

# Bullying Behavior and its Association with Mental Health Symptoms among Senior Secondary School Students in Calabar, Nigeria

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## Abstract

**Background:** The nature of our psychosocial environment and one's response to stressful daily events are key determinants of current and future mental health status. The school environment is one of such settings which expose young people to potentially undue stress, especially through bully-prone interpersonal interaction with peers and older individuals. Although bullying is thought to be prevalent in secondary schools, only a few studies have investigated the association between bullying and the mental health status of secondary school students in developing countries. The present study seeks to obtain data that may be helpful in addressing this research gap. **Methodology:** This was a cross-sectional analytic study. A stratified sampling technique was used to select six secondary schools within Calabar metropolis. Proportional allocation using a simple random sampling method was employed to recruit the required number of senior secondary students from the selected schools. Multidimensional Peer Victimization Scale and Child and Youth Mental Health General Screening Questionnaires were used to assess for presence/degree of bullying and mental health problems, respectively. Mann–Whitney U-test and Spearman's correlation analysis were used as inferential statistics, and *P*-value was considered significant if it was  $< 0.05$ . **Results:** Three hundred and four (304) respondents were surveyed, but complete data were obtained from 292. Their ages ranged from 13 to 20 years, with a mean age of  $16.5 \pm 2.1$  years. The male-to-female ratio was 1:0.7. Within the past 12 months, 54.8% of the respondents had bullied someone, while 62.3% had witnessed someone being bullied. Attack on the property was the most common form of bullying (61%), followed by social manipulation (52.7%), verbal (52.1%), and physical (47.9%) forms of victimization. Moderate-to-severe forms of social manipulation, physical victimization, verbal victimization, and attack on property forms of bullying were found in 26.0%, 26.7%, 28.8%, and 32.2% of respondents, respectively. The most frequently elevated component of mental health score in the respondents was conduct symptoms (50.7%), followed by mood symptoms (34.2%) and symptoms of generalized anxiety (19.2%). Respondents with abnormally elevated scores for hyperactivity/distractibility, conduct, generalized anxiety, and mood symptoms had significantly higher mean scores for each of the components of bullying assessed ( $P < 0.001$ ). Elevated scores on oppositional defiant symptoms did not significantly influence the mean scores of each component of bullying, except for verbal victimization ( $P = 0.04$ ). A significant positive correlation was observed between each component of bullying and each domain of mental health assessed ( $P < 0.001$ ). A positive correlation was also observed between the total bullying score and each domain of mental health as well as the total mental health scores ( $P < 0.001$ ). Of all the domains of mental health assessed, symptoms of hyperactivity/distractibility showed the strongest positive correlation with a total bully score ( $r = 0.69$ ,  $P < 0.001$ ). **Conclusion:** The results from this study suggest that bullying is prevalent in our secondary schools, with a potential adverse effects on the mental health of affected individuals in the near or remote future. These findings may be useful for improvement in existing policies for school health programs in developing countries.

**Keywords:** Bullying, Nigeria, psychological health, secondary school, senior secondary students

## INTRODUCTION

Mental illnesses make a significant contribution to the current global burden of disease.<sup>[1]</sup> Developing countries with high youth population and unemployment may be worse hit by having a high burden of risk factors for mental illnesses,

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including psychosocial stress, poverty, psychoactive substance use, and violence.<sup>[1,2]</sup> One of such key psychosocial factors with potential adverse effects on psychological health is the way peers relate with each other in their quest for the display of power expressed in the act of physical and psychological bullying.<sup>[3]</sup> Bullying is a complex phenomenon of intentional, aggressive, and repetitive violence that often results from an imbalance in power among the social group (s), which makes the “weaker” or “different” apparently defenseless individual (s) the eventual victim (s).<sup>[4]</sup> Bullying is a global problem, common in schools, and characterized by psychological, physical (including sexual bullying/harassment), and more recently, cyberbullying with short- and long-term adverse physical and psychological consequences.<sup>[1,3]</sup> Studies have documented that bullying is associated with young age, economic hardship, and gender.<sup>[5,6]</sup> Bullying is a serious problem as victims of bullying are likely to exhibit aggressive behavior and may retaliate with similar bullying tactics either against the original bullies or against weaker targets. This may lead to a vicious cycle whereby perpetrators of bullying create other perpetrators out of their victims. In addition, victims of bullying have been observed to have low self-esteem and adverse physical and psychological consequences such as anxiety, depression, and suicide.<sup>[1,3,7]</sup>

