



ORIGINAL ARTICLE

## Bullying Victimization and Its Relation to Suicidal Ideation among Secondary School Students in Sharkia Government – Egypt

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**ABSTRACT**

**Background:** Children under the age of five are most commonly affected by severe, dehydrating gastroenteritis brought on by infections with rotavirus. Despite the common usage of rotavirus immunizations more than ten years ago, rotavirus infections still cause more than 200,000 fatalities each year, primarily in developing nations. Rotavirus predominantly affects enterocytes and causes diarrhea by destroying absorbent enterocytes (resulting in malabsorption), stimulating intestinal secretion by activating the enteric nervous system, and viral non-structural protein 4. Furthermore, rotavirus infections can result in viremia and antigenaemia, both of which are connected to more severe acute gastroenteritis symptoms. Although this is uncommon, rotavirus can also replicate in systemic areas. Rotavirus reactivations are frequent throughout life, however they lessen the severity of the illness. Although both aspects—protection against rotavirus reinfection and recovery from infection—involve rotavirus-specific immunoglobulin A, the immunological implications of these processes are poorly understood. Although the use of antiviral and antiemetic medications may be necessary in rare circumstances, Dehydration must be avoided and treated in order to manage rotavirus infection. **Conclusions:** Rotavirus causes acute dehydrating diarrhea associated with high global mortality in particular among under five-year children. The introduction and expanded use of the two oral attenuated rotavirus vaccines have already contributed to reductions in rotavirus-attributable child death and hospitalization.

**Keywords:** Rotavirus structure; pathophysiology; management; Lanzhou Lamb Rotavirus; triple-layered particle

### INTRODUCTION

Globally, suicide is a serious public health issue [1]. Suicide was the second most common cause of death for teenagers and young adults (10–24 years old) in 2019 [2]. suicide ideation, which is a crucial psychological activity in the early stages of suicide behavior, is the concept and purpose of an individual to intentionally terminate his life [3]. Early adolescence (10–13 years) is when suicide ideation typically first appears [4]. Since some suicide deaths may have been reported as "accidental," the actual number of

suicide deaths may potentially be greater. Teenage boys between the ages of 15 and 19 had a three-fold higher completion rate for suicide than did girls, while girls had twice as many suicide attempts as did boys, suggesting that girls tended to select less deadly means. It is estimated that among teenagers, the ratio of attempted suicides to completed suicides is between 50:1 and 100:1 [5].

Significantly, the majority of young people (90%) live in low- and middle-income countries (LMICs), which also account for more than 79% of all suicides globally [6].

Bullying at school is one significant aspect that has drawn the attention of researchers recently as a predictor of suicide ideation [7]. A relatively helpless person is subjected to repeated attacks, humiliation and/or exclusion by an individual or group of individuals, a behavior known as bullying [8]. Three key elements were proposed by Olweus [9] for operationalizing bullying: 1) an unbalanced power dynamic; 2) deliberate harm inflicted and 3) repeated acts over an extended period of time.

Depending on the sample or bullying measurement tool, estimates indicate that 10–50% of teenagers reported experiencing bullying at school at least once in the previous month [10]. The majority of bullying occurs on school property [11], but with the development of the Internet, bullying is now frequently conducted via electronic communication devices, including cellphones, email, instant messaging and social networking sites.

"Any behavior performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on others" [12] is the definition of electronic bullying, also referred to as "cyberbullying."

Over the past 20 years, it has been abundantly clear that bullying victimization and suicide thoughts are related [13]. The relationship between bullying victimization and suicidality in young people as a whole was the subject of a comprehensive review that revealed odds ratios (ORs) ranging from 1.7 to 11.8 in longitudinal studies and from 1.4 to 10.0 in cross-sectional studies [14]. There hasn't always been a consistent correlation between

suicidal thoughts and bullying victimization in various situations. Social protective factors have been found in several studies to prevent suicidal behavior in bullied individuals. Furthermore, there are conflicting results about gender differences [15], which may be the subject of our investigation.

