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## Suicidal Ideation and Suicide Attempt Among Adolescents in Western Jamaica:

### A Preliminary Study

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### Abstract

**Background**—Although extensive studies on adolescent suicidal behavior have been conducted in developed countries such as the United States, little data exist on risk factors for suicide among adolescents in culturally and socially disadvantaged settings, such as Jamaica.

**Aims**—To conduct a preliminary investigation of risk factors associated with suicide ideation and attempt among youths in Western Jamaica.

**Methods**—We conducted a cross-sectional study of 342 adolescents aged 10–19 years from 19 schools.

**Results**—Multivariate analysis showed that a history of self-violence, violent thoughts toward others, mental health diagnoses other than depression, and a history of sexual abuse were positively associated with suicide attempt. Sexual abuse, mental health diagnoses other than depression, self-violence, and ease of access to lethal substances/weapons were positively associated with suicide ideation.

**Conclusions**—We found a relatively high prevalence of suicide ideation and suicide attempts among adolescents living in Western Jamaica. An accurate understanding of the prevailing risk factors for suicide attempts will promote a more sympathetic approach to victims and facilitate prevention efforts.

### Keywords

suicide; adolescent; Jamaica

### Introduction

Suicide, or self-directed violence, is increasingly becoming a notable global public health problem, and it is now the thirteenth leading cause of death worldwide (World Health Organization [WHO], 2002). In 2000, half of the estimated 1.6 million deaths due to

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violence were attributed to suicide. Despite this high number of reported incidences, the reported proportions may not accurately represent the full magnitude of the problem due to underreporting or misclassification on death certificates (WHO, 2002). Only a minority of suicide ideators actually kill themselves, and only about 10% of suicide attempters actually succeed (WHO, 2002). Young children and adolescents are not untouched by this epidemic. Globally, suicide ranks among the top three leading causes of adolescent mortality (WHO, 2001), with rates steadily increasing in this age cohort (Wasserman, Cheng, & Jiang, 2005). In the United States, suicide is reported to be the third leading cause of death among youths (Centers for Disease Control and Prevention [CDC], 2009), and in 2007, 15% of the surveyed adolescents reported seriously considering suicide (CDC, 2008). A study conducted in China reports suicide as the leading cause of death among adolescents and young adults (Phillips, Li, & Zhang, 2002). A prevalence of 23–31% for suicide ideation is reported among adolescents in Hong Kong (Chan et al., 2008). Suicidal ideation in adolescents has also been shown to be a predictor of psychopathology and suicidal behavior in adults (Reinherz, Tanner, Berger, Beardslee, & Fitzmaurice, 2006).

Suicide causation is highly complex and can vary widely based on individual and environmental influences. Mental health disorders, such as mood, anxiety, and substance-related disorders, are significantly culpable in a large proportion of suicidal behaviors (Li, Phillips, Zhang, Xu, & Yang, 2008; Moscicki, 1997; Waldrop et al., 2007); however, nonpsychological elements also play equally important roles and can often act as triggers. These include, but are not limited to, conduct disorders, sexual or physical abuse, exposure to household and peer violence, scholastic failure, poor socioeconomic status, incarceration, sexuality, adolescent struggles, sleep disorders, family adversity, poor familial and social connectedness, and other life stressors (Beautrais, 2000; CDC, 2009; Chan et al., 2008; Fergusson, Woodward, & Horwood, 2000; Kelly, Cornelius, & Lynch, 2002; Li et al., 2008; Maris, 2002; National Alliance on Mental Illness [NAMI], 2008; WHO, 2001). In addition, certain demographic variables such as female gender and older age have been associated with suicidal attempts and ideations (Anteghini, Fonseca, Ireland, & Blum, 2001; Blum et al., 2003; Chan et al., 2008; Waldrop et al., 2007).

