Innovations

Psychological Predictors of Suicidal Ideation among Nigerian Undergraduates and the Mediating Effect of Demographic Variables

[1]Meek I. Eyisi, [2]Abiodun M. Gesinde, [3]Emmanuel G. Abikoye

[1, 2] Department of Psychology, Covenant University, Ota Ogun State, Nigeria
[3] Department of Psychology, University of Uyo, Akwa-Ibom State, Nigeria

Abstract: *Suicidal ideation is an enormous public health concern on a worldwide scale. Because of the absence of an overt symptom or sign of its presence, suicide ideation is hidden from the inspection of public health till it is too late for intervention. Research efforts to identify variables predicting suicidal ideation among undergraduates is still ongoing and open for fresh findings especially in Africa where there is paucity of empirical information on the determinants. The study, therefore, investigates the predictors linked to suicidal ideation among a total of 4930 participants (1807 males mean: 2.25, SD: 1.122 and 3123 females mean: 2.11 SD: 1.171) randomly selected for the study with an age range of 16-34 years old. An ex-post facto research design was adopted for the study and two research hypotheses were posed. The German Beck scale for Suicide Ideation, the World Health Organization Quality of Life Scale, the Fear of Missing Out Scale, and sociodemographic questionnaire were employed for data collection. Multiple regression and Structural Equation Model (SEM) statistical tools were used for data analysis. At $p<0.05$, quality of life, perceived stress and Fo MO jointly accounted for 9.1% of the variance in suicidal thoughts and separately predicted suicide ideation at different degrees in this order (Quality of life $\beta = .428$; $t = 19.95$; $p <.000$; perceived stress $\beta =-0.083$; $t = -3.14$; $p <.002$; fear of missing out $\beta = -.134$; $t = -9.08$; $p <.000$). There was no significant mediation role for age, gender, and educational level in the relationship between the three independent variables and suicide ideation: FoMO: 0.281 (0.000), Quality of Life: -0.049 (0.002), Perceived Stress: -0.137 (0.000). In order to reduce global suicide ideation rates, it is essential to factor the predicting values of these variables into the development of preventive and management techniques for suicide ideation among undergraduates.*

Key words: *Fear of Missing Out, Perceived Stress, Quality of Life, Suicide Ideation, Undergraduates, Nigeria*

Introduction

Suicide is the intentional and deliberate termination of one's own life by a depressed or otherwise distressed individual (Arensman et al., 2020). The prevalence of suicide ideation in developing and developed countries is not a figment of imagination but a reality. In 2022 alone, an estimated 13.2 million, 3.8 million, 1.6 million adults seriously thought about suicide, planned suicide and attempted suicide respectively in the United States of America (Substance Abuse and Mental Health Services Administration, 2023). Many articles suggest that intrusive thoughts of suicide can manifest as a symptomatic response to certain mental disorders or, in some cases, as a reaction to adverse life events in the absence of any specific disorder (Ribeiro et al., 2015).

It is also important to note that undergraduates are more susceptible to mental health issues and suicidal thoughts compared to other populations (Nyer et al., 2013). Entry into universities, polytechnics, and college of education signifies a key developmental stage accompanied by some form of stressful activities or challenges that may have a negative impact on students' mental health. Changes in the environment, academic pressure, and sexual abuse, financial challenges, and social pressure, psychological abuse, low self-concept/esteem, social media addiction among others (Bayram et al., 2008; Gesinde et al., 2015; Gesinde, 2020;Okunlola et al., 2021; Okunlola et al., 2022; Abdul-Latif et al., 2024)have been documented in the literature. These can be burdensome for the students especially when they are combined with inadequate mental health care and coping mechanisms in universities (Olawale et al., 2016). Therefore, undergraduates can be most vulnerable to anxiety, depression, and, in this light, suicide attempts.

The Interpersonal Theory of Suicidal Behaviour (IPT) propounded by Joiner (Paniagua, et al., 2010) proposes that an individual will not die by suicide unless they have both the desire to die by suicide and the ability to do so. The theory further asserts that when people hold two specific psychological states in their minds simultaneously, and when they do so for long enough, they develop the desire for death. The two psychological states are perceived burdensomeness, and a sense of thwarted belongingness or social alienation predicting suicide ideation (Bhargav et al., 2022). The theory's central premise is that suicide ideation is experienced by an individual when there is a high increase in an individual's perception and feeling of burdensomeness. In this way, suicide ideation is translated into a suicide attempt; there is a reduced fear of death and increased pain tolerance (De-Beurs et al., 2019).