## METHODS

This cross-sectional survey was conducted from January to June 2023 on 312 male and female students, ages 15 to 18, from various randomly chosen secondary schools in the Sharkia governorate, Egypt. All socioeconomic classes were represented. Students who declined to take part in the study as well as adolescents with a history of mental illnesses were not allowed.

A semi-structured interview was conducted with all participants to gather socio-demographic information such as age, sex, residence, school, academic year and academic achievement, as well as any academic or emotional distress, living with family or other relatives, interpersonal conflicts, the presence of parental divorce, history of any past suicidal attempts, economic level and tobacco use.

A written informed consent was presented to all students participating in the study with explanation of the purpose of the study. Approval was obtained from the Institutional Review Board (IRB) and the Department of Psychiatry, Zagazig University (number 10166). The study was conducted according to the guidelines of the Declaration of Helsinki.

### Psychometric assessment:

- **Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II):**

It is considered to be the gold standard semi-

structured assessment instruments for personality disorders (PDS) [16].\*SCID-II includes a self-report Personality Questionnaire, which is a 119-item self-report, forced choice yes/no screening component takes about 20 minutes [17]. Individual items or criteria are scored as: 1; absent, 2; subthreshold or 3; threshold. the number of SCID-II items on which he scored a “3,” indicating the definite presence of a given personality disorder (trait), For each Axis II disorder, a specified number of items have to receive a threshold rating in order to derive a probable or definite diagnosis. As in the Partial differential equation, dimensional scores can be calculated by summing the ratings from each disorder scale, that is, adding together all subthreshold and threshold criteria scores from each individual item for each separate personality disorder [18].

\*It refers to the 10 personality disorders described in the DSM IV-TR on Axis II (Avoidant, Dependent, Obsessive-Compulsive Disorder, Paranoid, Schizotypal, Schizoid, Histrionic, Narcissistic, Borderline, and Antisocial) and to Passive Aggressive and Depressive Personality Disorders). Persons met self-report criteria for any given PD were then administered the corresponding portions of the SCID-II interview in order to assign a formal diagnosis [17].\*The Arabic version used in this study was translated and validated through previous research and used in a previous Egyptian study [19].

- **Bullying Behavior Scale:**

It is a self-administered questionnaire was used to collect data about the bullying behavior among the selected students in school and was distributed among them by the researcher. The questionnaire is classified

into two sections. The first section includes the student’s demographic data (name, age, sex, and school grade) and some instructions about answering on the questionnaire. The second section includes 40 statements that was adopted from the validated Arabic version of bullying behavior scale for children and adolescents [20]. The scale takes about 10 minutes. The scale explains four types of bullying: physical, verbal, indirect bullying (social and psychological). Each item is rated according to which anchoring points in the 5-point Likert scale (1 = absent; 5 = extreme). A rating of 1 indicates that the bullying behavior never occurred (absent), a rating of 2 indicates that bullying behavior occurs occasionally (mild), a rating of 3 indicates that the bullying behavior occurs frequently (moderate), a rating of 4 indicates that the bullying behavior occurs too much (severe) and a rating of 5 indicates that the bullying behavior is extreme.

- **Bullying Victimization Scale:**

The Bullying Victimization Scale is a self-administered questionnaire was used to collect data about the bullying victimization/exposure among the selected students and was distributed among them by the researcher. The questionnaire is classified into two sections. The first section includes the student’s demographic data (name, age, sex, and residence) and the second section includes 40 statements that were adopted from the validated Arabic version of bullying victimization scale for children and adolescents [21]. The scale takes about 10 minutes. The scale explains four types of bullying: physical, verbal, interpersonal and sexual bullying. Each item is rated according to which anchoring points in the 3-point

Likert scale (0 = absent, 1 = occasionally, 2= too much). A rating of 0 indicates that the student never exposed to bullying(absent), a rating of 1 indicates that the student is occasionally exposed to bullying (moderate) and a rating of 2 indicates that the student is exposed to bullying a lot (severe).

