

## Comparative Relationships Between Perceived Stress and Sleep Quality on Psychological Well-being of Students in Rufus Giwa Polytechnic, Owo Ondo State, Nigeria

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### Abstract

*The transition to higher education poses significant challenges for students, which can adversely affect their psychological well-being. This study examines the influence of perceived stress and sleep quality on psychological well-being among students Rufus Giwa Polytechnic, Owo, Ondo State. The study adopted a cross-sectional survey design. A purposive and convenience random sampling techniques were used to select 379 students (169 males, 210 females) aged 18 to 28 years (Mean = 22.68; SD = 1.84). The Psychological Well-being Scale (PWS), Sleep Quality Scale (SQS), and Perceived Stress Scale (PSS) were used to elicit information from the respondents, which reported a good internal consistency Cronbach Alpha 0.93 -PWB, 0.95-SQS and 0.91- PSS. A two-step hierarchical multiple regression analysis was used to test the three hypotheses in the study. The results indicated that sleep quality significantly predicts psychological well-being ( $\beta = .14$ ,  $t = 2.68$ ,  $p < .01$ ), while perceived stress does not ( $\beta = .03$ ,  $t = .6$ ,  $p > .05$ ) predict the psychological well-being of students in the study area. The joint prediction of sleep quality and perceived stress was also significant [ $F(1,376) = 3.78$ ;  $p < .01$ ]. the study concluded that sleep quality and perceived stress combined, will significantly predict psychological wellbeing of polytechnic students in the study area. The study recommends targeted interventions among Rufus Giwa polytechnic students to improve their sleep quality and stress management to enhance their psychological well-being.*

**Keywords:** sleep quality, perceived stress, psychological well-being, undergraduate students.

### Introduction

Over the years, the transition to higher education presents significant challenges for undergraduate students, affecting their psychological well-being, sleep quality, and stress levels (Adebayo, 2020). Psychological well-being, which encompasses emotional stability, life satisfaction, and positive functioning (Ryff, 1989), plays a critical role in students' academic success and overall mental well-being. Nigerian students, like their global counterparts, experience immense academic pressures, financial constraints, and social expectations, contributing to high risks of anxiety, depression, and reduced psychological well-being (Ogunyemi & Oluwaseun, 2018). All of these challenges could impair the students' sleep quality and in turn affect their psychological well-being and academic achievement. Sleep quality has been identified as a crucial determinant of students' mental health, with significant implications on cognitive functioning and emotional regulation and resilience (Mok et al., 2016). Research reported that Nigerian students frequently experience sleep disturbances due to irregular study patterns, late-night academic engagements, and environmental factors (Eniola & Adeyemi, 2019). Poor sleep quality not only affects concentration and learning efficiency but also exacerbates stress levels, creating a cycle that negatively impacts students psychological health. A study by Ajayi (2019) found that students who consistently experience poor sleep often



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face difficulties in concentration, problem-solving, and retaining information, further affecting their academic performance and well-being. Recent empirical studies have emphasized the growing concern over sleep quality among university students. Kolawole (2017) examined the relationship between sleep quality and academic performance among Nigerian undergraduates and found that 49.5% of students had poor sleep quality, significantly impacting their ability to focus and process information effectively. Similarly, Jibril et al. (2023) investigated sleep patterns among nursing students at the University of Ilorin and discovered that 97.2% of students affirmed that inadequate sleep negatively affected their academic performance, with 91.4% agreeing that a minimum of six hours of sleep is necessary for healthy living. Furthermore, a study by Anthony et al. (2023) validated the Sleep Quality Questionnaire among senior students in Benin City, reinforcing the prevalence of poor sleep among Nigerian students and highlighting the need for interventions addressing sleep-related problems. Globally, studies have shown that inadequate sleep is associated with heightened stress levels and compromised psychological well-being. Lund et al. (2010) reported that university students with poor sleep habits exhibited increased symptoms of anxiety and depression, while Becker et al. (2013) found a direct link between sleep disturbances and decreased self-regulation, affecting students' mental resilience. Thun et al. (2020) synthesized findings from over 3,000 participants, demonstrating that sleep deprivation is strongly correlated with heightened emotional distress. These findings underscore the pressing need for universities and polytechnics to prioritize sleep quality and stress management as essential components of student welfare.