One of the most potent risk factors for different mental health problems, including suicidal thoughts, is Fear of Missing Out (FoMO). Researchers like Przybylski et al. (2013) refer to the "fear of missing out" as a "pervasive apprehension that others might be having rewarding experiences from which one is absent." This anxiety is

caused by a loss of belonging through the concept of social exclusion. FoMO is the persistent anxiety that others might be enjoying rewarding experiences from which one is absent. This feeling is heightened among undergraduates, who are typically active on social media, where they are exposed to constant updates on others' lives and activities. Social media amplifies this sense of exclusion because users often share idealised, curated versions of their lives, which can make viewers feel as if they are missing out on enjoyable or meaningful moments (Przybylski et al., 2013). In Nigeria, where social media interaction is increasingly becoming prominent, students mostly use social media to compare themselves with other students, which may make them develop an inferiority complex and rejection (Alt et al. 2018). This social comparison can amplify perceived stress, a factor that not only affects students' quality of life and mental well-being but also a direct trigger to the likelihood of students considering suicide (Baker et al., 2016). Research suggests that undergraduates who often suffer from FoMO are more vulnerable to stress, which can gradually metamorphose to severe mental health issues like depression and suicidal tendencies (Olufadi, 2016).

In addition, undergraduate students are in the middle of personal, academic, and societal conflicts where they are forced to weigh between the three even as they can hardly handle one. The failure to meet expected roles and responsibilities may cause one to feel worthless and develop anxiety, depression, and other mental disorders as indicated by Beiter et al., (2015). A silent competition, which is amplified through social media usage, reinforces feelings of inadequacy and failing to meet societal standards, often leading to FoMO and perceived stress, both of which are precursors to suicide ideation (Olufadi, 2016).

Perceived stress also takes a toll on mental well-being. Chronic stress is associated with an increased risk of developing mental health disorders, such as anxiety disorders, depression, and burnout. The constant pressure and overwhelming demands can lead to emotional exhaustion, feelings of helplessness, and reduced overall life satisfaction (Terrill, 2022). These pressures can take many forms, including romantic relationship problems, peer acceptance of destructive behaviours, bullying and victimization (Barbayannis et al., 2022). For Nigerian students, major sources of perceived stress include academic pressures, financial strain, and cultural expectations (Bayram & Bilgel, 2008). The discrepancy between actual and optimal levels of stress has been identified as another general feature of FoMO which may be quite detrimental in students' context since they must address the internal pressures of academic life, social comparison and external pressures of their educational environment (Olawale et al., 2016). This accumulative stress is not only associated with anxiety and depression but also with suicide ideation, which

makes stress management interventions for undergraduates important (Hirsch et al., 2019).

Quite a number of studies have established the correlation between age, gender, level of study and suicide ideation. Aroyewun et al. (2022) assert that the culpability of age in suicidal ideation is not in doubt, gender difference has been inconsistent in predicting suicidal ideation among university students. Iweama et al. (2024) study among 616 undergraduates in Nigeria (21.41 ± 4.72 years) reveal that female gender, depression, hopelessness and perceived burdensomeness were associated with suicidal ideation while being a 300-level students is associated with suicidal attempt. Adom-Mensah (2022) study which aimed at establishing the individual characteristics predisposing undergraduate students to suicide ideation in the University of Cape Coast revealed that age, gender, program of study and students' level of study have significant association with students who are predisposed to suicide ideation.

Several factors have been underpinned as the causes of suicide ideation, such as the end of a relationship, sexual and domestic violence etc. but the available solutions to suicide prevention, psychotherapy, and rehabilitation are not adequate (Schmelefske et al., 2022). Iweama et al. (2024) observed that data about suicidal ideation, attempts, and relationships with psychiatric factors, perceived burdensomeness, and thwarted belongingness is scarce in Nigeria. There also seems to be a paucity of research exploring the predictors of suicide ideation with a significant focus on self-esteem, academic stress, and social anxiety and mindfulness-based therapy among undergraduates in Nigeria (Ajibola et al., 2022). Iweama et al. (2024) equally observed that information about suicidal ideation, attempts, and relationships with psychiatric factors, perceived burdensomeness, and thwarted belongingness is sparse in Nigeria.

Using the independent variables of FoMO, perceived stress, quality of life, this study aims to provide a comprehensive perspective on the determinants of suicidal ideation among Nigerian undergraduates and the mediating role of age gender and level of study. It is, therefore, hypothesized that fear of missing out, perceived stress, quality of life will not jointly and separately predict suicide ideation among undergraduate just as age, gender and level of study will not significantly mediate the relationship between fear of missing out, perceived stress, quality of life and suicide ideation. Identifying and addressing these could play a significant role in reducing suicidal ideation and promoting student well-being. It will also deepen the knowledge base of counselling psychologists on predictors and mediators of suicide ideation and thereby enhance their ability to educate and guide young adults in

mental health management, ultimately preparing them to support at-risk clients effectively.