- **Beck Scale for Suicidal Ideation (BSS):**

Beck Scale for Suicidal Ideation (BSS) is a 19-item instrument of the current intensity of specific attitudes, behaviors, and plans to commit suicide [22].Administering this scale takes approximately 10 to 15 minutes scale and must be done by specialized personnel, The 19 items are “Wish to live, Wish to die, Reason for living, Active attempt, Passive attempt, Duration of thoughts, Frequency of ideation, Attitude toward ideation, Control over action, Deterrents to attempt, Reasons for attempt, Specificity of planning, Availability/opportunity, Capability, Expectancy, Actual preparation, Suicidal note, Final acts, Deception”. Each item consists of three options graded according to the intensity of the suicidality, all19 items are rated on a three-point scale 0 to 2 (no ideation to strong ideation)(0=not a problem, 1=mild problem, 2=severe problem), ranged from 0 to 32, No specific cut-off scores exist to classify severity or guide patient management, increasing scores reflect greater suicide risk, and any positive response merits investigation [23].Validated Arabic version used in this study was translated and used in previous study [24].

Statistical analysis: All data were collected, tabulated and statistically analyzed using IBM SPSS software package version 25.0(IBM Corp. Released 2017. IBM SPSS(Statistical Package for Social Science) Statistics for

Windows, Version 25.0. Armonk, NY: IBM Corp. The used tests were Pearson’s chi square ( $\chi^2$ ) test, Mann Whitney test, Kruskal-Wallis test.

## RESULTS

**Table 1** show that among the participants, the mean age was  $16.97 \pm 0.79$  years and ranged from 15 years to 18 years and most of them (61.2%) were 17-18 years old. More than half of them were males (54.5%) and 45.5% were females with male to female ratio was 1.2: 1. Most of them (60.3%) were from rural areas. School in rural areas was the most school shared in our study (62.8%). Regarding education achievement, 30.4% had fair achievement, 41.7% of them had average scores and 27.9% had below average scores. 160 (51.3%) students exposed to psychosocial stress and 26 (8.3%) students were smokers. Most participants were living with their parents (94.9%). Regarding economic level, 83% students had middle family income, 10.9% of their families had high income and 6.1% had low income. Most students (75.3%) had no inter-personal troubles. Less frequent students (6.7%) had their parents divorced. Nine out of 312 (2.9%) participants reported past suicidal attempts. The mean number of attempts was  $3.09 \pm 2.33$  and ranged from one time to 9 times .

**Table 2** show that the mean total bullying behavior scale was  $30.07 \pm 18.73$ . The mean physical bullying had a mean of  $3.68 \pm 2.82$ , the mean verbal bullying had a mean of  $11.66 \pm 5.81$ , the mean psychological bullying had a mean of  $9.74 \pm 7.06$  and the mean social bullying had a mean of  $4.99 \pm 3.8$ . The mean total bullying victimization was  $21.76 \pm 21.79$ . The mean physical bullying victimization had a mean of  $6.25 \pm 6.16$ , the mean sexual

bullying victimization had a mean of  $4.78 \pm 5.42$ , the mean interpersonal bullying victimization had a mean of  $5.62 \pm 5.77$  and the mean verbal bullying victimization had a mean of  $5.11 \pm 4.97$ .

**Table 3** show that: One hundred and three out of 312 (33%) students were victims of bullying. According to distribution of personality disorders among the selected students. The results showed that 8% students had narcissistic personality trait, 5.8% students had antisocial personality trait, 7.1% students had borderline personality trait, 2.6% students had passive-aggressive personality trait, 1.5% students had other personality traits.

Table 4 : the Structured Clinical Interview for DSM-IV Axis II Disorders (SCIDII) was used for assessment of personality disorders among the selected students. The results showed that the mean narcissistic personality trait score was  $3.60 \pm 1.34$ , the mean antisocial personality trait was  $4.47 \pm 2.05$ , the mean borderline personality trait score was  $4.99 \pm 2.46$ , the mean passive-aggressive personality score was  $4.42 \pm 2.73$ , and the mean other traits score was  $4.55 \pm 2.37$ .

**Table 5:** The Beck Suicidal Ideation Scale (SSI) was used to evaluate the presence of suicidal ideation among the selected students. The total SSI score had a mean of  $12.42 \pm 8.78$  and ranged from 0 to 32.59 out of 312 (18.9%) students reported suicidal ideation.

