



Correlates of Suicide Warning Signs among University Undergraduates in Plateau State, Nigeria

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ABSTRACT

Background: Suicide is a pressing public health concern globally, with the World Health Organisation (WHO) estimating that approximately 800,000 people die by suicide every year. In Nigeria, studies suggest that university students are at a higher risk of suicidal behaviours, with prevalence rates ranging from 1.1% to 7.1%. Despite the growing concern, there is a dearth of research on the correlates of suicide warning signs among university undergraduates in Plateau State, Nigeria. Most studies have focused on Western populations, leaving a significant knowledge gap on the Nigerian context.

Objectives: This study investigated the correlates of suicide warning signs among university undergraduates in Plateau State, Nigeria, thereby contributing to the development of targeted interventions and support services for this vulnerable population.

Method: The study adopted a cross-sectional design in which 744 students voluntarily took part in the research. Data was collected using a non-probability sampling technique, specifically convenient sampling, was employed.

Results: To test the hypothesis, a correlational statistical model was employed to analyse the data. The result revealed that there were weak and insignificant relationships between the suicide warning signs and the different risk factors of suicide

Conclusion: Having known the risk factors associated with the suicide warning signs among Nigerian Students, the study concludes that it is important that the risk factors should always be looked out for in the students to control possible drift to actual suicide attempt or to even commit it.

Unique Contribution: This study provides empirical evidence on suicide warning signs among university undergraduates in Plateau State, Nigeria. By examining psychological, familial, spiritual, and substance-related factors simultaneously, it demonstrates that suicide warning signs are better understood as outcomes of multiple interacting risk factors rather than single predictors. The findings also extend the applicability of existing suicide risk frameworks to a Nigerian undergraduate population.

Key Recommendation: Universities should implement routine screening for suicide warning signs and strengthen campus counselling services. Suicide prevention efforts should adopt a multidimensional approach addressing psychological distress, family dynamics, and substance use. Future research should employ longitudinal designs to clarify causal relationships.

Key words: Correlates, Suicide Warning Signs, University Undergraduates, Plateau State, Nigeria.



INTRODUCTION

Suicide is a public health concern confronting Nigerian youths, the society, and indeed the global community. Suicide has been identified as a major public health concern among Nigerian students (Adeyemo & Olukolade, 2023) and a serious global health issue, with its prevalence, ideation, planning, and attempts constituting a significant source of economic, social, and psychological burden on families and society (Compton et al., 2005; Kabbash et al., 2023; Dachaw et al., 2024; Tsai et al., 2023; Urme et al., 2024; Bilson & Bilson, 2024; Lu et al., 2020). According to Bilson and Bilson (2024), suicide accounts for a substantial number of premature deaths and extensive psychological suffering and societal loss.

Globally, suicide remains one of the leading causes of death among adolescents, with the highest burden reported in Africa, and it continues to be a major cause of mortality among university students worldwide (Diallo et al., 2023; Kaggiwa et al., 2023; Raina-Aguiller et al., 2024). WebMD Editorial (2023) noted that suicide is often a severe outcome of treatable mental disorders such as depression, bipolar disorder, post-traumatic stress disorder, borderline personality disorder, schizophrenia, substance use disorders, and eating disorders.

Suicidal behaviours are increasingly becoming a major public health concern among Nigerian youths and university students. Recent studies report high prevalence rates of suicidal ideation and attempt among undergraduate populations, exceeding earlier national estimates and highlighting urgent campus mental health needs (Iweama et al., 2024). Content analyses of suicide reports in Nigeria further reveal that students constitute a significant proportion of suicide cases, with official statistics likely underestimating the true burden due to stigma, misclassification, and the criminalization of attempted suicide (Oyetunji et al., 2021). Empirical evidence from Nigerian universities has consistently linked suicidal ideation to academic stress, career anxiety, emotional dysregulation, substance use, adverse life events, and problematic behaviours, suggesting an interaction of individual psychopathology and contextual stressors (Onyishi et al., 2023; Falade et al., 2023).