Reports from previous studies suggest that bullying is prevalent among school-age children in diverse global settings.<sup>[8,9]</sup> Studies conducted in Europe and America reported varying prevalence rates ranging between 15% in Sweden, 32% in the USA, 63% in Columbia, and 65% in Lithuania.<sup>[8]</sup> Results from studies conducted in Africa also showed variation in prevalence, as rates ranging from 18% to 82% have been reported.<sup>[9-13]</sup> Rates of 54% and 82% were reported in South Africa and Kenya, respectively.<sup>[9]</sup> In a cross-sectional national study of school-attending adolescents in Zambia, Siziya *et al.* found a 62.8% prevalence rate for bullying.<sup>[12]</sup> They also observed that worrying thoughts and alcohol consumption were significantly associated with victimization from bullying. This observation indicates that there may be a link between bullying and mental health status.<sup>[12]</sup> A study conducted in Benin City, Nigeria, among junior secondary school students revealed a 78% prevalence rate for bullying.<sup>[13]</sup> The study (Benin City) also highlighted that the most common type of bullying as reported by half (50%) of the respondents was “kicking and hitting” which was followed by “threats to beat you” (25%). The same study also observed that bullying occurs more often in the playground (40%), followed by classroom (25%) and was more prevalent among boys compared to girl students. A limitation of the study (Benin City) is that the sample did not consider students in the senior arm. In addition, it did not look into the mental health problems associated with bullying behaviors.

Studies conducted mainly in western countries have revealed the association between bullying and mental health problems such as depression, anxiety, suicidal behavior, and antisocial behavior among others.<sup>[5,14-16]</sup> Analysis of data from 7771 participants in a longitudinal cohort study in Britain

found higher odds of depression (odds ratio [OR] = 1.95), anxiety (OR = 1.65), and suicidal ideation (OR = 2.2) among children who were bullied compared with the nonbullied.<sup>[17]</sup> A longitudinal study among 1,168 adolescents in Quebec, Canada, found a greater risk of suicidal ideation and suicide attempt in subjects with a longer history of bullying.<sup>[18]</sup>

Analysis of data from a national survey of 63,977 schoolchildren in the USA shows that 15.2% of subjects were identified by their caregivers as a bully.<sup>[19]</sup> The odds of being a bully were three times higher among those who had mental health problems, including anxiety, depression, and attention deficit hyperactivity disorder (ADHD). In other words, perpetrators of bullying may also have significant mental health problems with much need for psychological intervention.<sup>[19]</sup> A multicenter longitudinal study among 4297 children surveyed at three different times in three cities in the USA found an association between bullying and poor mental health.<sup>[20]</sup> Chronicity of victimization may also be the key as suggested by a cross-sectional study report of significantly higher odds of being chronically victimized among school children with mental and physical health problems in Illinois, USA.<sup>[21]</sup>

The negative impact of bullying on mental health makes it an important area of research among school children, especially in developing nations where there is a high burden of risk factors for mental illnesses. Sadly, majority of the studies on bullying in developing countries have focused more on prevalence and pattern with sparse attention paid to the associated mental health problems. Consequently, much less is known about the mental health problems that are associated with bullying in developing countries such as Nigeria. This may limit the provision of evidence-based interventions for the prevention of mental illnesses among the currently teeming but psychologically vulnerable youth population. The present study was therefore aimed at investigating the prevalence of bullying and its association with mental health symptoms among senior secondary students in Calabar, Nigeria.

## METHODOLOGY

### Study design and location

This was a cross-sectional analytic study of senior secondary students in Calabar, the capital of Cross River state in Nigeria. Calabar comprises two local government areas (LGAs): Calabar Municipal and Calabar South LGAs. Calabar has 73 registered/government-approved secondary schools, which include both public and privately owned schools. The ratio of public-to-private schools in Calabar is approximately 1:2.5 (i.e., 21 public and 52 private).