**Table 6:** There was a statistically significant association between bullying and suicidal ideation ( $p < 0.001$ ) as 32 students out of 59 students who had suicidal ideation were victims of bullying. Also, there was a statistically significant association between bullying and suicidal attempts ( $p < 0.011$ ) as 7 students out of 9 students who reported suicidal attempts were victims of bullying.

**Table 7:** There was a statistically significant relationship between bullying and age ( $p = 0.004$ ) as it was significantly higher in 15-16 years old compared to 17-18 years old. In addition, there was a statistically significant relationship between bullying and gender ( $p = 0.027$ ) since it was significantly higher between males. Bullying was found to be significantly higher between students in rural places compared to those in urban ( $p = 0.002$ ). There was no statistically significant relationship between bullying and education achievement.

**Table 8:** There was positive significant correlation between bullying behavior with narcissistic personality trait ( $p < 0.001$ ) and antisocial Personality trait ( $p = 0.011$ ).

**Table 9:** Bullying victimization was significantly higher in students with passive-aggressive trait ( $p = 0.029$ ) and borderline personality trait ( $p = 0.001$ ).

**Table 10:** Suicidal ideation was significantly higher in students with borderline personality trait ( $p < 0.001$ ), passive-aggressive trait ( $p < 0.001$ ), antisocial personality trait ( $p < 0.001$ ) and narcissistic personality trait ( $p < 0.001$ ).

**Table (1):** Demographic characteristics of studied participants.

| Items                  | Studied participants<br>(n=312) |       |
|------------------------|---------------------------------|-------|
|                        | No                              | %     |
| Age                    |                                 |       |
| Mean± SD               | 16.97± 0.79                     |       |
| Median                 | 17.0                            |       |
| Range                  | 15.0- 18.0                      |       |
| Gender                 |                                 |       |
| Male                   | 170                             | 54.5% |
| Female                 | 142                             | 45.5% |
| School                 |                                 |       |
| Urban schools          | 116                             | 37.2% |
| Rural schools          | 196                             | 62.8% |
| Residence              |                                 |       |
| Urban                  | 124                             | 39.7% |
| Rural                  | 188                             | 60.3% |
| Education achievement  |                                 |       |
| Fair                   | 95                              | 30.4% |
| Average                | 130                             | 41.7% |
| Below average          | 87                              | 27.9% |
| Psychosocial stress    |                                 |       |
| Yes                    | 160                             | 51.3% |
| Smoking                |                                 |       |
| Yes                    | 26                              | 8.3%  |
| Living with family     |                                 |       |
| With the parents       | 296                             | 94.9% |
| With other relatives   | 16                              | 5.1%  |
| Economic level         |                                 |       |
| High                   | 34                              | 10.9% |
| Middle                 | 259                             | 83.0% |
| Low                    | 19                              | 6.1%  |
| Interpersonal troubles |                                 |       |
| Present                | 77                              | 24.7% |
| Absent                 | 235                             | 75.3% |
| Divorce                |                                 |       |
| Yes                    | 21                              | 6.7%  |



| Items                               | Studied participants<br>(n=312) |      |
|-------------------------------------|---------------------------------|------|
|                                     | No                              | %    |
| Prevalence of past suicide attempts |                                 |      |
| Yes                                 | 9                               | 2.9% |
| Numbers of suicidal attempts (n=9)  |                                 |      |
| Mean ±SD                            | 3.09 ± 2.33                     |      |
| Range                               | 1.0- 9.0                        |      |

**Table (2):** Total and subscales of bullying behavior scale and total and subscales of bullying victimization among the studied participants.

|                              | Studied participants<br>(n=312) |        |        |       |       |
|------------------------------|---------------------------------|--------|--------|-------|-------|
|                              | Mean                            | ±SD    | Median | Range |       |
| Total bullying behavior      | 30.07                           | ±18.73 | 33.0   | .0    | 61.0  |
| • Physical bullying          | 3.68                            | ±2.82  | 4.0    | 0.0   | 10.0  |
| • verbal bullying            | 11.66                           | ±5.81  | 12.0   | 0.0   | 22.0  |
| • psychological bullying     | 9.74                            | ±7.06  | 10.0   | 0.0   | 22.0  |
| • social bullying            | 4.99                            | ±3.80  | 6.0    | 0.0   | 14.0  |
| Total bullying victimization | 21.76                           | ±21.79 | 11.00  | .00   | 74.00 |
| • Physical bullying          | 6.25                            | ±6.16  | 4.50   | .00   | 20.00 |
| • Sexual bullying            | 4.78                            | ±5.42  | 2.00   | .00   | 19.00 |
| • Interpersonal bullying     | 5.62                            | ±5.77  | 2.00   | .00   | 19.00 |
| • Verbal bullying            | 5.11                            | ±4.97  | 3.00   | .00   | 18.00 |

