

Article

Patterns and Correlates for Bullying among Young Adolescents in Ghana

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Abstract: Bullying is relatively common and is considered to be a public health problem among adolescents worldwide. The present study examined the risk factors associated with bullying behavior among adolescents in a lower-middle-income country setting. Data on 6235 adolescents aged 11–16 years, derived from the Republic of Ghana’s contribution to the Global School-based Health Survey, were analyzed using bivariate and multinomial logistic regression analysis. A high prevalence of bullying was found among Ghanaian adolescents. Alcohol-related health compromising behaviors (alcohol use, alcohol misuse and getting into trouble as a result of alcohol) increased the risk of being bullied. In addition, substance use, being physically attacked, being seriously injured, hunger and truancy were also found to increase the risk of being bullied. However, having understanding parents and having classmates who were kind and helpful reduced the likelihood of being bullied. These findings suggest that school-based intervention programs aimed at reducing rates of peer victimization should simultaneously target multiple risk behaviors. Teachers can also reduce

peer victimization by introducing programs that enhance adolescents' acceptance of each other in the classroom.

Keywords: adolescents; bullying; substance use; alcohol use; Africa

1. Introduction

Bullying, defined as a set of repeated behaviors that are “intentional and cause[s] physical and psychological harm to the recipient” [1], includes actions, such as name-calling or teasing, social exclusion and hitting [2–4]. Bullying is characterized by an imbalance of power that allows a more powerful person to victimize a less powerful individual [3,5]. Early adolescents have been found to be particularly vulnerable to the psychological effects of bullying [6,7]. Concurrently, bullying victimization peaks and intensifies during early adolescence [7–9]. This is particularly so, because early adolescence marks a period of immense pressure to attain social status or fit in with desirable peer groups [10,11]. For example, research demonstrates that toughness and aggressiveness are important status considerations for boys and physical attractiveness a major determinant of social status for girls [12]. Additionally, adolescence also represents a time of considerable change and possible insecurity, accompanied by social anxiety [13,14]. This may be the reason that so many mental health problems appear at this developmental period.

Victims of bullying, in general, experience poorer socio-emotional and physical wellbeing in school. There is an established association between bullying and a number of factors, including demographic factors, like gender and age. Male students have been found to report engaging in significantly more bullying than females [15–18], while school bullying has been found to decrease as children grow [19–21].

The school setting doubles as the place where bullying is perpetrated and as a potential avenue for change and prevention of bullying [18]. Group acceptance and friendship are shown to make distinct contributions to children's adjustment and wellbeing [22], while poor peer relations have been found to predict high levels of aggression [19]. Children who are liked by their peers are shown to be sociable, helpful and non-aggressive, whereas children who are disliked by their peers are reported to be unsociable, disruptive, aggressive or withdrawn [23–25]. Likewise, victimization has been found to predict school avoidance [22], and children who have been involved in bullying perpetration and those who were bullied were more likely to run away from home [26].

The family plays an important role in shaping bullying behavior. Research, for example, indicates that children who come from poorly functioning households were more likely to feel insecure and detached from their parents [27,28] and to report lower parental support [29]. Those who were exposed to conflict at home [30] were more likely to report involvement in bullying. A recent study involving middle school students in the Guangdong Province of China found that young adolescents who were dissatisfied with their parental care were more likely to engage in bullying or to be a victim of bullying [16]. The results further indicated that good communication with parents reduced the chance of victimization. Additionally, research shows that adolescents who lived with both parents and enjoyed sound communication with their parents were often less likely to engage in bullying [31,32].

In a large cross-national study of adolescents in nineteen low- and middle-income countries (LMIC), Fleming and colleagues [33] found that 31.6% of adolescents who had been bullied reported to have smoked tobacco at least once, consumed alcohol, and some 13.3% had used drugs. Among the other correlates of bullying victimization reported in the literature are socioeconomic status [34–37], sexual intercourse [33,38], substance use (*i.e.*, alcohol use, alcohol misuse, drug use) [5,39–41] and physical fighting [16,40,42,43].