### Sample size calculation

A sample size of 264 was estimated using Leslie Kish formula ( $n = Z^2 pq/d^2$ ) where  $n$  = the desired minimum sample size:

$Z$  = standard normal deviate for desired significance level = 1.96 (for 95% confidence)

$P$  = 78% = proportion of bullied subjects in previous study<sup>[13]</sup>

$$q = 1 - P = 1 - 0.78 = 0.22$$

$$d = \text{margin of error} = 0.05$$

$$\text{Therefore, } n = (1.96)^2 \times 0.78 \times 0.22 / (0.05)^2 = 263.68.$$

The calculated sample size was adjusted by 15% to take care of the nonresponse/inappropriately filled questionnaires. Thus, a total of 304 participants were recruited for the study. The inclusion criterion was being a student in the senior secondary school arm of the selected schools. Students who did not provide assent/consent (as the case may be) to participate in the study, and those in unregistered secondary schools, were excluded from the study.

### Sampling method

As illustrated in Figure 1, the following steps were used to select students that participated in the study. Step 1: stratification of all the secondary schools in the metropolis into two based on their location (i.e., Calabar South or Calabar Municipal LGA). Step 2: according to the type of school (i.e., whether public or privately owned), the secondary schools were further stratified into four groups as follows; Group A (28 private secondary schools in Calabar municipal LGA), Group B (24 private secondary schools in Calabar South LGA), Group C (14 public secondary schools in Calabar Municipal LGA), and Group D (7 public secondary schools in Calabar South LGA). Step 3: selecting one public and two private secondary schools from each LGA using yes/no balloting. This yielded six schools with a total population of 1156 senior students.

Step 4: proportionate allocation of the sample across each of the six selected schools using the formula:  $(n/m) \times \text{sample size}$ ; where  $n$  = total number of SS students in each selected school, and  $m$  = total number of SS students in the six selected schools (i.e., 1156). The value (s) obtained was multiplied by 304 (sample size) to get the proportion of SS students each selected school was to contribute to the final sample. Step 5: proportionate allocation of the samples to each of the three classes in the senior secondary section of the selected schools. Step 6: The selection of the required number of students from each class in the senior secondary section of each selected school using yes/no balloting.

### Study instruments

Sociodemographic Questionnaire, Multidimensional Peer Victimization Scale (MPVS), and Child and Youth Mental Health Questionnaire were the instruments used in this study.

The Sociodemographic Questionnaire was used to elicit variables such as age, gender, marital status of parents, religion, and tribe.

The MPVS was used to assess peer victimization among the respondents. It is a 16-item self-report questionnaire designed by Mynard and Joseph in the year 2000. It contains four subscales corresponding to physical victimization (items 1, 5, 9, and 13), social manipulation (items 2, 6, 10, and 14), verbal victimization (items 3, 7, 11, and 15), and attack on property (items 4, 8, 12, and 16). Each item on MPVS is

scored on a 3-point Likert format of 0 (not at all), 1 (once), and 2 (more than once). Respondents are expected to indicate on the Likert scale how often they have experienced each of the victimization experiences on the MPVS during the school year. The more a child is subjected to victimization, the higher his/her total score on the scale. Balogun *et al.* validated the MPVS in their study of peer victimization among Nigerian children. The instrument was found to have good psychometric properties with a reported Cronbach's alpha of 0.78 for internal consistency and split-half reliability of 0.76. In addition, a correlation of .54 was obtained for a concurrent validity test of the instrument with Aggression Scale.<sup>[22]</sup>

The Child and Youth Mental Health Questionnaire was used to identify common mental health problems among respondents. The instrument consists of six sections, each of which has six questions. Each item is scored using a 3-point Likert system of 0–2, representing never, sometimes, and often respectively. This provides a composite score from 0 to 12 for each section of the instrument. Section 1 screens for symptoms of ADHD, with a score >7 considered elevated and thus indicating a higher level of distractibility and hyperactivity. The questions in section 2 screen for oppositional behavior in relationships. A score >7 is also considered elevated and indicative of higher levels of oppositional behaviors. Section 3 assesses a child/youth for conduct problems and any score other than 0 in this section is considered elevated. Sections 4 and 5 assess for symptoms of separation anxiety and generalized anxiety disorders, respectively. For each of these sections (4 and 5), a score >6 is considered elevated. The questions in section 6 assess for symptoms of mood disorders in the child/youth, and a score >5 is considered elevated. This instrument has not been utilized (and) or validated in the African setting. However, during a pilot study to ascertain the feasibility of this present study, the test–retest reliability of this instrument was determined. In the pilot study, the instrument was administered on 31 senior students of a co-educational secondary school located within Akpabuyo LGA in the outskirts of Calabar. These 31 students were again seen after an interval of 1 week and the instrument was again completed by them. At the end of the exercise, a reliability coefficient of 0.826 was obtained.