Methods

This study utilised an ex post facto research design. The study population consisted of undergraduates schooling in the three of the six geo-political zones in Nigeria (Southwestern, Southeastern, and North central) but not necessarily indigenes of States in the geo-political zones. A total of 4930 participants (1807 males mean: 2.25, SD: 1.122 and 3123 females mean: 2.11 SD: 1.171) randomly selected from universities in the three geo-political zones with an age range of 16-34 years old participated in the study. Most of the respondents were from the southwest geopolitical zone (42.5%), female (63.3%), single (84.1%), and Christian (71%). Also, many of the students were in the 200 level of study (36.3%), and most students fell within the age range of 18-24 (76.2%).The universities for the study are Benue State University, University of Lagos, Lagos State University, Covenant University, Bells University of Technology, University of Ibadan, University of Nigeria Nsukka, Nnamdi Azikiwe University, Anambra State University, Enugu State University.

The breadth of the Sample for this study was obtained using Cochran's (1977) formula developed for the sample size of an unknown population.

Equation 1:

$$n = \frac{Z^2 PQ}{e^2}$$

Where

n_0 = Sample size

e = is the desired level of precision (i.e., the margin of error 0.05),

p = is the (estimated) proportion of the population that has the attribute in question, which is 80% (2.36).

q = is $1 - p$.

z = Z value in the table value. Per the standard tables, a 95 % confidence level gives us Z values 1.96.

$$n = \frac{1.96^2(2.36)(1 - 2.36)}{0.05^2}$$

$$n = \frac{3.84 \ (2.36)(1.36)}{0.0025}$$

$$n = \frac{(3.84)(3.21)}{0.0025}$$

$$n = \frac{12.3264}{0.0025}$$

$$n = 4,930$$

The following instruments were used to collect data:

    i)   Socio-Demographic Questionnaire

This contains items that seek data on participants' socio-demographic variables such as age at last birthday, sex, ethnic group, religion, level of study, course of study, and university of study. The researchers generated these items.

ii) Fear of Missing Out Scale (FoMOS) developed by Przybylski, et al. (2013) was used to assess the fear of missing out among participants. The 10-item Fear of Missing Out Scale had a high internal consistency (α = 0.93) (Przybylski et al., 2013). For this study, a pilot test was conducted, and split-half reliability coefficients of Guttman and Spearman-Brown yielded .660 and .664 for both equal and unequal length, respectively.

iii) Perceived Stress Scale (PSS) developed by Cohen, et al. (1983) was used to establishpe rceived stress among the participants. It is a 10-item with scoring on a 5-point Likert format ranging from never (4) to very often (0). For this study, a pilot test was conducted, and split-half reliability coefficients of Guttman and Spearman-Brown yielded .772 and .772 for both equal and unequal length, respectively and an internal consistency of .654 Cronbach's alpha. Cohen, et al. (1983) reported Cronbach's alpha coefficient of the scale was 0.70, and split-half reliability of .82.

iv) World Health Organisation Quality of Life (WHOQoL) developed by Carol et al. (2003) was used to assess the quality of life of undergraduates. It is a 16-item scale with a 7-point scale response format ranging from delighted, pleased, satisfied, mixed, dissatisfied, unhappy, and terrible, which is 7-1, respectively. For this study, a pilot test was conducted, and split-half reliability coefficients of Guttman and Spearman-Brown yielded .810 and .810 for both equal and unequal length, respectively and an internal consistency of .889.

v) German Beck Scale for Suicide Ideation (BSS) developed by Luxton, et al. (2011) was adopted for data collection on suicide ideation. It is a 10-item scale scored on a 5-point response format ranging from 1 = never, 2 = infrequently, 3 = sometimes, 4 = frequently, and 5 = always. The total BSS score can range from 0 to 38, with higher values indicating a greater risk of suicide. Results of the pilot study validation of the German Beck Scale for Suicide Ideation (BSS) showed that the scale has a Guttman split-half reliability coefficient of .910 and a Spearman-Brown coefficient of .913 for equal and unequal length, respectively and internal consistency of .947 Cronbach's alpha.

The researchers obtained an introductory letter from the Department of Psychology, Covenant University, which was presented to relevant authorities upon arrival at selected institutions. The consent of the Covenant University Ethical Review Board was acquired. Participation was very voluntary. Participants were given an informed consent document to indicate willingness to take part in the study. Information obtained was held and handled with the utmost confidentiality by not disclosing the names or any identifying information of any research participant.