Clearly, bullying appears to be common among adolescents worldwide. However, most research on the psychosocial effects of bullying has been carried out in high-income countries (HIC). Among adolescents in HICs, reported prevalence ranges from 14.6% to 56.3% for victimization and from 15.4% to 54.9% for bullying perpetration [12]. Relatively little research has been conducted on the phenomenon in LMIC. Available data on LMIC indicate that prevalence rates range from 20% to 40% in countries like China, Lebanon, Morocco and Ghana, to 41% to 61% in Botswana, Chile and Kenya [7,33]. In Ghana, study reports have indicated a prevalence of 40% among senior high school students [7] and 58.7% among junior high school students [8]. Owusu *et al.* [7] further report that Ghanaian adolescents who were victims of bullying were significantly more likely to experience depression, loneliness and to have contemplated suicide.

That notwithstanding, there is still a significant void in understanding the scope and nature of the psychological effects of bullying among early adolescents in Africa, in general, and Ghana in particular. The few existing studies have often focused on a few risk factors to the neglect of other contextual factors that have been identified among adolescents in HIC settings, such as alcohol use and misuse, substance use, injury, hunger, *etc.* Thus, to date, we do not have a full picture about early adolescent's bullying behavior and its related risk factors in the Sub-Saharan Africa (SSA).

2. Methods

2.1. Data Description and Inclusion Criteria

The data for this study were derived from the Ghanaian contribution to the 2007 Global School-based Health Survey (GSHS). The GSHS was developed by the World Health Organization (Geneva) in collaboration with the U.S. Centers for Disease Control (Atlanta, GA). It collects relevant information for the discernment of behavioral and health risks among adolescents of school age in 43 countries. In Ghana, a total of 6 235 secondary students aged 11–16 years (52.4% male) participated in the 2007 survey, which had a response rate of 86%. We excluded 154 participants that did not have complete information on their age and gender. Furthermore, we only considered participants who responded to the question on bullying in all analyses, resulting in a final sample of 4 763 (53.0% male). Detailed information on the data collection methods, the questionnaire and procedures are published elsewhere [9]. At the time of data collection, the study had been approved by the Ghana Education Service. Written permission was obtained from the participating schools and classroom teachers. Parental permission was obtained and student participation was voluntary and anonymous [39]. All data used in the present study were freely available and accessible via the U.S. Centers for Disease Control website.

2.1.1. Measures

For the dependent variable, we used the responses to the survey question: “During the past 30 days, on how many days were you bullied?” The responses were “0 days”, “1 or 2 days”, “3 to 5 days”, “6 to 9 days”, “10 to 19 days”, “20 to 29 days” or “all 30 days”. These answers were trichotomized, representing: being bullied during one or two days ($N = 1060$), three or more days ($N = 1601$) or not at all ($N = 2102$). For the independent variables, our choices were informed by the existing literature on bullying [44–47]. In addition to the demographic variables of age and sex, we selected several independent variables from the questionnaire to screen for statistically significant associations with the dependent variable. In Table 1, we show the independent variables that were chosen in addition to age and sex.

Table 1. Selected independent variables considered in a study of bullying among school-attending adolescents in Ghana (2007).

