

Prevalence of Suicidal Ideation Among Secondary School Adolescents Exposed to Boko Haram Conflict in Maiduguri, Northeastern Nigeria

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ABSTRACT

Background: Suicide is the second leading cause of death among youths aged 10-24 years worldwide. Suicidal ideation, therefore, represents a growing global public health issue among youths and adolescents. Exposure to psycho-trauma due to Boko Haram conflict puts the adolescent in especially difficult circumstances that predisposes them to a range of mental health challenges including suicide.

Aim and Objective: The aim of the study is to assess the rate of suicidal ideation and attempt and the significant variables associated with these phenomena. **Methodology:** A cross sectional study with stratified sampling techniques was used to recruit a sample of 300 secondary school adolescents. Data was extracted using the BDI and BSI. **Results/ Discussion:** A total of 300 students were recruited into the study with a mean age of 16.5 years and SD (2.3). 52.3% were females. 40.7% have been directly exposed to violent acts of terrorism. 28% report suicidal ideation and 1.3 have attempted suicide. Spearman's rank correlation was run to determine the relationship between the level of depression and suicidal ideation. There was a moderate positive correlation between the degree of depression and suicidal ideation which was statistically significant ($r_s=0.413$; $p=0.0001$).

Conclusion:

There is a high rate of exposure to psycho-trauma and suicidal ideation among adolescent students in Maiduguri. Targeted intervention to assist this demographic is relevant to the post-conflict reconstruction effort to be designed by the national health system.

Key- words: prevalence, suicidal ideation, adolescents, post conflict

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Introduction

Suicidal ideations are suicide gestures, thoughts and plans about suicide which are precursors to suicide attempt or completed suicide. It is a known risk factor for suicidal attempt, which in turn increases the risk for deaths resulting from suicides. Suicidal thought is a spectrum which can range from a detailed plan to a fleeting consideration and does not include the final act of killing oneself.¹

Adolescence represents one of the critical transitions in the life span characterized by relatively poor understanding of the relationship between behavior and consequences or the degree of control over

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decision making including, those related to high-risk behaviours like suicidal ideations.² People living in areas affected by violent insurgencies are prone to increased psychosocial distress and poor socioeconomic conditions which could bring about depression, suicidal ideations and subsequently suicide.³ The resolution of psychological conflicts during adolescence is a necessity to a well-adjusted, stable and productive adult personality.^{4,5} Being an adolescent in an environment of anomie and uncertainty resulting from violent rebellion makes this transition particularly challenging.⁵ Excess environmental stress such as exposure to violent conflict may impede this important developmental process and predispose to different mental health disorders and increase the burden of disease due to mental illness among this psychologically fragile demographic.⁶ Suicidality is of particular interest in this conflict where suicide is considered by one of the belligerents as a justifiable instrument of war.

It is estimated that one million people die annually of suicide, and the rate among young people is rising. Among adolescents aged 15-19 years' suicide ranks as the fourth leading cause of mortality,⁷ and second leading cause of death among youths aged 10-24 years worldwide. Suicidal ideation, therefore, represents a growing global public health issue among youths and adolescents.⁸ A recent nationally representative survey of school-age adolescents (approximately 14-18 years) in United States showed that in the 12 months prior to the survey, 15% reported suicidal ideation while 7% reported making an attempt at suicide.⁹ Adolescents who survive such attempts often physically injure themselves seriously enough to require medical attention.^{10,11}

There are five recognized psychosocial issues that teens deal with during their adolescent years which affect their developmental trajectories. These include establishing an identity; establishing autonomy; establishing intimacy; becoming comfortable with one's sexuality; and making achievement.¹²

A recent prospective study examining developmental trajectories of suicide ideation across early to middle adolescences found that the highest risk was at age 12 years for boys and age 12-13 years for girls, and that depression, externalizing problems, and family and friend support played a role for the two sexes.¹³ Internally displaced persons more frequently have poor parents' education, non-intact families, poor socioeconomic resources, economic uncertainty, and restricted access to health care. They also have more school, behaviour, and health-related difficulties.^{14,15} These sets of factors may predict suicide behaviours^{16,17} which affects the developmental processes.