Suicide often occurs when individuals are exposed to overwhelming stressors that exceed their coping capacities. Evidence indicates that suicide results from a complex and dynamic interaction of multiple risk factors rather than a single cause. Studies across West Africa have demonstrated that mental health challenges, psychological distress, social, economic, and environmental stressors jointly contribute to suicide among adolescents (Diallo et al., 2023). Similarly, Bilson and Bilson (2024) emphasized that suicide arises from the interplay of mental disorders, prior suicide attempts, personality characteristics, genetic vulnerability, family processes, and triggering psychosocial stressors. Other scholars have identified biological, psychological, social, environmental, spiritual, and clinical factors as central to suicide risk (Strivastava et al., 2018).

Mental illness, particularly depression, has been repeatedly identified as one of the strongest predictors of suicidal behavior (American Foundation for Suicide Prevention, 2019). Empirical studies among university students in China and Nigeria have established significant associations between depression, aggression, emotional distress, and suicidality (Xuan et al., 2023; Tolutope



et al., 2019). Beyond depression, substance abuse, family dysfunction, hopelessness, low social support, academic stress, and exposure to abuse have been identified as key suicide risk factors across diverse cultural contexts, including African, Asian, and Western populations (Bashow et al., 2004; Urme et al., 2022; Kabbash et al., 2023; Wu et al., 2024).

In Nigeria, contextual challenges such as economic hardship, insecurity, unemployment, delayed salaries, depression, and traumatic stress further predispose individuals to suicide and the manifestation of suicide warning signs (Ezeonyejeku, 2017; Ogunigbamile & Olusemi, 2017). Suicide warning signs represent behavioural, emotional, or psychological changes indicating increased suicide risk and provide crucial opportunities for early detection and prevention (Headspace, 2018). Evidence suggests that recognizing these warning signs and associated risk factors is central to effective suicide prevention strategies (WebMD, 2022, 2023).

Despite the extensive literature on suicide risk factors and suicidal behaviour, important theoretical and empirical gaps persist within the Nigerian context. Existing studies have largely focused on suicidal ideation, attempts, or isolated predictors such as depression, academic stress, or substance abuse, often using samples from other regions or non-student populations. There remains a paucity of empirical studies that examine suicide warning signs as distinct outcomes, particularly among university undergraduates in Plateau State. Furthermore, few Nigerian studies have adopted a multidimensional framework that simultaneously investigates psychological, familial, spiritual, and substance-related risk factors. As a result, the extent to which these factors—individually and collectively—relate to suicide warning signs among Nigerian undergraduates remains inadequately understood. This study addresses this gap by examining the correlates of suicide warning signs among university undergraduates in Plateau State, Nigeria, thereby contributing context-specific evidence to suicide theory, research, and prevention efforts in Sub-Saharan Africa.

In the light of the above, it becomes imperative to find out which of the risk factors confronting Nigerians on daily basis have a significant relationship with the suicide warning signs. Thus, the study intends to achieve the following aims:

AIM OF THE STUDY

1. Evaluate the relationship between the different suicide risk factors and the suicide warning signs among University Students in Plateau State Central Nigeria.
2. Investigate the risk factors that have a significant relationship with the suicide warning signs. Thus, it was hypothesized.

HYPOTHESIS

1. There was a significant relationship between the suicide warning signs and the risk factors associated with suicide among university students in Plateau state.
2. There was significant relationship between the suicide warning signs and the suicide risk factor among university students in Plateau state.



METHOD

Design

The study was a cross-sectional study in which students from different departments were administered parts of the suicide warning signs and the different suicide risk factors.

Population Size and Participants

1,002 Students registered for the General and compulsory courses of the university. At the time of data collection, 744 students were receiving lectures on general studies. The 744 students voluntarily took part in the study.

Participants fall within the ages of 16-56 years with a mean age of 22-28 and a standard deviation of 3.43 participants comprised of 441 Males and 303 Females who were either married or single and different religious background of either being Christians or Muslims. Participants were of 100 level year of study to 400 level year of study who had registered for the compulsory and mandatory general studies course of the University.