Stress, another crucial factor affecting students' psychological well-being, often stems from academic workload, financial difficulties, and social pressures (Ogunbode & Ogunbode, 2019). Oyetunde, Akinyemi, and Afolabi, (2020) conducted a study on perceived stress and mental health among University students. Two hundred and fifty (250) undergraduate students from a Nigerian university, aged 18-25 were assessed using a cross-sectional survey design, where participants completed questionnaires assessing their perceived stress and mental health status. The Perceived Stress Scale (PSS) was employed to measure stress levels, while the General Health Questionnaire (GHQ-12) assessed mental health. The findings revealed that high levels of perceived stress were significantly associated with poorer mental health outcomes, including increased anxiety and depressive symptoms. The study highlighted the need for stress management interventions targeted at students to enhance their psychological well-being. Nwankwo, Akinpelu, and Eze conducted a research on coping strategies and their influence on perceived stress in adolescents in 2019. A total number of two hundred (200) adolescents aged 13-18 from secondary schools in Nigeria were assessed using a correlational design, where participants completed self-report questionnaires on coping strategies, perceived stress, and psychological well-being. The Coping Strategies Inventory (CSI) measured coping styles, while the Perceived Stress Scale (PSS) assessed stress levels and the Rosenberg Self-Esteem Scale (RSES) evaluated psychological well-being. Results indicated that adolescents employing adaptive coping strategies reported lower levels of perceived stress and higher self-esteem compared to those using maladaptive strategies. Smith and Chao, (2022) investigated online interventions for stress management. An experimental study design was used to evaluate the efficacy of an online stress management platform for students. Two hundred (200) undergraduate students utilized the online program, which included various stress management techniques. The study revealed that participants using the online platform experienced significant reductions in stress levels and increased resilience compared to a control group that did not have access to the intervention. The flexibility and accessibility of the program were noted as key benefits.

High levels of stress have been linked to anxiety, depression, and lower academic engagement, further exacerbating sleep disturbances and mental health challenges (Olayemi & Olayemi, 2021). The interconnections between sleep quality, stress, and psychological well-being have been well-documented in literature. Studies indicate that students with high stress levels tend to report poor sleep quality, which subsequently impacts their emotional resilience and psychological health (Becker et al., 2016). Despite the increasing awareness of these issues, there remains a gap in research focusing specifically on Nigerian polytechnic students and how the interaction between sleep quality and stress influences their psychological well-being. While studies on university students provide valuable insights, polytechnic students often experience distinct challenges, including different academic structures and socioeconomic realities. Understanding these dynamics is essential for developing targeted interventions aimed at improving student welfare. This study aims to examine the relationship between sleep quality, perceived stress, and psychological well-being among polytechnic students at Rufus Giwa Polytechnic, Owo, Nigeria. By exploring how these factors interact, the study seeks to contribute valuable insights that can

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inform the development of evidence-based interventions, policies, and support systems designed to enhance students' overall well-being and academic success.

### Research Objectives

The objectives of the study were to:

1. examine the influence of perceived stress on the psychological well-being of Polytechnic students;
2. determine the extent to which sleep quality predicts the level of psychological well-being among Polytechnic students; and
3. assess the joint contribution of perceived stress and sleep quality in predicting psychological well-being among the targeted population in the study area.