Mental disorders comprise 24% of the health burden in Latin America and the Caribbean, with one out of every five children or adolescents suffering from disorders that require some intervention (Pan American Health Organization [PAHO], 2005). In a 9-country multisite health survey of 15,695 Caribbean youths aged 10–18, 15% of the adolescents reported significant emotional distress, while 12% reported having attempted suicide (Blum et al., 2003). A 2006 report indicates that approximately 3% are reported as committing suicide in Jamaica, with depression being the principal cause (Jamaica Information Service, 2006). Adolescents comprise a significant proportion of attempters: In 2001, 41% of all hospital visits made for attempted suicide involved young people aged 10–19 years (Jamaican Ministry of Health, 2001). This is higher than attempter rates in many developed countries such as the United States, where in 2001, 19% of surveyed youths reported a previous suicide attempt (CDC, 2002) and 7% in 2007 (CDC, 2008).

To the best of our knowledge, there are very limited published data on specific research addressing suicide attempts and its risk factors in the critical adolescent age group in

Jamaica, and in the Caribbean as a whole. There are no data available on the prevalence of Jamaican adolescents who have seriously contemplated suicide, hence the need for research in this area. This study investigated the risk factors associated with attempted suicide and suicide ideation among adolescents in Western Jamaica. It entails our findings on the relationships between mental health, familial and social connectedness, anger management, and suicidal tendencies. In line with findings in other countries, we hypothesized that poor mental and emotional health (e.g., depression), abuse of alcohol and other substances, as well as poor familial/social connectedness would be significantly associated with both suicide ideation and attempt.

## Methods

### Study Design, Site, and Participants

A cross-sectional study was conducted in the parishes of St. James and Westmoreland in Western Jamaica from May–August 2006. In 2005, the total population of adolescents aged 10–19 living in the two parishes was 64,447 (Western Regional Health Authority, 2006). Out of 117 primary, junior-high, secondary, technical, and all-age schools in the parishes, 28 separate schools were selected as study sites based on location and enrollment size. Eligible participants consisted of adolescents aged 10–19 enrolled in grades 6–11 at any of the 28 selected schools. Sample size requirement for the test of a single population proportion was calculated both electronically (Lenth, 2006) and manually. A worst case 50% prevalence for suicidal behavior was used as there are no available data on the prevalence of Jamaican adolescents who have seriously considered or attempted suicide. Based on a 95% confidence interval and 5% margin of error, a total sample of 382 adolescents was required. However, only a total of 342 adolescents were recruited in the 3-month period. Students from 19 out of the 28 eligible schools participated in this study, and the proportion of participants was split equally between the two parishes (Table 1). Primary reasons for the smaller sample size included administrative barriers due to the busy period at the end of the school year, as well as nonreturn of parental consent. The purpose and objectives of the study were explained to the students at each of the schools. Students were then asked to take consent forms home to obtain parental consent. The children were also asked for their own assent to participate. No child was enrolled as a participant without both parental consent and own assent. Participation in the study was voluntary, and no incentives were provided. All study questionnaires were anonymous as no identifying information was recorded, and the students were assured that strict confidentiality would be maintained.

### Ethical Approval

The Institutional Review Board of the University of Alabama at Birmingham, USA, the Advisory Panel of Ethics and the Medico-Legal Affairs in the Ministry of Health, Jamaica, and the Western Regional Health Authority, Jamaica, approved the study protocol prior to its implementation.

### Data Instrument and Measures

A structured self-administered 54-item questionnaire totaling 159 options was developed based on the instrument used in the 9-country Caribbean survey (Blum et al., 2003). This

questionnaire covered the following topics: demographics, school performance, relationship with parents/caregivers and other family members, extrafamilial relationships, general health, substance use including alcohol, tobacco, and any illegal drugs, violence, sexual practices, history of physical and sexual abuse, mental health, suicidal thoughts, past attempts at suicide, and access to care. The selected variables were chosen based on our literature review of risk factors for suicide in other settings. The questionnaire was pilot-tested by administering it to adolescents of different ages and modified based on their understanding, questions and responses. The measures that were used are described below.