It is estimated that about 800 000 people die by suicide every year, representing an annual age-standardised suicide rate of 11.4 per 100,000 population globally and 6.11 per 100,000 population in Nigeria, specifically.¹⁸ Suicide is a public health issue that is estimated to contribute more than 2% to the global burden of disease by the year 2020, especially in sub-Saharan African countries where services are scarce.¹⁹ Suicide was recently identified by the World Health Organization (WHO) as a priority condition in the Mental Health Gap Action Programme (mhGAP).²⁰ In its 66th World Health Assembly, the WHO adopted the first-ever Mental Health Action Plan with suicide prevention as an integral part of the plan, with the goal of reducing the rate of suicide in countries by 10% by 2020.²¹ With this major shift in attention towards the prevention of



suicide, epidemiological research and basic data on the prevalence and risk factors for suicidal behaviours (ideation, plan, and attempt) are urgently needed in many countries of sub-Saharan Africa.

A study examined depression and suicidal attitude among adolescents in some selected secondary schools in Lagos State, Nigeria. A total number of 97 students were randomly selected from four secondary schools. Results showed that adolescents' thought line was significantly related to the depressive suicidal attitude. The adolescents' cognition also revealed difficulty in making decision and negative view of themselves and the world around them. The latter two were significantly related to the depressive suicidal attitude.

Despite the grave potential consequence for suicidal ideation and attempts, youth suicide prevention remains a neglected public health priority globally.¹² Researches reflecting on the prevalence, incidence and determinants of suicidal behaviour in Sub-Saharan Africa are not comparable with similar studies in the developed world.¹²

Hence, the need for such studies so as to address the menace of this public health problem. Most interventions on the mental health of internally displaced persons (IDPs) in Maiduguri lays emphasis on adults with depression and Post Traumatic Stress Disorder (PTSD) being priority disorders and little focus on suicide. Suicide is important in the context of the rise in the use of adolescent females as suicide bombers.

Objectives of the Study:

To determine the prevalence and socio-demographic factors associated with suicidal ideation among secondary school students in Maiduguri.

Methodology

This study assessed suicidal ideation among secondary school adolescents in Maiduguri between February and March, 2017.

Study Setting

Maiduguri is the capital and the largest city in Borno State. It is called Yerwa by locals. It is located between latitude 11°50'N and 13°09'E. The city is estimated to have a population of 1,907,600. The city has experienced tremendous increase in population caused predominantly by the influx of internally displaced persons (IDPs) dislodged by the recent insurgency.

There are sixteen wards in Maiduguri with approximately 4 secondary schools per ward. The secondary schools in Maiduguri have experienced repeated shutdowns due to the insurgency, however, the schools are now on session. The secondary schools teach in English and most of the students have a reasonable proficiency in written and spoken English.

Study design

The study is a cross sectional descriptive study that was carried out to assess suicidal ideation among secondary school adolescents

Sample Size Estimation

The sample size was calculated using the Kish Leslie formula for descriptive studies, $n = Z^2pq/d^2$ where, $n =$ sample size

$Z =$ standard normal deviate (which is usually 1.96).

$P =$ prevalence of suicidal ideation in Olayinka Omigbodun study which is 20%

$d =$ level of precision = 0.05

$q = (1-p) = 0.8$

Hence $= (1.96)^2 \times 0.2 \times 0.8 / (0.05)^2 = 245.86$.

The sample size was estimated to be 245.86 but has been rounded up to 300 to cater for



losses during the field work and to improve the accuracy of the study by allowing adequate representation.

Method of sampling

The method used is multistage cluster sampling technique. Out of the sixteen wards in MMC, three wards were randomly selected. The selected wards were Gwange, Maisandari and Mairi wards. Three schools were randomly selected from each ward and from the selected schools five classes were randomly selected and the whole populations recruited into the study.

Materials

Data was collected using a 21-item, English-based, self-administered, self-report inventory measuring the severity of depression (BDI) and suicidal ideation (BSI) in adolescents.

All consenting students in the selected classes were assembled in a large hall where the questionnaire was explained and handed over to them to self-administer. The

questionnaire included information on socio-demographic characteristics of the students in relation to suicide and depression. There was an introduction to the study, with a provision for appending their signature as a way of providing consenting to take part in the study. Due incentive was provided.