MATERIALS

The research material used was a structured questionnaire with an introductory section and eight sections. Section 'A' contained the suicide warning signs items while sections B, C, D, E, F, G, and H, contained the suicide risk factors items of spirituality matters, religious orientation matters, family environment items, depression screening index, the general health questionnaire, the alcohol use disorders, investigation test and the drug abuse screening test in that order.

The suicide warning signs contained 12 items; the spirituality scale had two sub-sections (spiritual support sub-scale and the spiritual openness sub-scale with 13 and 10 items respectively.

The age universal religious orientation scale contained 12 items. The family environmental scale had 4 sub-sections of family independence with an item each. The depression screening index had 12 items, the shortest version of the general health questionnaire was used for this study. The alcohol used disorder investigation index and the drug abuse screening test contained 10 items each.

The different measuring materials had statements describing different and various behaviours, feelings or experiences to which respondents were to indicate how much of the behaviour or feelings they do engage in or experience.

Each of the measuring materials had response options to which respondents were to respond to base on how it affects their feelings, behaviour or experience. The suicide warning scale had the response options: never, sometimes, most of the times, and always. The spirituality scale had the response options: strongly disagree, somewhat disagree, agree and agree strongly, strongly disagree, disagree, somewhat disagree, slightly disagree, neutral, slightly agree, somewhat agree, agree and strongly agree were the response options of the Age Universal religious orientation scale while the family environmental scale had the response option True or False. The depression



screening index had the responses; slightly too severe depression while the GHQ 12 had the response options varying from slightly to major experiences. The alcohol use disorders investigation test had the response; never to various days of each experience while the drug abuse screening test had “Yes” or “No” answer to respond to.

PROCEDURE

The data was obtained from University Undergraduates who were receiving general studies lecture.

Before the commencement of the exercise or the administration of the questionnaire, the purpose of the study was introduced and explained to the participants; participants were told during the introduction to respond to each statement or item in each section based on the instructions for each section. Respondents were also told to each statement without recourse to one another, since participation was not going to attract marks.

Participants were then told that participation in the exercise was voluntary. There after the questionnaires well administered to the students that were in the class during the data collection and told that those willing to participate in the study should sign in the space provided on the questionnaire to obtain their concern.

Participants were then told to respond to each statement honestly Based on the instructions provided in each section by indicating the frequency to which each statement influences or direct their behaviours and reaction.

All the students that were present in the lecture hall as of the time of data collection all participated in the study. There was no time limit allowed for the completion of the questionnaires.

However, the questionnaires were filled and returned within 30-45 minutes. Each respondent was appreciated upon the completion and return of the filled questionnaire.



RESULTS

Table 1: Demographic Data

Gender	Number	No
Males	441	50.27
Females	303	40.12

Marital Status

Married	26	3.49
Singles	718	96.54

Religion

Christianity	739
Islam	5

Year of Study

Year 1	620
Year 2	115
Year 3	-
Year 4	8

The above table presents the demographic characteristics of the respondents. A total of 744 university undergraduates participated in the study. The sample comprised more males (n = 441, 59.27%) than females (n = 303, 40.73%). The majority of the respondents were single (n = 718, 96.51%), while a small proportion were married (n = 26, 3.49%). In terms of religion, most of the participants identified as Christians (n = 739, 99.33%), with very few Muslims (n = 5, 0.67%). Regarding year of study, most respondents were in Year 1 (n = 620, 83.33%), followed by Year 2 students (n = 115, 15.46%). Only a few respondents were in Year 4 (n = 8, 1.08%), while no participants were drawn from Year 3 at the time of data collection.



Table 2: Summary of correlation coefficient between the suicide warning signs and the Risk Factors

S/N	Risk Factors	“R” Value
1	Spirituality support	- .036
2	Spirituality Openness	- .021
3	Religious Orientation	- .001
4	Family Cohesion	.017
5	Family Expressiveness	- .010
6	Family Conflict	.044
7	Family Independence	.014
8	Depression	.113
9	General Health	.103
10	Alcohol Abuse	.072
11	Drug Abuse	.071

The above table shows that the relationship between the suicide warning signs and the risk factors are weak; with those of depression and general health much stronger.