**Suicide Ideation and Attempt**—Lifetime suicide ideation was defined as a positive response to the following question: “Have you ever thought about killing yourself?” Lifetime suicide attempt was defined by a positive response to the question “Have you ever tried to kill yourself?”

**Depression, Mental and Emotional Health**—The presence of depression and other mental health problems was assessed using the following questions: “Has a doctor or healthcare provider ever told you that you were depressed?” (depression); “Has a doctor ever told you that you have an emotional or mental health problem other than depression?” – “In general, do you see yourself as a person who is mostly happy, sad, angry or frustrated?” – “During the past 2 weeks, have you felt so down or discouraged that you wondered if anything was worthwhile?” (other mental health).

**Violence and Violent Tendencies**—These were assessed using the items: “Do you ever think about hurting or killing someone?” – “Have you ever tried to hurt yourself on purpose?”

**Difficulty Managing Anger**—This was assessed using the item: “During the past month, have you had difficulty managing your anger?” Selecting *three or more times* was classified as a positive response.

**History of Sexual and Physical Abuse**—The following questions were used to assess the history and exposure to sexual and physical abuse: “Have you ever been physically abused or mistreated by anyone in your household or anyone else?” – “Has anyone in your household been physically abused?” – “Have you ever been sexually abused?” – “Has anyone in your household been sexually abused?”

**Substance Abuse**—Alcohol use was classified on the frequency of consumption of beer, wine, or hard liquor within the past year, while illegal substance abuse was defined as an acknowledgment of the consumption of ganga (marijuana) more than just a few times within the past year.

**Familial and Social Connectedness**—This measure was assessed using the questions “Can you talk to the following people about your problems? Mom, dad, friends, teachers, pastor, counselor, others.” – “How much do you feel the following people care about you? Mom, dad, friends, family, pastor, counselor, teachers.” Stating *definitely/somewhat* and

*some/a lot* to any of the options were classified as positive responses. “Who do you spend your free time with? Family, Friends or alone?” was also included in this category.

**Religious Affiliation**—This was measured as either identifying with a church in response to “Do you attend a church?” and “In the last 3 months, how often did you go to church?” or a response to “Do you think of yourself as a religious person?”

Some of the other questions of interest included in the instrument were:

- “If you ever decided to kill yourself, do you think it would solve any of your problems?”
- “If you ever planned to kill yourself, could you get the things you needed to do it with?”
- “Who do you live with most of the time?” and “What kind of student are you? Below average, average or above average?”

## Data Analysis and Variable Selection

Data analysis was performed using SAS software, version 9.1 (SAS Institute, NC). Several variables were assessed in this study. Therefore, in order to preserve the power of the final model, preliminary crude and multivariable analyses were performed to rule out variables that were nonsignificant at the  $\alpha$  level of 0.05. Variables of interest, those shown to be associated with suicidal behaviors in other studies as well as those significant at the set  $\alpha$  level, were then selected for final analysis.

Descriptive analyses were performed by obtaining absolute and relative frequencies for the distributions of selected variables. The study population was divided into four groups: suicide ideators, nonsuicide ideators, suicide attempters, and nonsuicide attempters.  $\chi^2$  test was used to assess differences in the distributions of the selected variables by the two groups of ideators and attempters.

To determine risk factors for suicidal behavior in the study population, multivariable logistic regression was then performed and odds ratios were generated as measures of association. Each variable of interest was individually fitted with the outcome (suicide ideation or attempt) to obtain crude associations. Gender and age were included as potential confounders. Variables that were significant in the full model and those of interest were included in the final model. Missing values for either attempt or ideation were excluded from the analyses, and a total of 332 records were analyzed.