### Procedure

Permission was obtained from the school authority/parent–teacher association (PTA) of each of the selected schools before proceeding with data collection. Using the school timetable, each of the selected schools was visited just before the students embarked on break/recreation. The aim of the study was explained to the students in their classroom and their assent/consent to participate was sought. Eligible students who were selected had the questionnaires administered to them in their classroom with the help of the class teacher during the break/recreation period.

### Ethical considerations

This study was conducted in accordance with the principles of the Declaration of Helsinki. Ethical clearance (with protocol

number CRSMOH/RP/REC/2018/138) was obtained from the Health Research Ethics Committee of the Cross River State Ministry of Health. Permission was obtained from the parents of the students during a PTA meeting of the participating schools. Consent was also obtained from students aged 18 years and above while those below 18 years of age assented before proceeding with the study. The parents/guardians of students found to have mental health problems were informed and encouraged to seek further assessments/interventions in a mental health facility.

### Data analysis

Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS, Inc., Chicago, IL, USA), version 21.0. All analyses were performed with  $P < 0.05$  as the level of statistical significance.

## RESULTS

A total of 304 students were recruited: however, complete data were received from 292 (96%) students of whom the mean age was  $16.5 \pm 2.1$  years, ranging from 13 to 20 years. The most common age group was 15–16 years (52.1%), and the male-to-female ratio was 1:0.7. The parents of most of

the respondents were married (83.6%) and of the Catholic sect (63.0%). These are shown in Table 1.

Perpetrators of bullying were commonly older boys (39.7%) and older girls (21.2%) [Table 2]. In the 12 months preceding the period of the study, a little above half (54.8%) had bullied someone, while 62.3% had witnessed bullying. Approximately two-thirds of respondents thought teachers' reaction to bullying was very well (45.5%) or okay (21.9%).

Table 3 shows the frequency distribution of responses to the MPVS. The common physical forms of victimization which occurred at least once within the preceding 12 months were being beaten up (53.4%), being hurt physically in some way (50.0%), and being kicked (49.3%). The common verbal forms of victimization within the same time frame were being called names (77.4%), being made fun of for some reason (56.2%), and being made fun of due to appearance (52.7%). Common social forms of victimization during the 12-month period were making others not to talk to someone (54.8%), trying to get someone into trouble with friends (52.1%), and trying to make friends turn against someone (50.7%). For the attack on property, the common forms occurring at least once within the 12-month were "taking something without owner's permission" (79.5%), "tried to break someone's thing" (58.9%), and stealing (54.8%).

Table 4 shows the frequency distribution of the various forms of bullying. Attack on property (61.0%) was the most common form of bullying, followed by social (52.7%), verbal (52.1%), and physical (47.9%) forms of victimization. Moderate-to-severe forms of physical, verbal, social, and attack-on-property forms of bullying were found in 26.7%,

**Table 1: Sociodemographic characteristics of respondents (n=292)**

Variable	Frequency, n (%)
Age groups (years)	
13-14	50 (17.1)
15-16	152 (52.1)
17-18	74 (25.3)
19-20	16 (5.5)
Total	292 (100)
Gender	
Male	172 (58.9)
Female	120 (41.1)
Total	292 (100)
Parent's marital status	
Married	244 (83.6)
Divorced/separated	48 (16.4)
Total	292 (100)
Religion	
Catholic	184 (63.0)
Orthodox	28 (9.6)
Pentecostal	70 (24.0)
Islam	10 (3.4)
Total	292 (100)
Tribe	
Efik	78 (26.7)
Ejagham	51 (17.6)
Yakurr	42 (14.4)
Ibibio/Annang	58 (19.9)
Ibo	37 (12.7)
Others	26 (8.9)
Total	292 (100)