Data analysis

The data was analysed using statistical package for social sciences (SPSS) version 16.0. The data was subjected to simple descriptive and inferential analysis.

Result

A total of 300 students were recruited into the study with a mean age of 16.5 years and SD (2.3). 52.3% were females and 58.4% are in the senior secondary school category. Nearly half of the students (44.3%) reported having lost a close relative and 40.7% have been directly exposed to violent acts of terrorism in the course of the Boko Haram insurgency.

Table 1: Socio-demographic profile of the secondary school students

Characteristic	n	Percent (%)
Age groups		
10 - 14	27	9.0
15 - 17	176	58.7
>18	97	32.3
Sex		
Male	143	47.3
Female	157	52.7
Exposure to terrorism		
Yes	122	40.7
No	178	59.3
Loss of a loved one to terrorism		
Yes	133	44.3
No	166	55.3

Table 2: Prevalence of Major Mental Disorders among Respondents

Mental health disorder	n	Percent (%)
Suicidal Ideation	85	27.9
Suicidal attempt	4	1.3
Depression	119	39.8



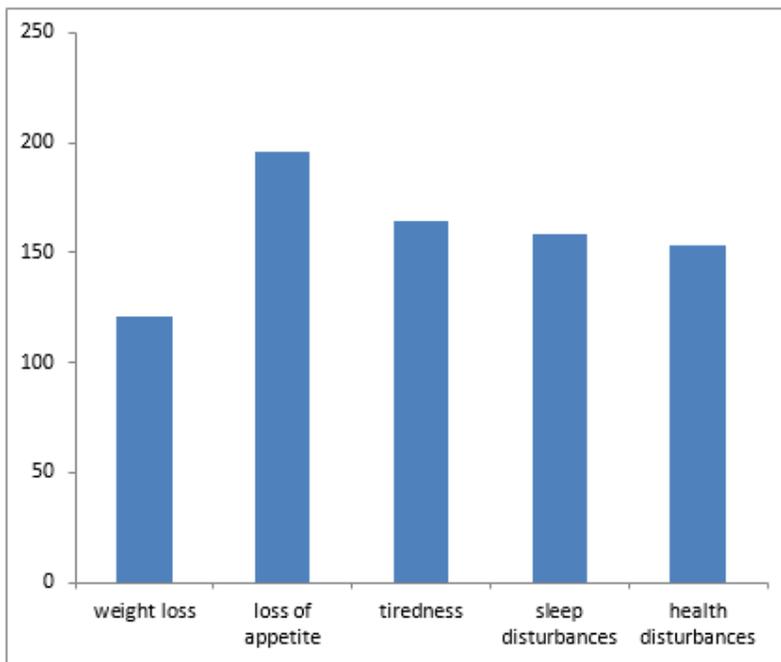


Figure 1: Phenomenology of biological symptoms of depression among respondents

Majority of our adolescent respondent's report experiencing some form of biological symptoms of depression, 65% (n=196). Only

40.8% (n=121) reported weight loss which was the least common biological symptom reported.