## Results

### Descriptive Statistics

**Suicide Attempt**—82 (24.6%) of the participants reported having attempted suicide (Table 2), with females comprising 64% of this population. Approximately 24% of attempters indicated that they had been either physically abused or knew someone in their family who had been abused, while 33% reported past sexual abuse to them or a family member. About

5% reported monthly or more frequent alcohol use, while 6% indicated monthly or more frequent other substance (ganga) use. 12% reported having a depression diagnosis, and 79% reported the diagnosis of an emotional or mental health issue apart from depression and/or persistent moodiness. 12% indicated that they had no religious affiliations, while 19.5% reported having struggled to control their anger three or more times in the previous month. 52% indicated that they could easily obtain means to kill themselves with, while 56% reported that they had previously tried to hurt themselves. 70% reported a history of violence toward others, 18% considered their school performance *below average*, and 18% indicated that they spent most of their free time alone. Attempters significantly differed from nonattempters in the following variables: depression diagnosis ( $p = .03$ ), other emotional/mental health problems ( $p < .01$ ), history of sexual abuse ( $p < .01$ ), suicide as a problem solver ( $p = .01$ ), religious affiliation ( $p = .03$ ), history of self-violence ( $p < .01$ ), easy access to lethal substances/objects ( $p < .01$ ), violent thoughts toward others ( $p < .01$ ), difficulty managing anger ( $p < .01$ ), school performance ( $p < .01$ ) and solitary tendencies ( $p < .01$ ).

**Suicide Ideation**—Of the 332 evaluated participants, 38% reported having suicide ideations (Table 3). 56% of these indicated that they had actually attempted suicide. 60% of ideators were female. 35% reported that either they or a family member had been physically abused, while 29.4% reported past sexual abuse to them or a family member. About 5.5% reported monthly or more frequent alcohol use, while 5% indicated monthly or more frequent other substance (ganga) use. 7% reported having a depression diagnosis, while 75% reported diagnosis of an emotional or mental health issue apart from depression and/or persistent moodiness. 8% indicated that they had no religious affiliations, while 17.5% reported that they struggled with controlling their anger three or more times in the previous month. 49% indicated that they could easily obtain means to kill themselves with, while about 52% reported that they had previously tried to hurt themselves. 60% reported a history of violence toward others, 13.5% considered their school performance *below average*, and 13.5% indicated that they spent most of their free time alone. Ideators significantly differed from nonideators in the following variables: other emotional/mental health diagnoses apart from depression ( $p < .01$ ), history of physical abuse ( $p < .01$ ), history of sexual abuse ( $p < .01$ ), suicide as a problem solver ( $p = .01$ ), religious affiliation ( $p = .03$ ), history of self-violence ( $p < .01$ ), easy access to lethal substances/objects ( $p < .01$ ), violent thoughts toward others ( $p < .01$ ), school performance ( $p < .01$ ) and solitary tendencies ( $p = .04$ ).

### Multivariable Analyses

Due to nonconvergence of some of the data resulting from too few cell numbers, alcohol abuse and ganga use were combined under “substance abuse.” Results from the multivariable analyses are detailed in Tables 4 and 5. Models were adjusted for age and gender.

**Suicide Attempt**—A history of having violent thoughts toward others (OR = 2.21, 95% CI = 1.04–4.72), as well as having mental health problems other than a depression diagnosis (OR = 3.34, 95% CI = 1.53–7.31) were positively associated with suicide attempts (Table 4). Adolescents who had a history of self-violence had a 4-fold increased odds of reporting



suicide attempt (OR = 4.02; 95% CI = 1.87–8.59). History of sexual abuse was also significantly associated with suicidal attempt (OR = 2.43; 95% CI = 1.05–5.61).

**Suicide Ideation**—Having emotional/mental health issues increased the odds of ideation 3-fold (OR = 3.19, 95% CI = 1.64–6.18). Adolescents who had tried to hurt themselves in the past (OR = 4.20, 95% CI = 2.08–8.48), and those who felt they could easily obtain means to kill themselves if they wanted (OR = 3.51, 95% CI = 1.75–7.03), were significantly more likely to experience suicidal thoughts (Table 5). Adolescents who had a family or individual history of sexual abuse had over 2-fold increased odds of suicide ideation (OR = 2.79, 95% CI = 1.25–6.20).