DISCUSSION

The present study examined the relationships between suicide warning signs and selected suicide risk factors among university undergraduates. The findings revealed that suicide warning signs were related to psychological, familial, spiritual, and substance-related risk factors; however, these relationships were generally weak and not statistically significant. This suggests that while the examined factors are relevant to suicide warning signs, none functioned as a strong independent predictor within the study population.

The observed weak relationships between suicide warning signs and depression, general health, alcohol abuse, and drug abuse partially agree with earlier studies that have identified these variables as important correlates of suicidal behavior and ideation (Bacse et al., 2023; Tsai et al., 2023; Diallo et al., 2023). Consistent with Bilson and Bilson (2024), the present findings support the view that suicide-related outcomes emerge from a complex and dynamic interaction of multiple risk factors, rather than from isolated variables. The presence of relationships, even though weak, aligns with evidence from West Africa and other regions showing that depression and substance use are commonly associated with suicidal outcomes among adolescents and young adults (Randalli et al., 2024; Quarske et al., 2020).



However, the current findings partially diverge from studies that reported strong or statistically significant associations between suicide risk factors and suicidal ideation or attempts (Xuan et al., 2023; Tolutope et al., 2019). Unlike those studies, which focused primarily on suicidal ideation or behavior, the present study examined suicide warning signs, which may represent earlier and more subtle manifestations of suicide risk. This distinction may explain the weaker associations observed, as warning signs may not yet reflect severe psychological distress or entrenched suicidal intent.

The weak relationships observed between suicide warning signs and spiritual support, spiritual openness, and family functioning variables also contrast with findings from studies that identified spirituality and family cohesion as strong protective or risk factors (Bashow et al., 2004). This discrepancy may be attributable to contextual and cultural factors, such as the relative homogeneity of the sample in terms of religion, or the possibility that spirituality and family processes exert indirect rather than direct effects on suicide warning signs.

Importantly, this study extends existing knowledge by demonstrating that among Nigerian university undergraduates, suicide warning signs may be influenced by the cumulative presence of multiple low-level risk factors rather than by any single dominant predictor. By adopting a multidimensional approach and focusing on warning signs rather than suicidal ideation or attempts, the study provides a nuanced understanding of early suicide risk within a Nigerian university context—an area that remains under-researched.

Several plausible explanations may account for the weak and non-significant relationships observed. First, the largely young and academically active undergraduate sample may possess protective factors such as peer support and ongoing institutional engagement that buffer the impact of risk factors. Second, social desirability bias and stigma surrounding suicide in Nigeria may have led to underreporting of distress and warning signs. Third, suicide warning signs are dynamic and context-dependent, and a cross-sectional design may not fully capture their fluctuation over time. Finally, it is possible that unmeasured variables—such as coping strategies, resilience, religiosity, or social support—moderated the relationships between risk factors and suicide warning signs.

In summary, while the present study found no significant relationships between suicide warning signs and the examined risk factors, the findings underscore the importance of viewing suicide risk among university students as a multifactorial and interactional phenomenon. This reinforces the need for comprehensive, early-stage, and context-sensitive suicide prevention strategies within Nigerian universities.

CONCLUSION

Based on the result, the study concludes that it is important to look out for risk factors in the students to control possible drift to actual suicide attempt or to even commit it.

This information will also go a long way in mapping out preventive measures to check suicidal tendencies among students and in the general population. Indeed, WebMD (2022, 2023) had specified and pointed out that studies have suggested that the best way to prevent suicide is to



know the risk factors and be alert to signs of depression and other mental health disorders, and intervene before the person can contemplate process of self-destruction.

As a society and a nation, we should be on the alert and monitor the incidences of the warning signs and the prevalence of the risk factors among students if we actually want to have healthy, peaceful and more productive youths in the Country.