Result
Research Question1

Table 1: Overall model evaluation of multiple regression analysis on fear of missing out, perceived stress, and quality of life as predictors of suicide ideation.

Model	Regression	Source of variation	Sum of squares	Df	Std Error	Mean square	F	Sig.
	R = 0.302ᵃ	Regression	600.234	3	1.102	200.078	164.848	.000ᵇ
	R² = 0.091	Residual	5978.728	4926		1.214		
		Total	6578.234	4929				
a. Predictors: (Constant), Fear of Missing Out, Quality of life, Perceived Stress								
b. Dependent Variable: Suicide Ideation								

Table 2. Testing the regression weights of fear of missing out, perceived stress, and quality of life in predicting suicide ideation.

Predictors	B	Coefficients Std. Error	T	Sig.
(Constant)	1.905	0.081	23.586	0.000
Quality of life	0.428	0.021	19.945	0.000
Perceived Stress	-0.083	0.026	-3.141	0.002
Fear of Missing Out	-0.134	0.015	-9.078	0.000

a. Dependent Variable: Suicide Ideation

The overall model evaluation (Table 1) of the multiple regression analysis on fear of missing out, perceived stress, and quality of life as predictors of suicide ideation among undergraduates showed that 9.1% of the variation in suicide ideation was a result of the joint effect of fear of missing out, perceived stress, and quality of life. The error term explains the remaining 90.9%. This shows that the model has a poor fit. The regression weights of the independent variables reveal (Table 2)that quality of life is the most potent predictor of suicide ideation among the study sample (β = .428; t = 19.95; p <.000). This was followed by FoMO (β =-.134; t = -9.08; p <.000) though negative and finally perceived stress (β = .134; t = 9.08; p <.002) respectively. There is also a weak correlation between the predictors and the

response variable (suicide ideation) (R=0.302[a]). It can also be seen that Quality of life had a positive significant effect (β = 0.428, p<0.05) on suicide ideation, while perceived stress and fear of missing out had a negative and significant effect on suicide ideation (β = -0.083, p<0.05) and (β= -0.134, p<0.05) respectively.

Therefore, hypothesis one, which states that fear of missing out, perceived stress, and quality of life will not have joint and separate significant impact on suicide ideation among undergraduates, was rejected ($F_{(3,4926)}$ = 164.848, p<0.05). This implies that fear of missing out, perceived stress, and quality of life do have a separate and joint significant effect on suicide ideation among undergraduates.

Research Hypothesis 2:
Table 3: Mediating analysis summary for the effect of age, gender, and level of study on suicide ideation.

Relationship	Direct without mediator	Direct with mediator	Indirect effect
FM, A: G:L, SI	0.281 (0.000)	0.281 (0.000)	-
QL, A: G:L, SI	-0.049 (0.002)	-0.049 (0.002)	-
PS, A: G:L, SI	-0.137 (0.000)	-0.137 (0.000)	-

Values are in estimates (p-value)

Keys

A - Age

G - Gender

L - Level of study

FM - Fear of missing out

QL - Quality of life

PS - Perceived stress

The structural equation model (SEM) with AMOS was used to examine the mediating effect of age, gender, and level of study on the relationship between fear of missing out, quality of life, perceived stress, and suicide ideation. From the Baron and Kenny (1986) method, there was no change in the influence of fear of missing out, quality of life, and perceived stress on suicide ideation after the mediators (age, gender, and level of study) were controlled. This shows that there was no mediation path of age, gender, or level of study on the effect of fear of missing out, quality of life, and perceived stress (Table 3). Therefore, the hypothesis which stated that age, gender variables, and level of study are not significant mediators of the effect of fear of missing out, perceived stress, and quality of life on suicide ideation, was accepted. Fig 1 below shows the pattern of relationships among variables. The variables are connected by straight arrows that indicate the directions of the causal relationships.
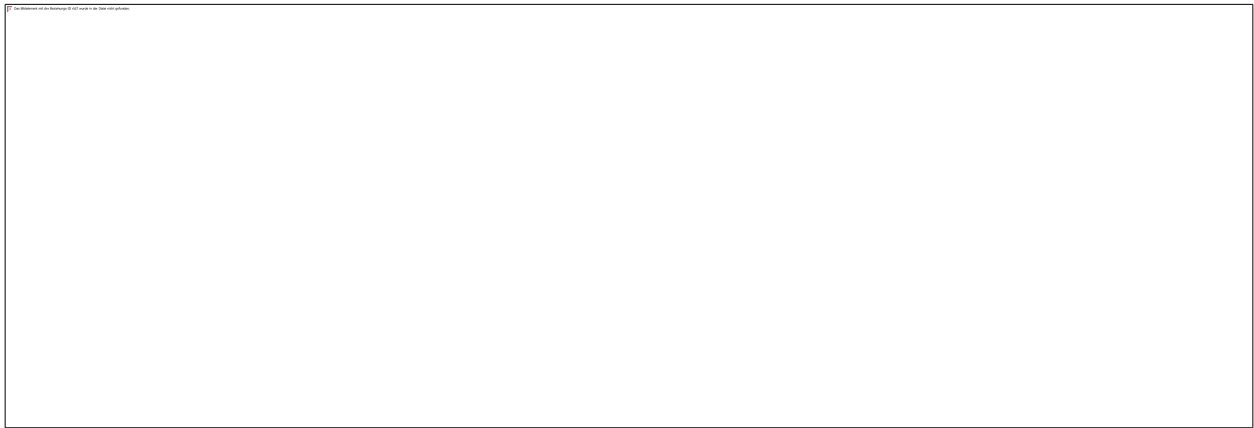
Figure 1: Path diagram for the mediating effect of age, gender, and level of study on suicide ideation.