## Discussion

Our findings suggest that suicide attempts (25%) and suicide ideations (38%) among adolescents in our sample are quite high since approximately a quarter of the participants had attempted suicide, and over a third had thought of committing suicide. Given that attempts at suicide are some 10–40 times more common than the completed act (Bertolote et al., 2005; Platt et al., 1992; Schmidtke, Bille-Brake, De Leo, & Kerkhof, 2004), and that attempt constitutes a risk factor for completing suicides, this finding calls for reflecting on factors that may be associated with attempts at suicides, especially when these rates are compared to rates in other developing countries. Our study corroborates a similar study conducted in the United States among adolescents of different races including adolescents from the Caribbean, which found that attempted suicide was highest among Caribbean females (Joe, Baser, Neighbors, Caldwell, & Jackson, 2009). This is contrary to data from the WHO, which show a relatively low suicide rate in Jamaica and other Caribbean nations (WHO, 2003). However, it lends credence to a study by Joseph et al. (2003), who demonstrated that suicide rates in developing countries are grossly underreported.

The relatively high proportion of respondents who reported sexual abuse (32%) and physical abuse (24%) may provide some insight into why the suicide attempt rate is relatively high since abuse (physical or sexual) has been found to increase the risk of suicide 2-fold (Blum et al., 2003). Compared to a study of adolescents conducted in the Anglo-Caribbean region, which reported rates of 10% for sexual abuse and 16% for physical abuse (Halcon et al., 2003), these rates are high. They are, however, closer to those found in the United States, where sexual abuse rates among adolescents range between 15%–25% in the general population (Leserman, 2005). Because corporal punishment is still common place in most Caribbean countries (Fernald & Meeks, 1997; Levav, Guerrero, Phebo, Coe, & Cerqueira, 1996), the rate of physical abuse is not surprising, though further research is required to elucidate the reason for the high rate of sexual abuse. In this study, there was no significant association between suicidal behavior and female gender. However, sexual abuse was associated with both suicidal ideation and attempt. Studies have shown that girls who are sexually abused as children have a higher predilection to attempting or committing suicide (Roy & Janel, 2006). The higher rates of suicide attempts observed in our study may be explained by inadequate or discriminatory social support systems and fewer opportunities for psychotherapy for these victims of abuse in Jamaica compared to developed countries like the United States.

38% of the participants indicated having suicidal ideation, which is slightly higher than the estimates reported from other developing countries (Anteghini et al., 2001; Chan et al., 2008). Having emotional/mental health problems was associated with a 3-fold increase in the odds of exhibiting suicidal behavior. This is not unexpected because many studies have shown that up to 90%–98% of individuals who end up committing suicide had a depressive or psychiatric disorder (Bertolote & Fleischmann, 2002). Having access to lethal substances/objects with which to harm oneself was unsurprisingly, associated with a 3.5-fold increase in the odds of suicidal ideation. Programs in countries like Denmark have shown how precluding access to these weapons including the use of substances such as barbiturates decreases the incidence of suicides (Nordentoft, 2007).

Contrary to our expectations, substance abuse was not significantly associated with either suicide attempt or ideation. However, the low percentage of frequent substance use in both groups, where only about 6% reported monthly or more frequent use of alcohol and about 2% reported other substance use, is consistent with results from the 9-country Caribbean Youth Health Survey (Halcon et al., 2003). The survey reported monthly or more frequent alcohol use as 3.9% among females and 7.9% among males, and 1.2% (females) and 2.3% (males) reported other substance use (Halcon et al., 2003). This is much lower than results from an American survey, in which frequent alcohol use was 13.8% and drug use 9.9% (Waldrop et al., 2007). Our numbers are surprisingly low despite anecdotal reports of high prevalences of substance use in Jamaica. This may be due to underreporting by participants primarily because of fear of disclosure. Further studies employing biomarkers of chronic drug and alcohol abuse would be useful in validating self-reports.