### Research Hypotheses

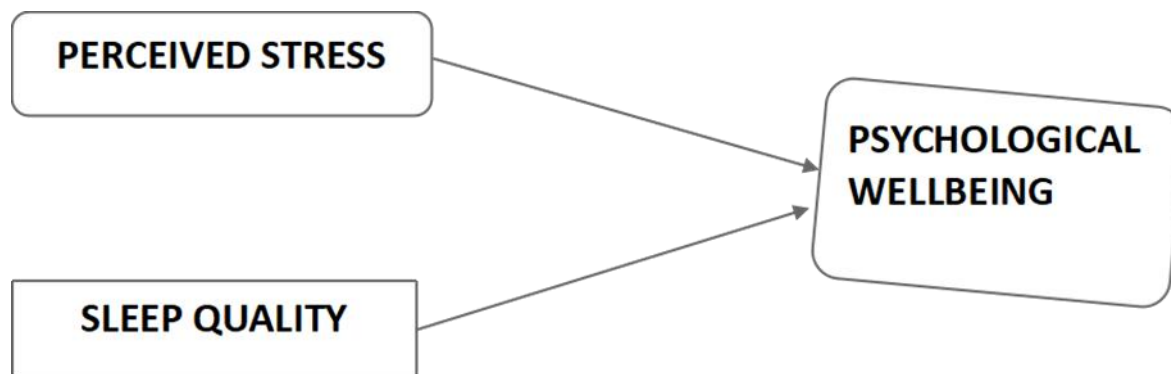
In order to achieve the stated objectives the following Hypothesis were formulated and tested:

1. Sleep quality will not significantly predict psychological well-being among Polytechnic students
2. Perceived stress will not significantly predict psychological well-being among Polytechnic students
3. Sleep quality and perceived stress will not jointly predict psychological well-being among Polytechnic students

### Conceptual Framework

This study is grounded in the assumption that sleep quality and perceived stress are key predictors of polytechnic students' psychological well-being. The framework integrates prior evidence on the role of sleep in cognitive and emotional regulation, and the impact of stress on resilience and mental well-being. It also hypothesizes that better sleep quality will positively predict students psychological well-being, while higher perceived stress will negatively predict their psychological wellbeing.

**Figure 1: Conceptual Model**



**Figure 1:** Hypothesised Prediction of Psychological Well-being by Sleep Quality and Perceived Stress among students of Rufus Giwa Polytechnic, Owo.

Note: The arrow indicates direct paths of the predictor variables (sleep quality and perceived stress on psychological well-being) to the outcome variable (psychological well-being)

### Methodology

This study adopted a cross-sectional survey design. The population comprised all the students of Rufus Giwa Polytechnic Owo. Ondo state, Nigeria during the 2023/2024 academic session. A sample of 379 students were selected using purposive and accidental techniques to ensure representation across academic levels (ND I & II, HND I & II) and faculties. Four hundred (400) questionnaires were administered, three hundred and eighty-two (382) were collected, but three hundred and seventy-nine (379) were found useful for the analysis which indicates a good response rate of 94.75% selected from the population.



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**Table 1: Demographic Characteristics of Respondents (N = 379)**

Variables	Frequency	Percentage (%)
<b>Gender</b>		
Male	169	44.6
Female	210	55.4
<b>Religious Affiliation</b>		
Christianity	247	65.2
Islam	131	34.6
other religion	1	0.2
<b>Family Type</b>		
Monogamy	322	85
Polygamy	57	15
<b>Academic Level</b>		
ND I	52	13.7
ND II	132	34.8
HND I	109	28.8
HNDII	86	22.7
<b>Faculty</b>		
Applied Sciences	214	56.5
Social and Management Sciences	87	23
Agricultural Technology	34	9
Business Studies	32	8.4
Environmental Studies	10	2.6
Environmental Technology	2	0.5
<b>Total</b>	<b>397</b>	<b>100</b>