Discussion

The hypothesis, which states that fear of missing out, perceived stress, and quality of life will not jointly and separately predict suicide ideation among undergraduates, was rejected. The hypothesis was tested with multiple regression analysis and overall model evaluation and fear of missing out, quality of life, and perceived stress as predictors of suicide ideation. In the Overall Model Evaluation, there was variation in suicide ideation, which was a result of the joint effect of fear of missing out, perceived stress, and quality of life. There was also a weak correlation between the predictors and the response variable (suicide ideation). Quality of life had a positive significant effect on suicide ideation, while perceived stress and fear of missing out had a negative and significant effect on suicide ideation, respectively. The findings imply that fear of missing out, perceived stress, and quality of life do have a separate and joint significant impact on suicide ideation among undergraduates.

This implies that a single predictor of suicide ideation has a triggering effect tendency on suicide ideation. Likewise, the three predictors jointly trigger suicide ideation. Data from respondents denoted that those who were positive for suicide ideation were equally positive for either a single predictor of suicide ideation, two predictors, or the three predictors jointly. The nature of the suicide ideation in these categories was varied. From the measurements in the single category, those whose data signified fear of missing out alone had the weakest value for suicide ideation. Those for perceived stress alone had the next higher value in suicide ideation after fear of missing out. Poor quality of life as a single predictor topped the values for suicide ideation in a single category. In the joint impact category, respondents whose data signified poor quality of life and perceived stress had the highest and strongest value for suicide ideation, those positive for poor quality of life and fear of missing out had a slightly lower value from the highest value, those positive for fear

of missing out and perceived stress had the most negligible value and those positive for the three, unexpectedly had only topped the most negligible value. Seemingly, one of the predictors probably served as a mediator. Previous research by Reyes et al. (2018) indicated that time spent on social media hurt perceived physical health, indicating that individuals who spent more time on social media reported greater dissatisfaction with the physical health domain of their quality of life. This means that fear of missing out affects quality of life negatively. This explains why those in this joint category had the highest value for suicide ideation.

Similarly, linking the joint impact of fear of missing out on Quality of life, Selsemer's (2023) study's findings suggest a significant negative correlation between FoMO and all three domains of quality of life assessed precisely: physical health, psychological health, and social relationships. In other words, higher levels of FoMO were associated with greater dissatisfaction in physical health, psychological health, and social relationships. Furthermore, the negative relationship between FoMO and all three quality of life domains remained statistically significant when controlling for the covariates of age, time spent on social media in the past two weeks, recent life-changing events, and existing mental health diagnoses. These findings support that FoMO uniquely predicts poorer perceptions of physical health, psychological health, and social relationships.

Additionally, poorer QoL was associated with higher odds of suicide ideation (Fairweather et al., 2016; Farabaugh et al., 2012). Also, poorer QoL was still found to be a significant predictor of suicidal ideation after logistic regression analysis was performed on the impact of sociodemographic and clinical factors. The results obtained by Koivumaa et al. (2001) of a longitudinal epidemiological study showed that adults' baseline self-reported life dissatisfaction was associated with a higher risk of completed suicide throughout the 20-year follow-up.