Variable	Derived from Question	Coded (All Dichotomized)
Hunger	“During the past 30 days, how often did you go hungry because there was not enough food in your home?”	“most of the time/always” vs. “never/rarely/sometimes”
Being physically attacked	“During the past 12 months, how many times you were physically attacked?”	“0 or 1 times” vs. “2 or more times”
Physical fighting	“During the past 12 months, how many times were you in a physical fight?”	“0 or 1 times” vs. “2 or more times”
Injury	“During the past 12 months, how many times were you seriously injured?”	“0 or 1 times” vs. “2 or more times”
Alcohol use	“During the past 30 days, on how many days did you have at least one drink containing alcohol?”	“0 days” vs. “1 or more days”
Alcohol misuse	“During your life, how many times did you drink so much alcohol that you were really drunk?”	“0 times to 2 times” vs. “3 or more times”
Got into trouble as a result of alcohol	“During your life, how many times have you ever had a hangover, felt sick, got into trouble with your family or friends, missed school or got into fights, as a result of drinking alcohol?”	“0 times” vs. “1 or more times”
Substance use	“During your life, how many times have you used drugs, such as wee, cocaine, LSD or heroine (wee is a term used for marijuana)?”	“0 days” vs. “1 or more days”
Truancy	“During the past 30 days, on how many days did you miss classes or school without permission?”	“0–2 days” vs. “3 or more days”

Table 1. Cont.

Variable	Derived from Question	Coded (All Dichotomized)
School environment	“During the past 30 days, how often were most of the students in your school kind and helpful?”	“always” vs. “never/rarely/sometimes/most of the time”
Understanding parents	“During the past 30 days, how often did your parents or guardians understand your problems and worries?”	“always” vs. “never/rarely/sometimes/most of the time”

2.2. Statistical Analyses

Preliminary analyses involved testing for possible correlations among the violence-related variables, namely being physically attacked and being involved in physical fights. Spearman correlation tests using the non-dichotomized violence variables showed, however, that they were only moderately correlated with bullying (physically attacked = 0.44; physical fighting = 0.41). The subsequent analyses were carried out stepwise in three phases. We first examined the distribution of the selected independent variables within the trichotomized dependent variable categories. Then, we screened for statistically significant associations using Pearson’s chi-squared for categorical variables and Analysis of Variance (ANOVA) for the continuous variable age. The results for the bivariate analyses were reported as proportions along with their chi-squared values measuring group differences. The result of the F-test was used for ANOVA.

We then used multinomial logistic regression (MLR) to model the relationship between the dependent and independent variables. MLR is an extension of binary logistic regression, which allows for the prediction of the probabilities of more than two outcomes of a categorically distributed dependent variable. Given that our dependent variable had three categories, MLR was selected over binary regression [48]. Two MLR models were created. In the first, all variables that were significant at the bivariate level were then entered separately into an MLR model, which adjusted for age and sex. In the second model, all variables were entered simultaneously into one model, which adjusted for each of the included covariates. The results are reported as relative risk ratios (RRR). Because the dataset was large, we used 99% confidence intervals (CI). All analyses were performed using Stata 12 (StataCorp, 2011) for Unix [49].

3. Results

Within the recall period, 56% (N = 2661) were bullied at least once. Of these, 15% reported being kicked, pushed or shoved; 11% were made fun of because of their race or color and 10% because of their religion; 4% were made fun of with a comment or joke of a sexual nature; 3% had been left out of activities; 6% had been made fun of about their bodily appearance; and 7% were made fun of in some other way.

In the bivariate analyses (Table 2), we found no significant mean age differences across the three categories of bullying or significant differences by sex. We did however find that the reporting of hunger, injury, truancy and all categories of alcohol and substance use increased the chances of being bullied 1–2 days and three or more days. An inverse relationship was found for those who reported being

in a favorable school environment (with respect to peers) and having understanding parents. Violence, such as being involved in a physical fight and being physically attacked, was also observed at higher rates among those who reported bullying victimization.

Table 2. Distribution of selected factors according to categories of bullying among school-attending adolescents in Ghana.