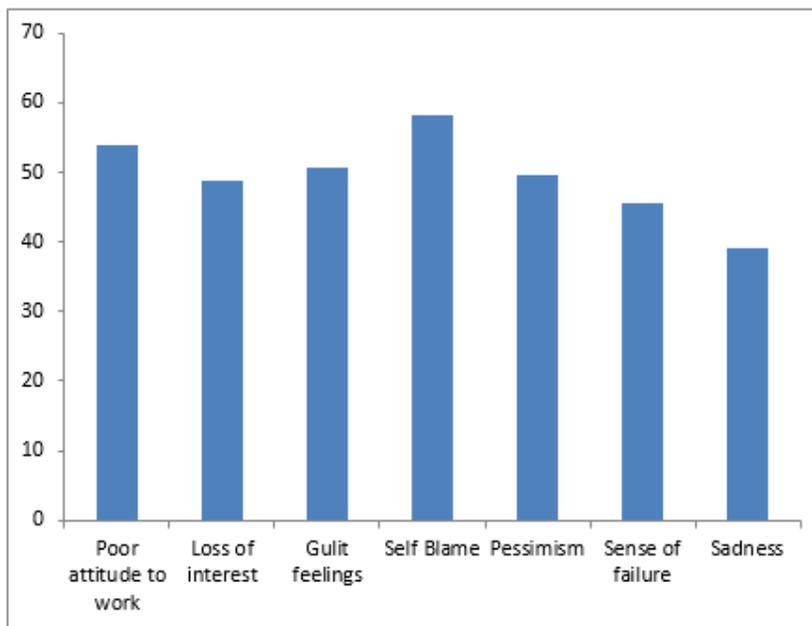


Figure 2: Phenomenology of psychological symptoms of depression among respondents

Table 3: Chi-square analysis of prevalence of suicidality and depression in relation to socio-demographic characteristics

	Depression (n)	Suicidal ideation (n)	Suicidal attempt (n)
Age groups			
10 - 14	9	5	1
15 - 17	68	53	2
≥18	39	21	0
	(p=0.89)	(p=0.3)	(p=0.27)
Sex			
Male	69	45	1
Female	48	38	2
	(p=0.002)	(p=0.2)	(p=0.5)
Exposure to Terrorism			
	58	35	3
	(p=0.006)	(p=0.7)	(p=0.3)

There seem to be significant differences in the tendency to develop depression between the sexes with males being more likely to report depression than females ($X^2=$, $n=69$, $p=0.002$). Exposure to acts of terrorism is significantly related to depression ($X^2=10.92$, $df=3$, $p=0.006$) but not to the tendency to carry out acts of deliberate self-harm ($X^2=0.98$, $df=3$, $p=0.8$) among the respondents in general. Losing a family member is related significantly with having suicidal ideation ($X^2=13.39$, $df=3$, $p=0.004$)

Spearman’s rank correlation was run to determine the relationship between level of depression and suicidal ideation.

There was a moderate positive correlation between the degree of depression and suicidal ideation which was statistically significant ($r_s=0.413$; $p=0.0001$).

Discussion:

In situations of conflict, children and adolescents are exposed to direct act of violence with its attendant psychological trauma despite deliberate efforts at shielding them.

Many of the students studied seem to have had exposure to violent acts of terrorism and nearly a half have lost a family member to the conflict. This degree of exposure to psychological trauma is similar to other conflicts situations like the violent conflict between Serbia and Bosnia 2 decades ago.⁴ And more recent and much closer conflict such as the intractable civil war in Somalia and Uganda.^{23,24}

This significant direct exposure often leads to breakdown of psychological coping systems leading to mental health disorders predisposing to the development of different forms of mental health disorders as was the case among refugees from other violent conflict such as Iraq.²⁵ Some of the mental health problems commonly reported in the context of violent conflicts is depression.²⁶ The finding of depression being relatively low among female adolescents compared to males is curious in the light of theoretical and epidemiological evidence.²⁷ We report a relatively high rate of depression among the adolescents exposed to the violent Boko Haram terrorist campaign in Maiduguri



northeastern Nigeria similar to reports by other workers in conflicts elsewhere.

Suicidal ideation which is quite commonly reported among adolescents with depression was found to be relatively high among secondary school students who have been exposed to the violent conflict in this region. The percentage of adolescents who reported having thoughts of committing suicide is more than the reports among their peers elsewhere in the same country where there is relative peace.²⁸

Few adolescents had reported attempt to commit suicide in the past year; an unexpected finding considering the nature of the conflict to which they are exposed where suicide bombing, seen as an effective instrument of war by one of the belligerents, is being utilized as a legitimate means of achieving tactical and strategic victories. This is particularly remarkable considering the tendency of the adolescent to be receptive to vicarious learning in the age of social media where acts of suicide bombing are widely accessible. Learning of another's suicide online may be another risk factor for youth. Social networking sites have particular importance, because these may afford information on suicidal behaviour of social contacts that would not otherwise be available.²⁹

There is a reasonable degree of association between suicide and the psychological symptoms of depression³⁰ which is consistent with the findings among our adolescents in this study. Scales to measure helplessness and hopelessness which were found to have good reliability and concurrent validity also significantly correlated with suicidal ideation.³⁰

There is also, established evidence of a relationship between severity of depression and suicidal ideation³¹ which is consistent

with the findings among our adolescent sample. This suggests a potential reduction of symptoms of depression through targeted intervention using drugs, psychotherapy or a combination of both may be a beneficial way of dealing with suicidal ideation.³² Increasing availability to proactive mental health services in schools reduces the risk of depression and suicidal ideation or attempt among adolescents³³ as such local school management boards should consider the establishment of school mental health services to serve as preventive measures for depression and suicidal ideation among secondary school students in our region that is afflicted by violent conflict.