Perceived stress, as well as stressful life events such as family stressors or academic stressors, have been previously identified as predictors for suicidal ideation and may have contributed to this development in some form. According to the Narrative-Crisis Model of Suicide, experiencing stressful life events increases the likelihood of already vulnerable individuals developing Suicidal Crisis Syndrome, culminating in a sense of entrapment and little hope for the future, social withdrawal, affective disturbance, and hyperarousal. The Suicidal Crisis Syndrome, in turn, has been linked to suicidal ideation as well as imminent suicidal behavior (Bloch-Elkouby, 2020).

Findings in the research that perceived stress hurt suicide ideation and is consistent with previous investigations of O'Rourke et al. (2023); the previous findings reveal that as stress levels increased, adolescents who were more physically active showed less suicidal ideation than less active adolescents.

There is a probability that perceived stress served as a mediator in the joint category of predictors of suicide ideation, as supported by this previous research.

Respondents who were positive for perceived stress and fear of missing out were probably physically active, and this led to a reduction in suicide ideation. Additionally, for the joint category involving the three predictors of suicide ideation, perceived stress may not have efficiently reduced suicide ideation because of the negative impact of fear of missing out on quality of life. The category positive for poor quality of life and perceived stress that had the highest value for suicide ideation may have been physically inactive, or probably sick, or may have been experiencing stressful life events.

Previous research also shows that at higher stress levels, adolescents who spent more time on their phones reported more suicidal ideation than those who spent less time on their phones. This effect becomes especially apparent at a high-stress level, where adolescents who only spent two hours per day on their phones did not meet the cut-off score for suicidal ideation. This narrative is also in consonance with our present research findings.

O'Rourke et al. (2023) suggest that maintaining a healthy level of physical activity, spending little time on the phone, and reducing alcohol consumption may, at least to a certain degree, weaken the link between perceived stress and suicidal ideation.

While physical activity can be seen as a physical stressor, as it acutely increases circulating cortisol, this does not necessarily correspond with an increase in subjectively perceived stress (Hill, 2008). On the contrary, Kim et al. (2019) stated that higher physical activity has been linked to less perceived stress in adolescents. Thus, a balanced physical activity approach is certainly important for optimal physical and mental health. From the present research findings, it can be inferred that perceived stress, fear of missing out (FoMO), and Quality of life do have a separate and joint impact on suicide ideation.

Hypothesis two states that age and gender will not significantly mediate the relationship between fear of missing out, perceived stress, quality of life and suicide ideation and the hypothesis was accepted. The structural equation model (SEM) with AMOS was used to examine the mediating effect of age, gender, and level of study on the relationship between fear of missing out, quality of life, perceived stress, and suicide ideation. From the Baron and Kenny (1986) method, there was no change in the influence of fear of missing out, quality of life, and perceived stress on suicide ideation after the mediators (age, gender, and level of study) were controlled. This shows that there was no mediation path of age, gender, or level of study on the effect of fear of missing out, quality of life, and perceived stress. The indirect effect of fear of missing out, quality of life, and perceived stress on suicide ideation could not be tested for significance. Age, gender, and level of study do not mediate the relationship between fear of missing out, perceived stress, quality of life, and suicidal ideation. This may explain the lack of similar research for comparison. Age, gender, and level of study, however, have significant effects on fear of missing out, perceived stress, and quality of life, though not mediating effects. Gul et al. (2022)

found that gender significantly influenced the fear of missing out (FoMO), identifying male gender as a risk factor, alongside younger age, as predictors of FoMO. Mocny-Pachońska et al. (2020) reported that first-year students experienced the highest levels of stress. In contrast, other studies indicated that final-year students reported higher perceived stress levels (Jowkar et al., 2020; Saddki et al., 2017).

Research indicates that gender influences perceived stress, with females reporting higher levels than males (Zinurova et al., 2018). Age and gender also impact quality of life. For the elderly, engagement in social activities is more crucial for enhancing quality of life than for younger individuals, particularly among elderly females (Park et al., 2015; Yanos et al., 2001).

Conclusion

Suicide ideation is prevalent among undergraduates in Nigeria. The predictors of suicide ideation played significant roles in the hierarchy of prevalence of suicide ideation in the three geopolitical zones in Nigeria under study. Furthermore, for suicidal behaviour to be diminished to a significant minimum, the predictors of suicide ideation should be addressed. Incorporating the predictors of suicide ideation into treatment and thoroughly evaluating them in individuals exhibiting suicide ideation would be a valuable approach for more effective intervention and care. Mindfulness-based cognitive therapy could yield better results in the treatment of suicide ideation if the predictors triggering suicide ideation in individuals are identified and equally resolved during the treatment. Therefore, expertise in this modality of treatment must be developed and enhanced for optimum reduction in suicidal behaviour.