**Table 2: Characteristic features of bullying (n=292)**

Variable	Frequency, n (%)
Commonest source of bully	
Older boys	116 (39.7)
Older girls	62 (21.2)
Girls in the same grade	72 (24.7)
Boys in the same grade	18 (6.2)
Younger girls	18 (6.2)
Younger boys	6 (2.1)
Total	292 (100)
Bullied someone in the last 12 months	
Yes	160 (54.8)
No	132 (45.2)
Total	292 (100)
Saw someone being bullied in the last 12 months	
Yes	182 (62.3)
No	110 (37.7)
Total	292 (100)
Perception toward teacher's reaction to bullying	
Satisfactory	197 (67.4)
Unsatisfactory	39 (13.4)
Unsure	56 (19.2)
Total	292 (100)

**Table 3: Frequency distribution of Multidimensional Peer Victimization Scale responses (n=292)**

Variable	Not at all, n (%)	Once, n (%)	>Once, n (%)
Physical Victimization Scale (items 1, 5, 9, and 13)			
Punched me	180 (61.6)	80 (27.4)	32 (11.0)
Kicked me	148 (50.7)	88 (30.1)	56 (19.2)
Hurt me physically in some way	146 (50.0)	88 (30.1)	58 (19.9)
Beat me up	136 (46.6)	80 (27.4)	76 (26.0)
Verbal Victimization Scale (items 3, 7, 11, and 15)			
Called me names	66 (22.6)	132 (45.2)	94 (32.2)
Made fun of me because of my appearance	138 (47.3)	92 (31.5)	62 (21.2)
Made fun of me for some reason	128 (43.8)	84 (28.8)	80 (27.4)
Swore at me	156 (53.4)	82 (28.1)	54 (18.5)
Social victimization scale (items 2, 6, 10, and 14)			
Tried to get me into trouble with my friends	140 (47.9)	98 (33.6)	54 (18.5)
Tried to make my friends turn against me	144 (49.3)	92 (31.5)	56 (19.2)
Refused to talk to me	150 (51.4)	94 (32.2)	48 (16.4)
Made other people not talk to me	132 (45.2)	100 (34.2)	60 (20.6)
Attack on property scale (items 4, 8, 12, and 16)			
Took something of mine without permission	60 (20.5)	146 (50.0)	86 (29.5)
Tried to break something of mine	120 (41.1)	108 (37.0)	64 (21.9)
Stole something from me	132 (45.2)	80 (27.4)	80 (27.4)
Deliberately damaged some property of mine	136 (46.6)	70 (24.0)	86 (29.5)

**Table 4: Frequency distribution of multidimensional peer victimization categories (n=292)**

Variable	Frequency, n (%)
Physical victimization	
None/insignificant	152 (52.1)
Mild	62 (21.1)
Moderate	60 (20.5)
Severe	18 (6.2)
Total	292 (100)
Median score (IQR)	2.0 (0-5)
Verbal victimization	
None/insignificant	140 (47.9)
Mild	68 (23.3)
Moderate	44 (15.1)
Severe	40 (13.7)
Total	292 (100)
Median score (IQR)	3.0 (1-5)
Social manipulation	
None/insignificant	138 (47.3)
Mild	78 (26.7)
Moderate	52 (17.8)
Severe	24 (8.2)
Total	292 (100)
Median score (IQR)	3.0 (0-5)
Attack on property	
None/insignificant	114 (39.0)
Mild	84 (28.8)
Moderate	56 (19.2)
Severe	38 (13.0)
Total	292 (100)
Median score (IQR)	4.0 (1-5)

IQR: Interquartile range

28.8%, 26.0%, and 32.2% of respondents, respectively. The median score was 11.0 with an interquartile range of 5–18.

Table 5 shows the frequency distribution of mental health symptoms among respondents. The most frequently elevated component of mental health score was conduct symptoms (50.7%), followed by mood symptoms (34.2%) and symptoms of generalized anxiety (19.2%). The median mental health score was 22 with an interquartile range of 9–30.

Table 6 shows the relationship between bullying scores and mental health status for each of the components assessed. Respondents with abnormally elevated scores for hyperactivity/distractibility, conduct symptoms, mood symptoms, and generalized anxiety symptoms had significantly higher mean scores for each of the components of bullying assessed ( $P < 0.001$ ). A higher score on oppositional defiant symptoms did not significantly influence the mean scores of each form of bullying assessed, except for verbal victimization. In addition, elevated score in symptoms of separation anxiety was significantly associated with a higher score in other forms of bullying except for physical victimization ( $P < 0.05$ ).