Our inability to detect significant associations for some variables as observed in similar studies could be attributed to our relatively small sample size. This provided limited statistical power to detect associations that were small and moderate in magnitude, and yielded some estimates that lacked precision. Another potential limitation of this study is the cross-sectional study design, which inherently makes it difficult to separate cause from effect, the measurement of exposure and disease being conducted at the same point in time. However, the study provides a framework to theorize on relationships between the variables measured. This design was useful in gathering preliminary data on suicidal behavior among adolescents in the study location and assessing risk factors for suicide in the population. However, cross-sectional studies are prone to bias. For example, questions about use of alcohol and ganja relied on self-reports (Subramanian, Subramanyam, Selvaraj, & Kawachi, 2008), which are known to be subject to recall bias (Hassan, 2006) and social desirability (Bertolote & Fleischmann, 2002). Nevertheless, the consistency of the associations we found and similar results across studies in different settings points to the validity of the results.

In conclusion, the study found that a significant proportion of adolescent participants living in the parishes of St. James and Westmoreland, Jamaica, had experienced suicide ideation and suicide attempts. Our findings provide a platform for further surveys with larger sample sizes comprising a better representation of adolescents from all 14 parishes of Jamaica to investigate the actual prevalence of mental disorders, suicide ideation, and suicide attempts in Jamaica. Data from these surveys could prove beneficial to other similar Caribbean countries as well. An accurate understanding of the prevailing risk factors should promote a



more sympathetic approach to individuals, encourage government, nongovernmental, and community-based organizations to initiate support programs that could reduce stigma and promote free discussion. This may ultimately set the stage for the provision of more services for evaluation and management of adolescents with psychiatric disorders, provide psychotherapy for victims of physical or sexual abuse, and hopefully reduce the rates of suicide in Jamaica.

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**Table 1**

## Participants' schools by parish

Parish	Name of school	Type of school
Westmoreland (11 schools; 172 participants)	Caledonia	All ages
	Frome	Technical high school
	Godfrey Stewart	High school
	Little London	High school
	Manning's	High school
	Mount Grace	Primary & junior high school
	New Hope	Primary & junior high school
	New Roads	All ages
	Petersfield	High school
	Sheffield	All ages
	Williamsfield	All ages
St. James (8 schools; 170 participants)	Anchovy	Primary school
	Cambridge	High school
	Cornwall College	High school
	Garlands	Primary & junior high school
	Herbert Morrison	Technical high school
	John's Hall	All ages
	Springfield	All ages
	St. James	High school

**Table 2**

Descriptive analysis of selected variables by attempted suicide

Variable	Attempted suicide: No [N = 250 (%)]	Attempted suicide: Yes [N = 82 (%)]	<i>p</i>
Gender			
Male	112 (44.8)	29 (35.4)	.13
Female	138 (55.2)	53 (64.6)	
Age			
10–12	73 (29.2)	27 (32.9)	.06
13–15	144 (57.6)	36 (43.9)	
16–19	33 (13.2)	18 (22.0)	
Depression			
No	223 (93.2)	72 (87.8)	.03*
Yes	13 (5.2)	10 (12.2)	
Other mental health problems			
No	120 (48.0)	17 (20.7)	<.01*
Yes	130 (52.0)	65 (79.3)	
Alcohol use within the past year			
Never	125 (50.0)	40 (48.8)	.69
One or few times only	108 (43.2)	34 (41.5)	
Few times a month	7 (2.80)	2 (2.5)	
Few times a week or daily	2 (0.80)	2 (2.5)	
Other substance (ganga) within the past year			
Never	214 (85.6)	62 (75.6)	.14
One or few times only	22 (8.8)	10 (12.2)	
Few times a month	3 (1.2)	4 (4.9)	
Few times a week or daily	3 (1.2)	1 (1.2)	
Physical abuse/Familial history			
No	175 (70.0)	55 (67.1)	.87
Yes	73 (29.2)	24 (23.5)	
Sexual abuse/Familial history			
No	202 (80.8)	53 (64.6)	<.01*
Yes	41 (16.4)	27 (32.9)	
Talk to others?			
Yes	154 (61.6)	46 (56.1)	.12
No	95 (38.0)	33 (40.2)	
Killing self will solve problems?			
No	206 (82.4)	47 (57.3)	.01*
Yes	37 (14.8)	34 (41.5)	
Religious affiliation?			
Yes	232 (92.8)	70 (85.4)	.03*
No	17 (6.8)	12 (14.6)	

