use, peer social comparison, academic stress, and psychological well-being. These programs should include counselling services, educational campaigns, and support structures tailored to the specific challenges faced by students in the region.
2. Institutions should still implement substance use prevention and intervention programmes. These initiatives should focus on educating students about the potential risks of substance use and providing resources for those who may be struggling with substance-related issues.
3. Institutions should promote a positive and inclusive social environment that discourages unhealthy social comparison. Encouraging a culture of support, collaboration, and celebrating individual achievements can contribute to a healthier peer dynamic, positively impacting students' psychological well-being.
4. Institutions should enhance academic support systems. This may include providing stress management workshops, academic counselling, and resources to help students cope with the pressures of their academic responsibilities.

CONSENT

As per international standards or university standards, respondents' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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