**Table (3):** Distribution of participants regarding victimization and types of personalities.

|                                      | Studied participants<br>(n=312) |                |
|--------------------------------------|---------------------------------|----------------|
|                                      | Number                          | Percentage (%) |
| Bullying victimization               |                                 |                |
| No                                   | 209                             | 67.0%          |
| Yes                                  | 103                             | 33.0%          |
| SCID-II                              |                                 |                |
| Absent                               | 234                             | 75.0%          |
| Narcissistic Personality trait       | 25                              | 8.0%           |
| Antisocial Personality trait         | 18                              | 5.8%           |
| Borderline Personality trait         | 22                              | 7.1%           |
| Passive-Aggressive Personality trait | 8                               | 2.6%           |
| Others                               | 5                               | 1.5%           |

**Table (4):** Types of personalities among the studied participants according to SCID-II.

|                                      | Studied participants<br>(n=312) |       |        |       |     |
|--------------------------------------|---------------------------------|-------|--------|-------|-----|
|                                      | Mean                            | ±SD   | Median | Range |     |
| Narcissistic Personality trait       | 3.60                            | ±1.34 | 4.0    | .0    | 7.0 |
| Antisocial Personality trait         | 4.47                            | ±2.05 | 4.0    | .0    | 8.0 |
| Borderline Personality trait         | 4.99                            | ±2.46 | 5.0    | .0    | 9.0 |
| Passive-Aggressive Personality trait | 4.42                            | ±2.73 | 6.0    | .0    | 8.0 |
| Others                               | 4.55                            | ±2.37 | 4.0    | .0    | 8.0 |

**Table (5):** Beck Suicidal Ideation Scale (SSI) among the studied participants.

|                                    | Studied participants<br>(n=312) |       |
|------------------------------------|---------------------------------|-------|
|                                    | No                              | %     |
| Beck Suicidal Ideation Scale (SSI) |                                 |       |
| Mean± SD                           | 12.42± 8.78                     |       |
| Median                             | 9.0                             |       |
| • Range                            | 0.0- 32.0                       |       |
| Suicidal ideation                  |                                 |       |
| Yes                                | 59                              | 18.9% |

**Table (6):** Association between suicidal ideation or attempts and exposure to bullying in the study sample.

|                   | Not bully victims<br>(N=209) |       | Bully victims<br>(N=103) |       | P-<br>value | OR   | 95% CI         |                |
|-------------------|------------------------------|-------|--------------------------|-------|-------------|------|----------------|----------------|
|                   | N                            | %     | N                        | %     |             |      | Lower<br>limit | Upper<br>limit |
| Suicidal ideation |                              |       |                          |       |             |      |                |                |
| No                | 182                          | 87.1% | 71                       | 68.9% | <0.001      | 3.04 | 1.7            | 5.43           |
| Yes               | 27                           | 12.9% | 32                       | 31.1% |             |      |                |                |
| Suicidal attempts |                              |       |                          |       |             |      |                |                |
| No                | 207                          | 99.0% | 96                       | 93.2% | 0.011       | 7.55 | 1.54           | 37.01          |
| Yes               | 2                            | 1.0%  | 7                        | 6.8%  |             |      |                |                |



**Table(7):** Correlation between socio-demographic characteristics of participants (risk factors) and exposure to bullying in the study sample.