Conclusion:

There is a relatively high rate of exposure to psychological trauma, depression and suicidal ideation among secondary school adolescents in Maiduguri. There is a relationship between the severity of depression and suicidal ideation among the students. Preventive as well as treatment interventions should be made available in all schools in Maiduguri.

References

1. Parks SE, Johnson LL, McDonald DD, Gladden M. Surveillance for violent deaths. National violent death reporting system, 16 states, 2010. *MMWR* 2014;63 (ss01):1-3. Available from <http://www.cdc.gov/mmwr/hyml/ss6301a1.htm>
2. Hau GS. Adolescence; its psychology and its Relation to Psychology, Anthropology, Sociology, Sex, Crime, Religious and Education (vol 1 and 2) Englewood cliffs, NJ: Prentice- Hall, 1904.



3. Jidda MS, Cornelius A, Abdulmalik JO. Effectiveness of psychoeducation and self-management in PTSD among adolescent internally displaced of Boko haram conflict in northeastern Nigeria. An unpublished MSc thesis in Child and Adolescent Mental Health. Centre for Child and Adolescent Mental Health, University of Ibadan-Nigeria
4. Boricevic MV, Margetic BA, Zecevic I, et al. Prevalence and correlates of suicidal attempt among patient adolescent of Croatia PTSD male war veterans. *Child Psychiatry and Human Development* 2014; 45:577. doi:10.1007/s10578-013-0426-2.
5. Smith P, Perrin S, Yule W, Hacam B, Stuvland RJ. War exposure among children from Bosnia-Herzegovina: psychological adjustment in a community sample. *J Trauma Stress*. 2002; 15(2):147-56.
6. Centre for Disease Control and Prevention (CDC). Web-based Injury Statistics Query and Reporting System (WISQARS). National Centre for injury prevention and control, CDC. Available from <http://www.cdc.gov/injury/wisqars/index.html>
7. Wasserman D, Cheng Q, Jiang GX. Global suicide rates among young people age 15-19. *World Psychiatry* 2005; 4:114-120.
8. Page RM, Saumweber J, Hall PC, Crookston BT, West JH. Multi-country, cross-national comparison of youth suicide ideation: Findings from Global School-based Health Surveys. *Sch Psychol Int*. 2013; 34(5):540-55.
9. Eaton DK, Kann L, Kinchen S, Shanklin S, Ross J, Hawkins J, Harris WA, Lowry R, McManus T, Chyen D, Lim C, Brener ND, Wechsler H. Youth risk behaviour Surveillance-United States, 2007. *MMWR Surveillance Summaries* 2008; 57:1-131.
10. CDCP 2008. Suicide facts at a glance. <http://www.cdc.gov/violenceprevention/pdf/suicide-datasheet-pdf>.
11. Oladele AO, Oladele IT. Depression and suicidal ideation among college students with and without learning disabilities in Nigeria. *European Journal of Social & Behavioural Sciences* 2016; 16(2):2084-2100.
12. Fine G, Alison HC, Vanderwesthuizen D, Kruger C. Predicting frequency of suicidal attempts of adolescent outpatient at Weskoppies Hospital using clinical and demographic characteristics. *South African Journal of Psychiatry*, 2012; 18(1):22-26
13. Norhayati I, Suen MWN. (2014). Psychological factors as predictors of suicidal ideation among adolescents in Malaysia. *PLOS One* 2014; 9(10):e110670
14. Palmier JB. Prevalence and correlates of suicidal ideation among students in sub-Saharan Africa. Masters Thesis in Public Health, Georgia State University, 2011.
15. Schlebusch L, Burrows S, Wada N. Suicide prevention and religious traditions on the African continent. In: Wasserman D, Wasserman C (eds). *Suicidality and suicide prevention. A global perspective*. Oxford, England. Oxford University Press 2009.
16. Krug EG, Mercy JA, Dahlberg LL, Zwi AB. The world report on violence and health. *Lancet* 2012; 360:1083-1088.
17. Peden M, Oyegbite K, Ozanne-Smith J, Hyder AA, Branche C, Rahman A, Rivara F, Bartormees K (eds). *World Report on child injury prevention*. Available at <http://whqlibdoc.who.int/publications/2008/9789241563574-eng.pdf> (accessed February 5, 2008)
18. World Health Organization. *WHO Mortality Database Documentation: 1 May 2013 Update*.
19. Muula AS, Kazembe LN, Rudatsikira E, Siziya S. Suicidal ideation and associated