Table 7 shows the correlation between bullying and mental health scores. As shown in this table, there was a significant positive correlation between each component of bullying and each aspect of mental health assessed ( $P < 0.001$ ). There was also a significant positive correlation between total bullying score (MPVS) and scores on each domain of mental health, as well as the total mental health scores ( $P < 0.001$ ). The least degree of significant positive correlation was found between the attack on property (Australian Public Service) and conduct problems ( $r = 0.20$ ,  $P < 0.001$ ), while the highest degree of

**Table 5: Frequency distribution of mental health status (n = 292)**

Variable	Frequency, n (%)
Score on hyperactivity and distractibility	
Normal	248 (84.9)
Elevated	44 (15.1)
Total	292 (100)
Median (IQR)	4.0 (0-7)
Score on oppositional symptoms	
Normal	276 (94.5)
Elevated	16 (5.5)
Total	292 (100)
Median (IQR)	3.0 (1-5)
Score on conduct symptoms	
Normal	144 (49.3)
Elevated	148 (50.7)
Total	292 (100)
Median (IQR)	1.0 (0-3)
Score on symptoms of separation anxiety	
Normal	260 (89.0)
Elevated	32 (11.0)
Total	292 (100)
Median (IQR)	3.0 (0-5)
Score on symptoms of generalized anxiety	
Normal	236 (80.8)
Elevated	56 (19.2)
Total	292 (100)
Median (IQR)	4.0 (1-6)
Score on mood symptoms	
Normal	192 (65.8)
Elevated	100 (34.2)
Total	292 (100)
Median (IQR)	4.0 (2-6)

IQR: Interquartile range

positive correlation was between total bully score (MPVS) and hyperactivity/distractibility ( $r = 0.69$ ,  $P < 0.001$ ).

## DISCUSSION

This study set out to assess the association between bullying and mental health symptoms among senior secondary school students. More than half of the respondents (58.9%) were male. Their age ranged from 13 to 20 years, with the majority being within the age range of 15–16 years. These observations represent the demographic structure of the selected schools. The study found that the most common source of bullying was from older boys. This finding is in line with the result of a study conducted by Ehindero in Ile-Ife, Osun State, Nigeria.<sup>[23]</sup> Further support to this finding is provided by another study conducted in Benin City, Nigeria, in which perpetrators of bullying were reported to be mostly older boys.<sup>[24]</sup> It is possible that older boys see themselves as physically stronger and could therefore perceive other students as weak and ideal targets for bullying.

There was a high prevalence of bullying, with a little above half of the respondents (54%) reporting bullying someone in

the past 1 year and seeing someone being bullied (62.3%). High rates of bullying have also been reported in previous studies conducted elsewhere in Nigeria and other developing nations such as South Africa<sup>[9]</sup> and Zambia.<sup>[12]</sup> Compared to reports from studies conducted in developed nations such as Sweden and the USA,<sup>[8]</sup> the relatively higher rate found in the present study may partly be explained by the relative lack of supervision of students often noticed in Nigerian secondary schools or absence/nonenforcement of regulations governing the students' adverse peer-to-peer interactions.

The present study also revealed variation in the frequency of occurrence of different forms of victimization, with physical victimization (47.9%) being the least and attack on property (61.0%) being the most frequent. Popoola also found the attack on property as the most frequent form of peer victimization among a sample of secondary school students in Osun State, Nigeria.<sup>[25]</sup> The high frequency of this form of victimization (attack on property) observed among students portends serious danger to the society since the behavior might perpetuate into adulthood if intervention measures are not instituted. This may in years to come, result in increased rates of vandalism, stealing, and other property-related crimes in the society. Another observation of the present study was that over a quarter of the respondents who experienced each form of victimization reported the degree of severity as either moderate or severe. This is also worrisome since degrees of severity of bullying may be the main determinant of the occurrence and severity of adverse physical/mental health problems.