| Items                 | Bullying |       |        |       |      | Test value                | P-value |
|-----------------------|----------|-------|--------|-------|------|---------------------------|---------|
|                       | Mean     | SD    | Median | Range |      |                           |         |
| Age                   |          |       |        |       |      |                           |         |
| 15-16 years old       | 34.64    | 18.77 | 35.0   | 0.0   | 61.0 | z <sub>MWU</sub><br>3.025 | 0.004   |
| 17-18 years old       | 20.50    | 15.88 | 20.5   | 6.0   | 35.0 |                           |         |
| Gender                |          |       |        |       |      |                           |         |
| Male                  | 33.01    | 16.40 | 35.0   | 0.0   | 58.0 | z <sub>MWU</sub><br>2.214 | 0.027   |
| Female                | 28.19    | 19.95 | 30.5   | 0.0   | 61.0 |                           |         |
| Residence             |          |       |        |       |      |                           |         |
| Urban                 | 26.18    | 17.42 | 30.0   | 0.0   | 58.0 | z <sub>MWU</sub><br>3.149 | 0.002   |
| Rural                 | 33.16    | 18.79 | 35.0   | 0.0   | 61.0 |                           |         |
| Education achievement |          |       |        |       |      |                           |         |
| Fair                  | 27.32    | 19.15 | 30.0   | 0.0   | 61.0 | KW=<br>4.254              | 0.119   |
| Average               | 32.72    | 17.62 | 34.0   | 0.0   | 58.0 |                           |         |
| Below average         | 31.97    | 18.92 | 33.0   | 0.0   | 61.0 |                           |         |

**Table (8):** Correlation between types of personalities and bullying behavior in the study sample.

| SCID-II Items                        | Bullying behavior |         |
|--------------------------------------|-------------------|---------|
|                                      | N                 | P-value |
| Narcissistic Personality trait       | 0.475             | <0.001  |
| Antisocial Personality trait         | 0.344             | 0.011   |
| Passive-Aggressive Personality trait | 0.080             | 0.158   |
| Borderline Personality trait         | 0.193             | 0.178   |
| Others                               | 0.081             | 0.154   |

**Table (9):** Correlation between types of personalities and bullying victimization in the study sample.

| SCID-II Items                        | Bullying victimization    |       |                       |       | Chi-Square test              |         |
|--------------------------------------|---------------------------|-------|-----------------------|-------|------------------------------|---------|
|                                      | Not bully victims (N=209) |       | Bully victims (N=103) |       |                              |         |
|                                      | N                         | %     | N                     | %     | Test value (X <sup>2</sup> ) | P-value |
| Absent                               | 177                       | 84.7% | 57                    | 55.3% | 30.10                        | <0.001  |
| Passive-Aggressive Personality trait | 2                         | 1.0%  | 6                     | 5.8%  | 4.742                        | 0.029   |
| Borderline Personality trait         | 7                         | 3.3%  | 15                    | 14.6% | 11.582                       | 0.001   |
| Antisocial Personality trait         | 9                         | 4.3%  | 9                     | 8.7%  | 1.744                        | 0.187   |
| Narcissistic Personality trait       | 12                        | 5.7%  | 13                    | 12.6% | 3.546                        | 0.060   |
| Others                               | 2                         | 1.0%  | 3                     | 3%    | 0.663                        | 0.415   |

**Table (10):** Correlation between types of personalities and suicidal ideation in the study sample.

| SCID-II Items                        | Suicidal ideation |       |     |      | Chi-Square test              |         |
|--------------------------------------|-------------------|-------|-----|------|------------------------------|---------|
|                                      | No                |       | Yes |      |                              |         |
|                                      | N                 | %     | N   | %    | Test value (X <sup>2</sup> ) | P-value |
| Absent                               | 221               | 87.4% | 13  | 5.1% | 105.4                        | <0.001  |
| Borderline Personality trait         | 8                 | 3.2%  | 14  | 5.5% | 27.8                         | <0.001  |
| Passive-Aggressive Personality trait | 2                 | 0.8%  | 6   | 2.4% | 13.3                         | <0.001  |
| Antisocial Personality trait         | 8                 | 3.2%  | 10  | 4.0% | 14.28                        | <0.001  |
| Narcissistic Personality trait       | 12                | 4.7%  | 13  | 5.1% | 17.13                        | <0.001  |
| Others                               | 2                 | 0.8%  | 3   | 1.2% | 3.203                        | 0.074   |

**DISCUSSION**

Data regarding bullying behavior among the chosen students were gathered using the Bullying Behavior Scale. The average overall scale of bullying behavior was 30.07± 18.73.