Variable	Attempted suicide: No [ <i>N</i> = 250 (%)]	Attempted suicide: Yes [ <i>N</i> = 82 (%)]	<i>p</i>
Tried to hurt self in past?			
No	196 (78.4)	31 (37.8)	<.01 *
Yes	49 (19.6)	46 (56.1)	
Can easily obtain means to kill self?			
No	179 (71.6)	38 (46.3)	<.01 *
Yes	60 (24.0)	43 (52.4)	
Tried to hurt others in past?			
No	149 (59.6)	25 (30.5)	<.01 *
Yes	96 (38.4)	57 (69.5)	
Difficulty managing anger?			
No	215 (86.0)	61 (74.4)	<.01 *
Yes	21 (8.4)	16 (19.5)	
School performance			
Average/above average	230 (92.0)	65 (79.3)	<.01 *
Below average	11 (4.4)	15 (18.3)	
Spend free time			
With family/friends	233 (93.2)	66 (80.5)	<.01 *
Alone	17 (6.8)	15 (18.3)	

Note.

\* Statistically significant. Sum of *N* for some variables may not equal total *N* due to missing values – missing values were excluded from analyses.



**Table 3**

Descriptive analysis of selected variables by suicide ideation

Variable	Suicide ideation: No [N = 206 (%)]	Suicide ideation: Yes [N = 126 (%)]	p
Gender			
Male	92 (44.7)	50 (39.7)	.36
Female	114 (55.3)	76 (60.3)	
Age			
10–12	56 (27.2)	43 (34.1)	<.01 *
13–15	126 (61.2)	56 (44.4)	
16–19	24 (11.6)	26 (20.6)	
Depression			
No	190 (92.2)	117 (92.7)	.06
Yes	12 (5.9)	9 (7.1)	
Other mental health problems			
No	106 (51.5)	32 (25.4)	<.01 *
Yes	100 (48.5)	94 (74.6)	
Alcohol use within the past year			
Never	108 (52.4)	56 (44.4)	.37
One or few times only	85 (41.3)	57 (45.2)	
Few times a month	4 (2.0)	5 (3.9)	
Few times a week or daily	2 (1.0)	2 (1.6)	
Other substance (ganga) within the past year			
Never	173 (84.0)	102 (80.9)	.50
One or few times only	19 (9.2)	13 (10.3)	
Few times a month	3 (1.5)	4 (3.2)	
Few times a week or daily	2 (1.0)	2 (1.6)	
Physical abuse			
No	153 (74.3)	78 (61.9)	<.01 *
Yes	51 (24.8)	44 (34.9)	
Sexual abuse			
No	172 (83.5)	86 (68.3)	.01 *
Yes	28 (13.6)	37 (29.4)	
Religious affiliation?			
Yes	184 (89.3)	116 (92.1)	.48
No	21 (10.2)	10 (7.9)	
Killing self will solve problems?			
No	168 (81.6)	86 (68.3)	.07
Yes	30 (14.6)	39 (30.9)	
Tried to hurt self in past?			
No	171 (83.0)	57 (45.2)	<.01 *
Yes	28 (13.6)	65 (51.6)	

Variable	Suicide ideation: No [ <i>N</i> = 206 (%)]	Suicide ideation: Yes [ <i>N</i> = 126 (%)]	<i>p</i>
Can easily obtain means to kill self?			
No	156 (75.7)	63 (50.0)	<.01 <sup>*</sup>
Yes	38 (18.5)	62 (49.2)	
Tried to hurt others in past?			
No	125 (60.7)	50 (39.7)	<.01 <sup>*</sup>
Yes	75 (36.4)	76 (60.3)	
Difficulty managing anger?			
No	181 (87.8)	95 (75.4)	.11
Yes	14 (6.8)	22 (17.5)	
School performance			
Average/Above average	189 (91.8)	105 (83.3)	<.01 <sup>*</sup>
Below average	10 (4.8)	17 (13.5)	
Spend free time			
With family/friends	192 (93.2)	108 (85.7)	.04 <sup>*</sup>
Alone	14 (6.8)	17 (13.5)	

*Note.*

<sup>\*</sup> Statistically significant. Sum of *N* for some variables may not equal total *N* due to missing values – missing values were excluded from analyses.