Data in table 1 was gathered via the use of validated questionnaires which comprised of four sections, section A captured the socio-demographic data of the respondents such as age, gender, department and others, section B, consisted of Psychological Wellbeing Scale (PWS) adopted from Ryff, (1989). It comprised 18 items such as “I like most parts of my personality”, “Maintaining close relationships has been difficult and frustrating for me”, which were scored on a 7-point scale using “(1) strongly agree”, “(2) somewhat agree”, “(3) a little agree”, “(4) neither agree nor disagree”, “(5) a little disagree”, “(6) somewhat disagree”, “(7) strongly disagree”. The reliability index was re-established and yielded a good Cronbach’s Alpha of 0.93. Section C comprised Sleep Quality Scale (SQS) adopted from Chol Shin (2016). The scale consists of 28 items that typically assess factors such as sleep duration, disturbances, and overall satisfaction with sleep; and was scored on a 4 point Likert scale ranging from “rarely (none or 1-3 times a month)”, “sometimes (1-2 times a week)”, “often (3-5 times a week)”, “almost always (6-7 times a week)”. The scale reported a Cronbach’s Alpha of 0.95 in the present study. Section D also comprised Perceived Stress Scale (PSS) adopted from Cohen, (1983), The scale consists of 10 validated items and was scored on points which are: “(0) never”, “(1) almost never”, “(2) sometimes” “(3) fairly often” “(4) very often”. Sample items include, “In the last month, how often have you been upset because of something that happened unexpectedly?”, “In the last month, how often have you felt that things were going your way. The scale also yielded reported a good internal consistency of 0.91 Cronbach Alpha.

### **Ethical Consideration**

The participation of the respondents for the study was voluntary, and informed consent was secured from all the respondents before the data were collected. In addition, confidentiality and anonymity were assured, with data to be used solely for research purposes.



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## Presentation of Results

### Test of Hypotheses

The test for the three (3) formulated hypotheses were carried out using the 2-step hierarchical multiple regression analysis, which was used to test for both the independent and joint prediction of the independent variables (Sleep Quality and Perceived Stress) on the dependent variable (psychological well-being).

### Hypotheses:

Ho<sub>1</sub>: Sleep quality will not significantly predict psychological well-being among students.

Ho<sub>2</sub>: Perceived stress will not significantly predict psychological well-being among students.

Ho<sub>3</sub>: Sleep quality and perceived stress will not jointly predict psychological well-being.

The results are presented in Table 2.

**Table 2:** Two Step Hierarchical Multiple Regression Analysis Showing the Prediction of Sleep Quality and Perceived Stress on Psychological well-being among undergraduate students of Rufus Giwa polytechnic, Owo, Ondo State

Predictors	us $\beta$	Stand. Error	s $\beta$	T	Sig	R	R <sup>2</sup>	$\Delta R^2$	df	F	$\Delta F$
<b>Step 1</b>						.14	.02	-	1,377	7.19**	-
Sleep Quality	.15	.06	.14	2.68**	.008						
<b>Step 2</b>						.14	.02	.00	1,376	3.78**	0.37
<i>Sleep Quality</i>	.13	.06	.12	2.17*	.030						
<b>Perceived Stress</b>	.08	.13	.03	.61	.543						

Note: \*\* p < 0.01, \* p < 0.05, N= 379; us $\beta$ = Unstandardized Beta; s $\beta$ = Standardized Beta

In step 1, the result revealed that sleep quality significantly predicts psychological well-being ( $\beta = .14$ ,  $t = 2.68$ ,  $p < .01$ ), this shows that Rufus Giwa Polytechnic students' level of sleep makes them mentally healthy and predicts their positivity to life. Hence, the formulated hypothesis 1 was rejected. In step 2, perceived stress was entered into the model. The result showed that Perceived stress, did not significantly predict psychological well-being ( $\beta = .03$ ,  $t = .6$ ,  $p > .05$ ), which means that the polytechnic students' level of stress does not significantly affect their psychological wellbeing explaining the 2% variance. Therefore, Hypothesis 2 which states that perceived stress will not significantly predict psychological wellbeing among the students was accepted. The result further revealed that sleep quality and perceived stress significantly jointly predict psychological well-being [ $F(1,376) = 3.78$ ;  $p < .01$ ] and both tested factors had yielded 2% ( $R^2 = .02$ ), variance in the measure of psychological well-being. This means that there are other variables which contribute to polytechnic students' feeling of being mentally healthy and positivity to life that this study did not capture. Therefore the formulated null hypothesis 3, that sleep quality and perceived stress will not jointly predict psychological wellbeing among Polytechnic students, was therefore rejected.