Variable	Bullied 0 Days (N = 2102)	Bullied 1–2 Days (N = 1060)	Bullied 3 or More Days (N = 1601)	F/ χ^2	p-value
Age (SD)	14.5 (1.4)	14.4 (1.4)	14.5 (1.3)	2.9	0.517
Sex (male)	53.3	50.4	52.8	2.6	0.280
Hunger	15.1	21.2	31.6	145.1	<0.001
Physically attacked	19.7	43.5	65.6	800.0	<0.001
Physical fight	12.0	35.9	53.2	732.4	<0.001
Injury	38.5	56.7	78.5	587.9	<0.001
Alcohol use	16.7	42.4	64.5	886.6	<0.001
Alcohol misuse	11.4	33.0	52.2	725.6	<0.001
Got into trouble as a result of alcohol	15.1	35.9	54.8	652.1	<0.001
Substance use	6.47	24.4	46.7	24.0	<0.001
Truancy	10.4	20.0	37.2	388.6	<0.001
Favorable school environment	32.8	24.2	21.2	67.5	<0.001
Understanding parents	32.4	21.9	21.0	78.6	<0.001

Results are based on 4 763 participants that reported information on bullying victimization; SD = standard deviation; F = result of the F-test; χ^2 = chi-squared.

The age and sex adjusted MLR results in Table 3 show that all selected variables were significant at the $p < 0.01$ level. Only two variables (favorable school environment and having understanding parents) were associated with decreases in bullying. Having reported positively concerning peers in school (RRR = 0.73 and RRR = 0.60 for 1–2 days and three or more days of bullying, respectively) and having understanding parents (RRR = 0.60 and RRR = 0.56 for one or two days and three or more days, respectively) were inversely associated with bullying across both categories compared with non-bullied participants. Substance use, in particular, increased the risk of being bullied 1–2 days (RRR = 4.40; CI = 2.88–6.72) or being bullied three or more days (RRR = 12.33; CI = 8.38–18.15).

In the fully-adjusted MLR model (Table 4), 1–2 days of bullying was significantly associated with an increased likelihood of being physically attacked (RRR = 1.81; CI = 1.40–2.35), as well as having been involved in a physical fight (RRR = 2.01; CI = 1.49–2.73). Alcohol, whether with respect to its use (RRR = 1.50; CI = 1.11–2.03) or having problems associated with its use (RRR = 1.45; CI = 1.06–2.00), was also associated with a higher likelihood of reported bullying. Similarly, substance use behavior was found at higher rates among bullied participants (RRR = 1.66; CI = 1.10–2.52). Inversely, we found that those who reported having understanding parents were less likely to report being bullied (RRR = 0.76; CI = 0.60–0.97). After adjusting for all covariates, reporting a favorable school environment did not reach statistical significance ($p = 0.439$) as in the age- and sex-adjusted model.

Among participants who reported being bullied during three or more days, violence and trauma, being physically attacked (RRR = 2.93; CI = 2.23–3.85), being involved in physical fights (RRR = 2.20; CI = 1.59–3.08) or being injured (RRR = 2.44; CI = 1.83–3.25) were more common. Alcohol use (RRR = 1.81; CI = 1.27–2.57) was higher, while misuse (RRR = 1.51; CI = 0.96–2.40) was not significant after adjustment for all covariates. Getting into trouble in relation to alcohol was more common (RRR = 1.74; CI = 1.33–2.26), as was reporting of hunger (RRR = 1.46; CI = 1.13–1.90) substance use (RRR = 2.54; CI = 1.69–3.81) and truancy (RRR = 1.92; CI = 1.25–2.94).

Table 3. Age- and sex-adjusted analyses of selected variables according to bullying category among adolescents in Ghana.