**Table 4**

Crude and adjusted odds ratios from multivariate analyses by suicide attempt

Variable	Crude OR (95% CI)	Adjusted OR (95% CI)	<i>p</i>
Gender: Female vs. male	1.48 (0.88–2.48)	1.52 (0.74–3.12)	.25
Sexual abuse/familial history	2.51 (1.41–4.44)	2.43 (1.05–5.61)	.03**
Physical abuse/familial history	1.04 (0.63–1.82)	0.52 (0.23–1.14)	.10
Depression	2.49 (1.05–5.91)	0.50 (0.12–2.12)	.35
Other mental health problems	3.52 (1.95–6.36)	3.34 (1.53–7.31)	.01**
Ever think of hurting others	3.54 (2.07–6.04)	2.21 (1.04–4.72)	.03**
Think killing self will solve problems	4.02 (2.29–7.07)	1.93 (0.87–4.26)	.10
Tried to hurt self in the past	5.93 (3.41–10.31)	4.02 (1.87–8.59)	<.01**
Can easily obtain means to kill self	3.37 (1.99–5.70)	1.66 (0.77–3.24)	.19
Difficulty managing anger	2.68 (1.32–5.46)	1.15 (0.40–3.24)	.79
Substance use	2.03 (0.80–5.09)	0.77 (0.18–3.24)	.72
Religious affiliation	2.33 (1.06–5.13)	2.39 (0.81–7.01)	.11
School performance	4.82 (2.11–11.01)	2.95 (0.86–10.11)	.08
Free time	3.11 (1.47–6.56)	1.49 (0.50–4.40)	.46

*Note.* All missing observations were excluded from the analysis.

\*\* Statistically significant. Model was adjusted for age and gender.

**Table 5**

Crude and adjusted odds ratios from multivariate analyses by suicide ideation

Variable	Crude OR (95% CI)	Adjusted OR (95% CI)	<i>p</i>
Gender: Female vs. male	1.23 (0.78–1.92)	1.37 (0.72–2.61)	.32
Sexual abuse/familial history	2.64 (1.51–4.60)	2.79 (1.25–6.20)	.01 **
Physical abuse/familial history	1.69 (1.04–2.75)	1.09 (0.55–2.16)	.78
Depression	1.21 (0.49–2.97)	0.71 (0.14–3.40)	.66
Other mental health problems	3.11 (1.91–5.05)	3.19 (1.64–6.18)	.01 **
Ever think of hurting others	2.53 (1.60–4.00)	1.50 (0.78–2.89)	.22
Think killing self will solve problems	2.53 (1.47–4.36)	1.51 (0.69–3.32)	.30
Tried to hurt self in the past	6.96 (4.07–11.89)	4.20 (2.08–8.48)	<.01 **
Can easily obtain means to kill self	4.03 (2.45–6.65)	3.51 (1.75–7.03)	<.01 **
Substance use	2.33 (0.95–5.72)	0.80 (0.20–3.17)	.75
Difficulty managing anger	2.99 (1.46–6.11)	1.46 (0.53–4.04)	.46
Religious affiliation	0.75 (0.34–1.66)	0.60 (0.20–1.79)	.36
School performance	3.06 (1.35–6.92)	1.97 (0.55–7.04)	.29
Free time	2.16 (1.02–4.55)	1.09 (0.32–3.63)	.88

*Note.* All missing observations were excluded from the analysis.

\*\* Statistically significant. The model was adjusted for age and gender. Adjusted model includes variables of primary interest, those that were significant in crude analysis and potential confounders.