- factors among in-school adolescents in Zambia. Tanzania Health Research Bulletin 2007; 9:202-206.
20. World Health Organization. *mhGAP Intervention Guide for Mental, Neurological and Substance Use Disorders in Non-specialized Health Settings*. WHO, 2010.
 21. <http://www.who.int/maternal-child-Adolescent/topics/Adolescence/dev/en/15-03-2017>, 6:15.
 22. <https://www.reference.com/family/developmental-stages-adolescence-ee9c2ada5593243e>.
 23. Swahn MH, Bossarte RM, Choquet M, Hassler C, Falissard B, Chau N. Early substance use initiation and suicidal ideation and attempts among students in France and the United States. *Int. J. Public Health* 2012; 57:95-105.
 24. Hibell B, Andersson B, Bjarnason T, Ahlström S, Balakireva O, Kokkevi A, Morgan M. The Espad Report 2003. Alcohol and Other Drug Use among Students in 35 European Countries; The Swedish Council for Information on Alcohol and Other Drugs (CAN): Stockholm, Sweden, 2004.
 25. Ellis H, MacDonald H, Lincoln A, Cabral H. Mental health of Somali adolescent refugees: the role of trauma, stress, and perceived discrimination. *Journal of Consulting and Clinical Psychology*, 2008; 76:184-193.
 26. Amone-P'Olak K, Nyeko Otim B, Opio G, Ovuga E, Meiser-Stedman R. War experiences and psychotic symptoms among former child soldiers in Northern Uganda: the mediating role of post-war hardships - the WAYS Study. *Soc Psychiatry Psychiatr Epidemiol* 2014; 49(11):1783-1792
 27. Gorst-Unsworth C, Goldenberg E. Psychological sequelae of torture and organized violence suffered by refugees from Iraq: trauma-related factors compared with social factors in exile. *British Journal of Psychiatry*, 1998; 172:90-94.
 28. Catani C, Jacob N, Schauer E, Kohila M, Neuner F. Family violence, war, and natural disasters: A study of the effect of extreme stress on children's mental health in Sri Lanka. *BMC Psychiatry* 2008; 8:33.
 29. Cyranowski JM, Frank E, Young E, Katherine MS. Adolescent Onset of the Gender Difference in Lifetime Rates of Major Depression: A Theoretical Model. *Arch Gen Psychiatry*. 2000; 57(1):21-27
 30. Omigbodun O, Dogra N, Esan O, Adedokun A. Prevalence and Correlates of Suicidal Behaviour among Adolescents in Southwest Nigeria. *International Journal of Social Psychiatry* 2008; 54(1): 34-46
 31. Dunlop SM, More E, Romer D. Where do youth learn about suicides on the Internet, and what influence does this have on suicidal ideation? *J Child Psychol Psychiatry* 2011; 52(10):1073-1080.
 32. Beck AT, Steer RA, Beck JS, Newman CF. Hopelessness, depression, suicidal ideation, and clinical diagnosis of depression. *Suicide Life Threat Behav*. 1993; 23:139
 33. William JM, Crane C, Barhofer T, Van der Does AJ, Segal ZV. Recurrence of Suicidal Ideation Across Depressive Episodes. *Journal of Affective Disorder* 2006; 91 (2-3):189-94



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