References

1. Abdul-Latif, C.A., Kor, J.A.M and Stephen, N (2024). Social media addiction and its impact on university of Cape Coast distance education students' academic achievement. Journal of Education, Society and Behavioural Science,37 (6), 105-18.
2. Adom-Mensah, B.A (2022). Individual characteristics predisposing undergraduate students to suicide ideation in the University of Cape Coast, Ghana. Journal of Advanced Psychology 4(2), 1-8.
3. Ajibola, A. O and Agunbiade, O. M (2022). Suicide ideation and its correlates among university undergraduates in south western Nigeria. Community health equity research & policy, 43(1), 45-58.
4. Alt, D andn Boniel-Nissim, M (2018). Links between adolescents' deep and surface learning approaches, problematic internet use, and Fear of Missing Out (FoMO). Internet Interventions, 13, 30-39.
5. Arensman, E., Scott, V., De Leo, D and Pirkis, J (2020). Suicide and suicide prevention from a global perspective. Crisis. 6, 83-95.

6. Aroyewun, B.A., Adeyemo,S.O. and Olukolade, O (2022). Prevalence of suicidal ideation among sample of university undergraduate students in Southwestern Nigeria. KJHS 2(1), 1-12.

7. Baker, Z. G., Krieger, H and LeRoy, A. S (2016). Fear of missing out: Relationships with depression, mindfulness, and physical symptoms. Translational Issues in Psychological Science, 2(3), 275-282.

8. Barbayannis, G., Bandari, M., Zheng, X., Baquerizo, H., Pecor, K. W and Ming, X (2022). Academic stress and mental well-being in college students: correlations, affected groups,   and COVID-19. Frontiers in Psychology, 13, 886-944.

9. Baron, R.M and Kenny, D.A (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51(6), 1173-1182.

10. Bayram, N andBilgel, N (2008). The prevalence and socio-demographic correlations of depression, anxiety, and stress among a group of university students. Social Psychiatry and Psychiatric Epidemiology, 43(8), 667-672.

11. Beiter, R., Nash, R., McCrady, M., Rhoades, D., Linscomb, M., Clarahan, M and Sammut, S (2015). The prevalence and correlates of depression, anxiety, and stress in a sample of college students. Journal of Affective Disorders, 173, 90-96.

12. Bhargav, M and Swords, L (2022). Role of thwarted belongingness, perceived burdensomeness and psychological distress in the association between adverse childhood experiences and suicidal ideation in college students. BJPsych open, 8(2), e39.

13. Bloch-Elkouby, S (2020). How do distal and proximal risk factors combine to predict suicidal ideation and behaviors? A prospective study of the narrative crisis model of suicide. JAD 277, 914–926.

14. De Beurs, D., Ten Have, M., Cuijpers, P and De Graaf, R (2019). The longitudinal association between lifetime mental disorders and first onset or recurrent suicide ideation. BMC psychiatry, 19, 1-9.

15. Fairweather-Schmidt A.K, Batterham PJ, Butterworth P, and Nada-Raja S (2016). The impact of suicidality on health-related quality of life: a latent growth curve analysis of community-   based data. Journal of Affective Disorders 31:14–21.

16. Farabaugh, A., Bitran, S., Nyer, M., Holt, D. J., Pedrelli, P., Shyu, I.,... and Fava, M (2012). Depression and suicidal ideation in college students. Psychopathology, 45(4), 228-234.

17. Gesinde, A.M (2020). Gender and paternal psychological abuse on psychopathology symptoms among children and adolescents in Akwa Ibom State, Nigeria. Cogent Social Sciences, 6(1).

18. Gesinde, A. M and Sanu, O. J (2015). Psycho-demographic correlates of behaviour towards seeking counselling intervention among workers in Lagos, Nigeria. British Journal of Guidance & Counselling, 43(5), 570–583.

19. Gul, H., Firat, S., Sertcelik, M., Gul, A., Gurel, Y and Kilic, B. G(2022). Effects of psychiatric symptoms, age, and gender on fear of missing out (FoMO) and problematic smartphone use: A path analysis with clinical-based adolescent sample. Indian Journal of Psychiatry, 64(3), 289-294.

20. Hill, E. E (2008). Exercise and circulating cortisol levels: The intensity thres hold effect. Journal of Endocrinological Investigation. 31, 587–591.

21. Hirsch, J. K., Rabon, J. K., Reynolds, E. E., Barton, A. L and Chang, E. C (2019). Perceived stress and suicidal behaviors in college students: Conditional indirect effects of depressive symptoms and mental health stigma. Stigma and Health, 4(1), 98-106.