With respect to mental health status, it was observed that a little above half of the respondents (50.7%) had elevated scores on the symptoms of conduct disorder. This was followed by elevated scores in mood symptoms, found in about a third (34.2%) of the respondents. Abnormally elevated scores in symptoms of generalized anxiety, distractibility/hyperactivity, separation anxiety and oppositional behavior were also observed in various proportions of the respondents (19.2%, 15.1%, 11.0% and 5.5% respectively). It was further observed that mental health status significantly influenced the extent to which the respondents were victimized by peers. Specifically, respondents who reported greater psychopathologies (excluding those with oppositional symptoms) had significantly higher levels of various forms of victimization. In other words, the respondents with psychopathologies experienced a higher degree of bullying than those without. It is not clear why oppositional symptoms were not significantly associated with high mean scores of various victimization experiences except for verbal victimization. However, it could be that oppositional behavior reduces the risk of victimization, as bullying perpetrators might be afraid of aggressive retaliation. The direct relationships observed in this study between bullying and each domain of mental health as well as total mental health scores might be explained by the fact that bullying behaviors are traumatic to the victim, and traumatic events are thought to mediate psychopathologies. Moreover, repeated exposure to bullying might make a child stay away from school. Consequently, the child would have poor academic achievement and develop low self-esteem with attendant mental

**Table 6: Relationship between bullying category mean score and mental health status (n=292)**

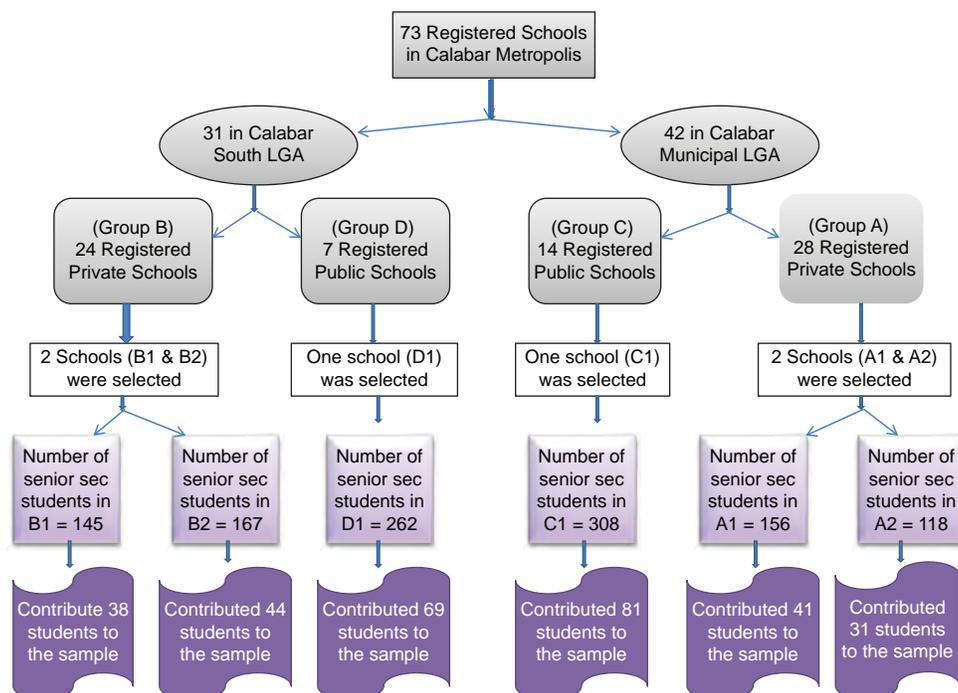
Variable	Mean±SD				
	PVS	VVS	SMS	APS	MDPVS
Distractibility/hyperactivity					
Normal	2.4 (2.3)	3.0 (2.2)	2.6 (2.4)	3.4 (2.2)	11.4 (8.0)
Elevated	4.1 (2.2)	5.2 (2.2)	4.1 (2.5)	4.7 (2.3)	18.1 (7.8)
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001
Oppositional symptoms					
Normal	2.6 (2.4)	3.3 (2.4)	2.8 (2.4)	2.5 (2.3)	11.2 (8.4)
Elevated	3.6 (1.9)	4.3 (2.0)	3.4 (2.2)	4.0 (1.5)	15.3 (6.7)
<i>P</i>	0.06	0.04	0.28	0.30	0.08
Conduct symptoms status					
Normal	1.9 (2.3)	2.7 (2.2)	2.0 (2.4)	2.8 (2.2)	9.4 (8.1)
Elevated	3.5 (2.2)	4.0 (2.3)	3.6 (2.2)	4.2 (2.1)	15.4 (7.4)
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001
Separation anxiety symptoms					
Normal	2.6 (2.4)	3.2 (2.3)	2.7 (2.4)	3.5 (2.3)	12.0 (8.4)
Elevated	3.3 (2.1)	4.1 (2.2)	3.7 (2.4)	4.3 (2.2)	15.4 (7.2)
<i>P</i>	0.08	0.03	0.02	0.04	0.02
Generalized anxiety symptoms					
Normal	2.3 (2.2)	3.0 (2.3)	2.4 (2.3)	3.2 (2.2)	10.9 (8.0)
Elevated	4.3 (2.2)	4.6 (2.3)	4.6 (2.0)	5.1 (1.9)	18.6 (6.8)
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001
Mood symptoms					
Normal	2.2 (2.3)	2.8 (2.3)	2.4 (2.4)	3.1 (2.2)	10.5 (7.9)
Elevated	3.7 (2.2)	4.4 (2.2)	3.6 (2.4)	4.4 (2.2)	16.1 (7.7)
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001