Ethical clearance

Ethical consent was sought and obtained using the appropriate and standardized method from the participants used in this study. They were made to understand that the exercise was purely for academic purposes, and their participation was voluntary and that they can withdraw at any time.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Authors Contributions

Mike A. Bankat conceived the study, including the literature search. Suwa Goar handled the data analysis and interpretation. Joshua Y. Rotshak did the coding of the questionnaires, while James A. Lekwai collated the data, and compiled the complete work into a document ready for publication. All the authors participated in the discussion and also raised the finance for the research. All authors have critically reviewed and approved the final draft, and are responsible for the content and similarity index of the manuscript.

Availability of data and materials

The datasets on which conclusions were made for this study are available on reasonable request.

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REFERENCES

American Foundation for Suicide Prevention. (2019). *Risk factors and warning signs for suicide*.
<https://www.ruralhealthinfo.org/toolkits/suicide/3/american-foundation-for-suicide-prevention>.

Aroyewun, B. A., Adeyemo, O., & Olakoyade, O. (2023). Prevalence of suicidal ideation among a sample of university graduate students in Southwestern Nigeria. *Kwara Journal of Health Sciences*, 2, 1–12.

Bach, C., Lee, Y. J., Cho, I., Kim, C. J., Im, J. C., & Cho, S. (n.d.). Risk factors for suicidal ideation in the general population. *Frontiers in Psychiatry*.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC361715>

Bilson, J. B. (2018). Suicide and youth risk factors. *Frontiers in Psychiatry*, 9, Article 580. <https://doi.org/10.3389/fpsyg.2018.00580>

Compton, M. T., Thompson, N. J., & Kaslow, N. J. (2005). Social environmental factors associated with suicide attempts among low-income African Americans: The protective role of family relationships and social support. *Social Psychiatry and Psychiatric Epidemiology*, 40(3), 175–185.

Dachaw, B. A., Bliffy, B. A., & Wasale, M. A. (2024). Suicidal ideation among university students in Ethiopia. *Annals of General Psychiatry*, 23, Article 14.
<https://annals-general-psychiatry.biomedcentral.com>

Diallo, P., Aldridge, L. R., Bass, D., & Adams, L. B. (2013). Factors associated with suicide among adolescent students in four West African countries: An analysis using the Global School-Based Student Health Survey. *Journal of Adolescent Health*, 73(3), 494–502.

Ezeonuejekwe, K. (2017, December 8). *Why suicide is on the increase in Nigeria—Experts*. HuffPost. <https://www.huffingtonpost.com>

Headspace. (2018). *Identifying risk factors and warning signs for suicide*.
<https://headspace.org.au>

Home Campus Counselling and Wellness Centre. (2024). *Why is suicide so common among college students?* <https://www.govst.edu/suicide-prevention>

Kabbash, I. A., Salama, B., Mohammad, M. A., Galal, H., Yousef, N., & Elghazally, N.M. (2023) Perception and experiences of suicide among university students in Egypt. *Middle East Current Psychiatry*, 30, Article 87.
<https://doi.org/10.1186/s43045-023-00358-6>



Kabir, R., Syed, H. Z., Vinnakota, D., Okello, S., Isigi, S. S., Abdul Kareem, S., Parsa, A. D., & Arafat, S. M. Y. (2024). Suicidal behaviour among the university students in the UK: A systematic review. *Heliyon*, 10(2), <https://doi.org/10.1016/j.heliyon.2024.e24069>

Kaggwa, M. M., Arinaitwe, I., Muwanguzi, M., Nduhuura, E., Kajjimu, J., Kule, M., Najjuka, S. M., Nkola, R., Ajuna, N., Wamala, N. K., Machacha, I., Mamun, M. A., Ho, C. S. H., Griffiths, M. D., & Rukundo, G. Z. (2022). *Suicidal behaviours among Ugandan university students: A cross-sectional study*. *BMC Psychiatry*, 22, Article 234 <https://doi.org/10.1186/s12888-022-03858-7>