The mean physical bullying had a mean of

3.68± 2.82, the mean verbal bullying had a mean of 11.66± 5.81. The average psychological bullying was 9.74± 7.06, while the average social bullying was of 4.99± 3.8.

We measured the amount of bullying

exposure among a subset of students using the bullying victimization scale; the mean total bullying victimization in our study was  $21.76 \pm 21.79$ . The average amount of victims of physical bullying was  $6.25 \pm 6.16$ , while the average amount of victims of sexual bullying was  $4.78 \pm 5.42$ . The interpersonal bullying victimization had a mean of  $5.62 \pm 5.77$  and the verbal bullying victimization had a mean of  $5.11 \pm 4.97$ . 103 out of 312 (33%) students were victims of bullying.

Students may engage in bullying as victims or bullies themselves. Research by Koyanagi et al. indicates that bullied individuals are more likely to experience mental health issues. In certain LMICs, bullying victimization throughout adolescence is very common [25]. According to the findings of the study by Fei et al., relational bullying was comparatively rare and its frequency varied depending on the circumstances, while verbal and physical victimization occurred at quite high levels [26]. Also, Tan et al. [27] showed that as teenagers' ages fell, so did the frequency of victimization. This reduction by age may be related to youth's age-related social development adaptations or to the equalization of physical proportions and as a result [27]. Bullying that is physical tends to decrease, whereas bullying that is relational and verbal tends to rise. Bullying is more common to happen to boys than to girls; bullying occurs more frequently verbally [28]. As predicted by Klomek et al., traditional bullying victimization was associated with

mental health issues exclusively in females once baseline mental health was taken into account. Previous studies have discovered that the long-term effects of traditional bullying victimization on mental health varies for boys and girls [14].

Additionally, we discovered that bullying was statistically significantly correlated with age (greater in those aged 15 and 16), gender (higher in males) and location (rural versus urban). There was no statistically significant correlation found between academic success and bullying. Hertz et al. found a statistically significant correlation between bullying and age, which is consistent with our findings. Additionally, they discovered that 27% of teenagers reported being bullied at school and online. [29]. A plausible interpretation for these results could be that men are more susceptible to bullying since they are socially expected to be successful and to have strong self-esteem [30].

Regarding suicidality, we used Beck Scale (BSS) to evaluate the presence of suicidal ideation. The total SSI score had a mean of  $12.42 \pm 8.78$  and ranged from 0 to 32.59 out of 312 (18.9%). Suicidal thoughts were reported by students. Because 32 out of 59 adolescents who had suicidal thoughts were also victims of bullying, we discovered a statistically significant correlation between bullying victimization and suicide ideation. Furthermore, a statistically significant correlation was observed between bullying and suicidal attempts, with 7 out of 9 students

reporting having attempted suicide being victims of bullying.

Suicidal behavior and bullying victimization have been well-established during the past 20 years. A statistically significant correlation was found between bullying and suicidal ideation and attempts in a systematic review by Klomek et al. that examined the relationship between bullying victimization and suicidality in the general youth population. The odds ratios (ORs) ranged from 1.4 to 10.0 in cross-sectional studies and from 1.7 to 11.8 in longitudinal studies [14].

The Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II) was carried out in our study to evaluate the selected students' personality problems. The results indicated that 8% of students had narcissistic personality traits, 5.8% had antisocial personality traits, 7.1% had borderline personality traits, 2.6% had passive-aggressive personality traits and 1.5% had other personality traits based on the distribution of personality disorders.

Bullying behavior with antisocial and narcissistic personality traits showed a positive (significant) association. However, bullying victimization was much more common among students who had borderline and passive-aggressive personality traits.

Bullying has been connected to personality qualities that indicate antisocial tendencies, such as increased narcissism linked to psychopathy, low agreeableness, low self-

consciousness, low self-discipline, high impulsivity and high excitement seeking [31].