## Discussions of Findings

The results revealed that sleep quality significantly predicts psychological well-being among polytechnic students. This finding aligns with Hirshkowitz et al., (2015) and Lo et al., (2016) Studies that associated poor sleep quality is with increased levels of anxiety, depression, and overall psychological distress. Walker, (2017) highlighted that sleep is essential for various cognitive functions, emotional regulation, and the overall restoration of mental health. For students, adequate sleep is particularly vital due to the demanding nature of academic life, which often leads to sleep deprivation (Becker et al., 2018). The result aligns with Nigerian-based evidence showing widespread sleep disturbances among tertiary students. Eniola and Adeyemi (2019) reported that irregular study schedules and environmental factors frequently compromise students' sleep patterns. Ajayi (2019) similarly found that poor sleep impairs concentration and information retention, which may indirectly reduce students' sense of competence and environmental mastery, core dimensions of psychological well-being. Empirical findings from Kolawole (2017) and Jibril et al. (2023) further demonstrated the prevalence of inadequate sleep among Nigerian undergraduates and its negative impact on academic functioning. Internationally, Lund et al. (2010) and Thun et al. (2020) documented strong associations between sleep deprivation and emotional distress. Becker et al. (2013) also linked sleep disturbances to decreased self-regulation, suggesting that insufficient sleep undermines students' psychological resilience. The present finding therefore reinforces the argument advanced in the background that sleep quality is a crucial determinant of students' mental health. In contrast to sleep quality, the analysis indicated that perceived stress did not significantly predict psychological well-being. This finding is noteworthy, as one might expect that effective stress management would inherently lead to better mental health outcomes. Prior research has consistently linked high stress levels to anxiety, depression, and poor mental health outcomes (Oyetunde et al., 2020; Olayemi & Olayemi, 2021). Stress in tertiary institutions is often attributed to academic workload, financial strain, and social pressures (Ogunbode & Ogunbode, 2019), all of which are prevalent in the Nigerian institution. However, the result in this study suggests that stress reduction alone may not be sufficient to improve psychological well-being among polytechnic students. This confirms Lazarus and Folkman, (1984) and Folkman, (2010) notion that the relationship between stress and well-being is complex and may be moderated by individual differences and contextual factors. The acceptance of Hypothesis 2 implies that other factors, such as resilience, social support, and coping strategies, may play more significant roles in mediating the relationship between stress and psychological well-being. For instance, individuals who possess strong coping mechanisms may effectively manage stress without experiencing detrimental effects on their mental health (Folkman & Moskowitz, 2004). Also, Nwankwo et al. (2019) demonstrated that individuals employing adaptive coping strategies reported lower stress and higher self-esteem. It is possible that students in this study have developed coping strategies that buffer the negative impact of perceived stress. The findings that sleep quality and perceived stress jointly predict psychological well-being, highlights the multifaceted nature of mental health according to Ryff, 1989. Also, Becker et al. (2016) noted that high stress often disrupts sleep, while poor sleep can heighten stress responses, creating a cyclical pattern that affects emotional health. Additionally, the combined effects of sleep quality and perceived stress demonstrated a modest joint predictive capability for psychological well-being. While the joint effect was statistically significant, it also points to the reality that many other factors contribute to psychological well-being that was not captured in this study. These may include social relationships, lifestyle choices, academic pressures, and environmental influences (Keyes, 2002). This is line with Ryff's (1989) affirmation that well-being is a complex construct shaped by multiple domains of functioning. The study concluded that perceived stress and sleep quality are jointly significant predictors of psychological well-being among Rufus Giwa Polytechnic students.

## Recommendations

The findings of this study have important implications for educational institutions, especially the polytechnics.

1. Students should be encouraged to establish regular sleep schedules, aiming for 7-9 hours of sleep per night and promote practices such as reducing screen time before bed, creating a comfortable sleep environment, and engaging in relaxation techniques like deep breathing or meditation.
2. Stress management workshops on campus that teaches students coping strategies such as mindfulness, time management, and effective study techniques should be implemented.
3. Peer support groups where students can share experiences and strategies for managing stress should be created.
4. Educational institutions and administrations should initiate awareness campaigns that inform students about the importance of sleep and stress management for academic success and overall well-being.



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