Variable	Bullied 1-2 Days RRR CI	<i>p</i> -value	Bullied 3 or More Days RRR CI	<i>p</i> -value
Hunger	1.52 (1.19–1.92)	<0.001	2.65 (2.14–3.28)	<0.001
Physically attacked	2.96 (2.29–3.82)	<0.001	7.15 (5.56–9.19)	<0.001
Physical fight	3.50 (2.55–4.77)	<0.001	6.71 (5.08–8.86)	<0.001
Injury	1.91 (1.41–2.59)	<0.001	5.04 (3.90–6.52)	<0.001
Alcohol use	3.29 (2.36–4.59)	<0.001	8.00 (5.83–10.97)	<0.001
Alcohol misuse	3.37 (2.41–4.70)	<0.001	7.68 (5.64–10.47)	<0.001
Got into trouble as a result of alcohol	2.92 (2.28–3.76)	<0.001	6.50 (5.03–8.40)	<0.001
Substance use	4.40 (2.88–6.72)	<0.001	12.33 (8.38–18.15)	<0.001
Truancy	1.97 (1.34–2.88)	<0.001	4.96 (3.47–7.10)	<0.001
Favorable school environment	0.73 (0.56–0.94)	0.002	0.60 (0.46–0.78)	<0.001
Understanding parents	0.60 (0.48–0.77)	<0.001	0.56 (0.42–0.76)	<0.001

RRR = relative risk ratio; CI = confidence interval; all results are compared against non-bullied participants; all results are adjusted for age, sex and clustering.

Table 4. Multinomial logistic regression analyses of selected variables according to bullying category among adolescents in Ghana.

Variable	Bullied 1-2 Days RRR (99%CI)	<i>p</i> -value	Bullied 3 or More Days RRR (99%CI)	<i>p</i> -value
Age	0.97 (0.91–1.03)	0.231	1.04 (0.94–1.15)	0.327
Sex (male)	0.97 (0.76–1.25)	0.790	1.14 (0.86–1.49)	0.230
Hunger	1.15 (0.89–1.47)	0.150	1.46 (1.13–1.90)	<0.001
Physically attacked	1.81 (1.40–2.35)	<0.001	2.93 (2.23–3.85)	<0.001
Physical fight	2.01 (1.49–2.73)	<0.001	2.20 (1.59–3.08)	<0.001
Injury	1.30 (0.95–1.77)	0.032	2.44 (1.83–3.25)	<0.001
Alcohol use	1.50 (1.11–2.03)	0.001	1.81 (1.27–2.57)	<0.001
Alcohol misuse	1.37 (0.98–1.91)	0.016	1.51 (0.96–2.40)	0.020
Got into trouble as a result of alcohol	1.45 (1.06–2.00)	0.003	1.74 (1.33–2.26)	<0.001
Substance use	1.66 (1.10–2.52)	0.002	2.54 (1.69–3.81)	<0.001

Table 4. Cont.

Variable	Bullied 1-2 Days RRR (99%CI)	<i>p</i> -value	Bullied 3 or More Days RRR (99%CI)	<i>p</i> -value
Truancy	1.15 (0.75–1.74)	0.397	1.92 (1.25–2.94)	<0.001
Favorable school environment	0.92 (0.69–1.21)	0.439	0.84 (0.58–1.20)	0.201
Understanding parents	0.76 (0.60–0.97)	0.004	0.90 (0.65–1.24)	0.402

RRR = relative risk ratio; CI = confidence interval; all results are compared against non-bullied participants; results are adjusted for all variables in the table.

4. Discussion

The prevalence of bullying was relatively higher among Ghanaian adolescents compared to those reported among their counterparts in Seychelles (38.8%) [47], Uganda (14.9%), Kenya (31.6%), Morocco (12.0%), Botswana (21.7%) [33], Greenland [50] and elsewhere [19,39]. However, the prevalence was lower than those found in a few other studies, including among Chilean adolescents 54% [33] and in some European countries [51,52]. There is evidence that bullying is correlated with depression [53]. The high prevalence of bullying found in this study therefore calls for the need for effective bullying prevention interventions in order to protect youth from depression and prevent other bullying-related health problems.