Cowie and Jennifer found a connection between bullying behavior and narcissism, noting that narcissistic people are often aggressive, exhibitionistic, highly competitive and self-centered, lacking empathy and manipulative in their interpersonal relationships [32].

Prior genetic research on bullying behavior mostly examined aggressive and antisocial behaviors. Nonetheless, this research contributes to our understanding of the hereditary aspects of bullying as an aggressive and antisocial behavior [33].

Suicidal ideation was significantly higher in students with borderline personality trait (highest percentage), passive-aggressive trait, antisocial personality trait and narcissistic personality trait.

Although there are variations in empirical results regarding the relative significance of the various pathological personality traits associated with borderline personality disorder (BPD), the notion that individuals with BPD are more likely to exhibit suicidal thoughts and behaviors is still widely acknowledged [34].

Consistent with our results, Auerbach et al. have suggested that high levels of impulsivity, a hallmark of borderline personality, could account for some teenagers' suicide attempts without prior suicidal ideation [35].

Accordingly, Blasco et al. discovered that narcissistic personality traits are linked to

lower levels of impulsivity and, as a result, lower rates of serious suicide attempts [36]. Additionally, despite the fact that suicidal thoughts and actions are unrelated and that non-suicidal self-injury (NSSI) is a strong predictor of suicide behaviors, Andover et al. discovered a correlation between narcissistic personality traits and NSSIs but not suicidal attempts [37].

In line with several previous cross-sectional and longitudinal studies, Koyanagi et al. found that bullying victimization was an independent risk factor for suicidal behaviors among adolescents in low- and middle-income countries (LMICs). This suggests that the association between bullying and suicidal behaviors may be a worldwide phenomenon [25].

Interestingly, being the victim of bullying can also result in suicide acts because of internalized behaviors like shame, social exclusion, and depression that progressively make it harder for victims of bullying to deal with stressors. [38].

Willem et al. discovered a statistically significant correlation between bullying and suicide ideation and attempts, which is consistent with our findings. They speculated that this result might be connected to the fact that these teenagers are more likely to experience bullying, struggle more with emotion control, have lower interoceptive awareness, and are more likely to experience suicidal thoughts [39].

As was the case with traditional bullying, suicidal thoughts may only arise from more severe and advanced mental health issues and/or following prolonged, long-term exposure to bullying. To have a deeper grasp of these relationships, more research is required [40, 41].

As previous research has shown, bullying victimization is linked to low self-esteem and lowered self-worth, depressive symptomatology and feelings of hopelessness and loneliness. These factors collectively considerably raise the likelihood of suicidal thoughts [42].

The findings of Espelage et al., who discovered a statistically significant correlation between bullying and suicidal ideation and attempts, are consistent with our own. Additionally, they showed that verbal bullying had less of a detrimental impact on suicidality than physical bullying. [43]. Additionally, in line with numerous other studies, Reed et al. discovered evidence supporting the correlation between bullying victimization and suicidal ideation as well as suicide attempt [44].

Furthermore, Kim et al.'s review of 37 studies on the connection between bullying victimization and suicide revealed that bullied teenagers were more likely to experience suicidal thoughts and attempt suicide [45].

## CONCLUSIONS

In low- and middle-income countries (LMICs), teenage suicide is a serious public health concern. Children who are bullied are

more prone to act suicidally. Bullying tends to rise throughout puberty and is a common occurrence in schools. The likelihood of suicidal thoughts and behaviors among secondary school students is increased when they become victims of bullying. Furthermore, children who use social media more frequently are also more likely to experience bullying in all of its manifestations. Children are now more likely to be bullies or victims of bullying due to the several types of cyberbullying, including peer pressure, coercion and physical or verbal abuse. Suicidal ideation was statistically significantly correlated with bullying victimization at all frequencies and types.

We suggest using our research as a guide when presenting the most recent suggestions to make sure that any suicide thoughts or attempts among the students are caught early during this critical period. Furthermore, developing and evaluating a range of suicide prevention programs requires a deeper understanding of the suicide risk factors in this population. More research should also be done on effective anti-bullying programs and large-scale longitudinal studies that focus on the immediate and long-term impacts of teenage bullying victimization.

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