22. Iweama, C.N., Agbaje, O.S., Lerum, N.I., Igbokwe, C.C and Ozoemena L.E (2024). Suicidal ideation and attempts among Nigerian undergraduates: Exploring the relationships with depression, hopelessness, perceived burdensomeness, and thwarted belongingness. SAGE Open Med. 2024 Mar 25;12:20503121241236137.

23. Jowkar Z., Masoumi M andMahmoodian H (2020). Psychological stress and stressors among clinical dental students at Shiraz School of Dentistry, Iran. Advanced Medical Education. 11:113-120.

24. Kim, H. J., Oh, S. Y., Lee, D. W., Kwon, J and Park, E. C (2019). The effects of intense physical activity on stress in adolescents: Findings from Korea Youth risk behavior web-based survey. International Journal of Environmental Research and Public Health 16, 1870.

25. Koivumaa-Honkanen, H., Honkanen, R., Viinamaki, H., Heikkila, K., Kaprio, J and koskenvuo, M (200). Life satisfaction and suicide a 20-year follow-up study. American Journal of Psychiatry, 158:433-9.

26. Luxton, D. D., Rudd, M. D., Reger, M. A and Gahm, G. A (2011). A psychometric study of the suicide ideation scale. Archives of Suicide Research, 15(3), 250-258.

27. Mocny-Pachońska, K., Trzcionka, A., Doniec, R.J., Sieciński, S andTanasiewicz, M (2020). The influence of gender and year of study on stress levels and coping strategies among Polish Dental. Medicina (Kaunas). 56(10):531-556.

28. Nyer, M., Holt D.J., Pedrelli, P., Fava, M., Ameral, V.,Cassiello, C.F., Nock, M.K., Ross, M., Hutchinson, D and Farabaugh, A (2013). Factors that distinguish college students with depressive symptoms with and without suicidal thoughts. Ann Clin Psychiatry. 25(1), 41–9.

29. O'Rourke, T., Humer, E., Plener, P.L (2023). Moderation effects of health behaviors on stress and suicidal ideation in adolescents: a cross-sectional survey during COVID-19. Scientific Reproduction 13, 21376.

30. Olawale, A. I., Adesina, O. S and Odebiyi, A. I (2016). Psychosocial problems of students with hearing impairment and its impact on academic performance in selected secondary schools in Ibadan, Nigeria. Journal of Special Education and Rehabilitation, 17(1-2), 103-119.

31. Olufadi, Y (2016). Social media addiction: An overview of psychological and social effects in young students. International Journal of Psychological Studies, 8(1), 53-65.

32. Paniagua, F.A., Black, S.A., Gallaway, M.S and Coombs, M.A (2010). The interpersonal-psychological theory of attempted and completed suicide: Conceptual and empirical issues. Bloomington: Author House

33. Park, H.K., Chun, S.Y and Choi, Y (2015). Effects of social activity on health-related quality of life according to age and gender: an observational study. Health and Quality of Life Outcomes 13, 140-144.

34. Przybylski, A.K., Murayama, K., DeHaan, C.R and Glad well, V (2013). Motivational, emotional, and behavioral correlates of fear of missing out. Computers in Human Behavior. 1841-1883.

35. Ribeiro, A. R., Nunes, O. C., Pereira, M. F and Silva, A. M (2015). An overview on the advanced oxidation processes applied for the treatment of water pollutants defined in the recently launched Directive 2013/39/EU. Environment International, 75, 33-51.

36. Saddki N., Sukerman N and Mohamad, D (2017). Association between Emotional Intelligence and Perceived Stress in Undergraduate Dental Students. Malaysian Journal of Medical Science. 24:59–68.

37. Schmelefske, E., Per, M., Khoury, B and Heath, N (2022). The effects of mindfulness-based interventions on suicide outcomes: a meta-analysis. Archives of suicide research, 26(2), 447-464.

38. Selsemeyer, M. L (2023). Influence of fear of missing out on quality of life. PLOS ONE 23, 112-132.

39. Substance Abuse and Mental Health Services Administration (2023). Key substance use and mental health indicators in the United States: Results from 2022 National Survey on Drug Use and Health Centre for Behavioural Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. (www.samhsa.gov)

40. Terrill, W (2022). Police use of force escalation and de-escalation: The use of systematic social observation with video footage. Police quarterly, 25(2), 155-177.

41. Zinurova, E., Dehart, R. M. (2018). Perceived Stress, Stressors, and Coping Mechanisms among PGY1 Pharmacy Residents. American Journal of Pharmaceutical Education. 82, 6574.