Kaggwa, M. M., Arinaitwe, I., Muwanguzi, M., Nduhuura, E., Kajjimu, J., Kule, M., Najjuka, S. M., Nkola, R., Ajuna, N., Wamala, N. K., Machacha, I., Mamun, M. A., Ho, C. S.-H., M. D., & Rukundo, G. Z. (2022). *Suicidal behaviours among Ugandan university students: A cross-sectional study*. *BMC Psychiatry*, 22, Article 234 <https://doi.org/10.1186/s12888-022-03858-7>

Kaggwa, M. M., Najjuka, S. M., Faramu, A., Griffiths, M. D., & Mamun, M. A. (2024). Suicide behaviors and associated factors among medical students in Africa: A systematic review and meta-analysis. *Journal of Affective Disorders*. <https://doi.org/10.1016/j.jad.2024.01.001>

Kukoyi, O., Orok, E., & Iyamu, D. (2024). Factors influencing suicidal ideation and self-harm among undergraduate students in a Nigerian public university. *Middle East Current Psychiatry*. <https://doi.org/10.1186/s43045-022-00274-1>

Mayo Clinic. (2024). *Suicide: Symptoms and causes*. <https://www.mayoclinic.org>

Ogunigbamilia, A., & Olusemi, J. (2017). Suicidal ideation in Nigerian adolescents: The role of rumination and academic hardiness. *Nigerian Psychological Research*, 3(7), 758–768.

Quarshie, E. N., Onyeaka, H. K., & Asante, K. O. (2024). Suicide behaviors among adolescents in Liberia. *BMC Psychiatry*. <https://doi.org/10.1186/s12888-024-02787>

Raina-Aguilar, P., Díaz-Jiménez, R. M., & Caravaca-Sánchez, F. (2024). Suicide risk among university students in Spain: Implications for social work. *British Journal of Social Work*, 68(4), 299–312.

Shrivastava, A., Campbell, R., Johnston, M., Bermont, C., & Strife, L. (2015). *Identification of risk factors for suicide among psychiatric patients: Can structured measurement tools be more specific?* <https://hdl.handle.net/20.500.14721/38303>.



Suicide Prevention Center of New York. (n.d.). *Risk factors associated with suicide*. NY S. Office of Mental. <https://www.preventsuicideny.org/risk-factors-associated-with-suicide/Health>.

Opakunle, T., Aloba, O., Babatunde, S., & Adesanmi, A. (2019). Suicidality in a non-clinical sample of Nigerian adolescents: Prevalence and correlates. *Suicidology Online*, 10(7), 1-8. <https://www.suicidology-online.com/pdf/SOL-2019-10-7.pdf>

Tsai, Y.-T., Konara Mudiyanselage, S. P., Ku, H.-C., Wu, Y.-L., & Ko, N.-Y. (2023). Global overview of suicidal behavior and associated risk factors among people living with human immunodeficiency virus: A scoping review. *PLOS ONE*, 18(3), e0269489. <https://doi.org/10.1371/journal.pone.0269489>

Urme, S. A., Islam, S., Begum, H., & Chowdhury, R. A. (2022). Risk factors of suicide among public university students in Bangladesh: A qualitative exploration. *Helijon*, 8(6), e09659. <https://doi.org/10.1016/j.heliyon.2022.e09659>

WebMD Editorial. (2022). *How to recognize symptoms of suicidal behavior*. WebMD. <https://www.webmd.com/how-to-recognize-symptoms-of-suicidal-behavior>

WebMD Editorial. (2023). *Warning signs for suicide*. WebMD. <https://www.webmd.com/warning-signs-for-suicide>

Wu, R., Zhu, H., Wang, Z.-J., & Jiang, C.-L. (2021). Suicide risk factors among university students in China: A large sample survey. *BMC Psychiatry*, 21, 474. <https://doi.org/10.1186/s12888-021-03480-z>

Xuan, P., Hua, S., Lin, L., & Jianli, Y. (2020). Gender differences in the preventive effects of depression and aggression on suicide risk among first-year college students. *Journal of Affective Disorders*, 274, 51–56. <https://doi.org/10.1016/j.jad.2020.04.123>