Data from Kenya, Namibia, Swaziland, Tanzania, Zimbabwe and five other African countries [54] have shown that among youth, the risk of bullying increased if they indulged in health compromising behaviors. Similarly, Fleming and Jacobsen [33] found that tobacco use, alcohol use, drug use and engaging in sexual intercourse were associated with the probability of being bullied among adolescents in several LMICs. In this study, alcohol use and misuse and other health damaging behaviors, including drug use, were found to increase the chances of being bullied, thus confirming these previous studies. A number of hypotheses can be reflected upon regarding the relationship between bullying and health compromising behaviors among adolescents. The link between bullying and problematic alcohol use has been documented among various adolescent populations [55,56]. While most of these studies have been cross-sectional, the most commonly cited hypothesis regarding this association is that it is likely a coping mechanism among those who experience the stress, shame and humiliation of being bullied [57]. Conversely, problematic alcohol use is also more often reported among those adolescents who bully others. Access to alcoholic beverages in recent years has increased in African settings. Weak legislation around the protection of minors from the harmful effects of alcohol, as well as poor enforcement are likely to further exacerbate this issue in the future [58].

Understanding the direction and the mechanism linking health compromising behaviors and bullying is vital for a health promotion strategy that aims at preventing bullying.

Both being physically attacked and being seriously injured were associated with the probability of being bullied. Physical attack when repeated over time is in itself bullying, and suffering injury may expose one to bullying and can, as well, be a consequence of bullying. The pathway linking physical attack or injury and bullying is therefore unclear. Future studies should explore these mechanisms; particularly combining qualitative interviews with questionnaires will increase our understanding of the relationship between these variables.

Truancy has been shown to increase the chances of being bullied [45,59]. Our study confirmed this in that a higher probability of being bullied was found among adolescents who were truants at school. Truancy may reflect several circumstances of an adolescent, particularly in a poor country, like Ghana, including socioeconomic conditions, parental control, as well as health. In this regards, the relationship between truancy and bullying found here could also mirror these circumstances of the children. On the other hand, it is possible that bullied adolescents shy away from school for fear of being bullied.

Hunger was found to be higher among those who reported being bullied. Hunger epitomizes the socioeconomic conditions of the family. Thus, similar to the relationship between bullying and truancy, as well as the relationship between deprivation and bullying found in a previous study from Sub-Saharan Africa [60], our finding confirms the risk of bullying among adolescents who might be living in unfavorable socioeconomic circumstances.

Strengths and Limitations

The results in this study are strengthened by several features. The sample was representative of all school-attending adolescents aged 11–16 years in Ghana with a sample size large enough to detect statistically significant differences. The survey questionnaire used had been validated in a number of cross-cultural settings, and participants were ensured of the anonymity of their responses. However, the results must still be interpreted in light of several limitations. The cross-sectional nature of the data does not allow for interpretations of causality. The questionnaire was not administered to adolescents who were not present on the day of the survey, which means that the study remains silent on their characteristics. All data used were self-reported, which, even in an anonymous survey, is subject to social-desirability and non-response bias. Despite being designed to be administered cross-culturally, there may have been some questions that were interpreted differently from their original intent. Finally, missing data on responses for bullying were also an important limitation in this study; however, non-response tends to drive associations to the null.

5. Conclusions

Bullying among Ghanaian adolescents is high, even when compared with similar settings in the SSA region. The school environment may prove to be a viable environment for intervention. School health measures, for example, may be designed to simultaneously target risk behaviors and encourage an appreciation of differences among school attendees. Such interventions would benefit by being implemented in mixed age, mixed gender settings. Intervention opportunities might be particularly beneficial if they are also accompanied by interventions designed to reduce health compromising behaviors generally, such as substance and alcohol use and misuse.

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Author Contributions

Emmanuel O. Acquah conceived of the study, participated in the design and compiled the various sections of the manuscript written by the authors as the first draft of the complete manuscript. Michael L. Wilson performed the statistical analysis in consultation with the co-authors, assisted in the interpretation of the results and critically reviewed the manuscript. David T. Doku critically reviewed the manuscript, assisted in the data analysis and interpretation of the results and participated in the manuscript's revision in consultation with the co-authors.

Conflicts of Interest

The authors declare no conflict of interest.

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