PVS: Physical victimization score, VVS: Verbal victimization score, SMS: Social manipulation score, APS: Attack property score, MDPVS: Multidimensional Peer Victimization scale

**Table 7: Correlation between bullying and mental health scores (n=292)**

Variable	PVS	VVS	SMS	APS	MDPVS
ADHD score					
Spearman correlation coefficient	0.65	0.65	0.62	0.55	0.69
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001
ODD score					
Spearman correlation coefficient	0.49	0.42	0.43	0.38	0.49
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001
Conduct disorder score					
Spearman correlation coefficient	0.30	0.22	0.27	0.20	0.28
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001
Separation anxiety score					
Spearman correlation coefficient	0.30	0.29	0.32	0.27	0.35
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001
GAD score					
Spearman correlation coefficient	0.57	0.50	0.60	0.53	0.62
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001
Mood disorder score					
Spearman correlation coefficient	0.51	0.50	0.50	0.48	0.56
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001
Mental health score					
Spearman correlation coefficient	0.55	0.51	0.51	0.45	0.57
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001

PVS: Physical victimization score, VVS: Verbal victimization score, SMS: Social manipulation score, APS: Attack property score, MDPVS: Multidimensional peer victimization scale, GAD: Generalized anxiety disorder, ODD: Oppositional defiant disorder, ADHD: Attention deficit hyperactivity disorder



**Figure 1:** Flow chart illustrating sampling method

health consequences. On the other hand, mental health problems might predispose a child to be a victim or perpetrator of bullying. A child with mental health difficulties may be less socially accepted among his peers, thereby becoming an easy target for peer victimization. Of all the mental health symptoms assessed in the present study, hyperactivity/distractibility showed the strongest direct relationship with bullying. These symptoms (hyperactivity and distractibility) often go with impulsivity, which might make it difficult for the affected child to wait for his/her turn in group games. The child often chooses to play alone, avoiding other children, thereby attracting a negative reputation which might increase his/her chances of being victimized. Data from the present study tend to corroborate the results of previous studies.<sup>[14,20,26,27]</sup> The data also underscore the need for enforcement of anti-bullying rules and the establishment of effective mental health intervention programs in secondary schools in the study setting.

The study was limited by the use of self-report measures, as respondents may have exaggerated or underreported their victimization experiences as well as mental health symptoms. In addition, the tool used to measure mental health status (child and youth mental health questionnaire) is a screening rather than a diagnostic instrument and as such can only detect the risk of mental health problem and not the condition *per se*. Moreover, the instrument is yet to be comprehensively validated in Nigeria. In spite of these limitations, the findings of this study contribute to existing literature and can help inform prevention and intervention efforts for bullying in the study setting.

## CONCLUSION

This study found that bullying is highly prevalent and associated

with mental health problems among students of senior secondary schools in Calabar. This underscores the need for the establishment of mental health desks and preventive measures against bullying in secondary schools in the study setting.

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## Conflicts of interest

There are no conflicts of interest.

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