Self-Harm Behavior among Adolescent Students in Higher Secondary Schools in Kathmandu Valley, Nepal

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ABSTRACT

Introduction: A sizable amount of adolescents do self-harm, but most cases do not reach medical services as well as the attention of college administration and parents, making such a study essential to be carried out. The prevalence of suicidal thoughts and deliberate self-harm behavior remains largely unexplored. In this study, self-harm behaviors among adolescents studying at higher secondary schools were evaluated in selected schools of Kathmandu Valley in Nepal.

Methods: The purposive sampling of five different higher secondary schools in the Kathmandu valley were taken as a study area and the census was done to select the sample population of the selected higher secondary school. A cross-sectional analysis of self-administered questionnaire data was collected after taking informed and assent consent from participants (n= 243)14-19 years old.

Results: The prevalence of lifetime self-harm was approximately 55.6%. The most commonly used self-harm method was scratching the skin intensely (14.5%) and was followed by carving words or other marks on the skin (14.0%). Of those who reported self-harm, 34.8%, intentionally hurt themselves to get the attention of others and 17.8% to punish themselves. Concurrent alcohol consumption (OR=3.660), cigarette smoking (OR=2.50), and depression (OR= 3.01) were associated with a significantly increased risk of self-harm. Similarly, problems with various social relationships were associated with the risk of self-harm. 68.1% knew other people harming themselves before they were involved in self-harm and 19.6% were influenced by family, friends, and media to harm themselves.

Conclusion: Self-harm behaviors are common among adolescents. Although the majority of self-harm behavior is not accompanied by a desire to die (serious attempt), all self-harm regardless of motivation is associated with an increased risk of deliberately harming when it is carried out repeatedly.

Keywords: Self-harm, Deliberate harm, Suicidal thoughts, Adolescence

INTRODUCTION

Adolescence is a period filled with changes, both physical and emotional. Many are able to navigate this turbulent period with great success, however, for some, there are unexpected challenges and difficulties that may lead to engaging in self-harm. Self-harm is an important public health issue that has been defined as “the direct and deliberate destruction of one’s own body tissue with suicidal intent, such as cutting or burning oneself, biting the skin, carving skin, banging head against the wall and benches.” The behavior usually begins early in adolescence, but the severity and frequency can increase with age with an estimated prevalence rate as high as 18%, or two out of 10 adolescent.2

The term deliberate self-harm might not necessarily mean a suicide attempt and also engaging in self-harm might not mean that someone wants to die or kill themselves. Mostly, many people exhibit deliberate self-harm as a method used to cope up with difficult situations or painful feelings.3 Self-injurious behaviors (SIB) are those in which an individual inflicts harm to his or her body purposefully, for reasons not recognized or sanctioned socially and without the obvious intention of committing suicide.4 Although suicide is uncommon in adolescents compared with non-fatal self-harm, it is always a tragic outcome, and prevention of suicide in young people is understandably a focus of national strategies for suicide prevention.

Self-harm is often viewed by professionals as a symptom of emotional distress or stress and is seen as an unhealthy way...
to cope with emotional pain, intense anger, or frustration. For those who self-harm, the action typically brings a perception of calm or a sense of relief from stress, followed by a sense of guilt and shame, which brings the return of the painful emotions. Adolescents who self-harm with cutting often report feeling little to no pain while cutting, and that the act can quickly become addictive.\textsuperscript{2,5}

With the turn of the century, self-harm has been on the rise among adolescents, with girls most often reporting the highest rate of self-harm\textsuperscript{3}, in addition to being at higher risk of attempting suicide\textsuperscript{5}. Research has shown that there is an ethnic difference in self-harm being black females are most likely to self-harm than Asian males\textsuperscript{4}. Some researchers suggest that 70% of teenagers who self-harm had attempted suicide and 55% of these teenagers reported multiple attempts. For many, the act of self-harm is not meant to be a suicide attempt, but rather it is done to stop suicidal ideations or prevent them from actually attempting suicide.\textsuperscript{5,6}

Deliberate self-harm is a significant problem among adolescents, although it is hard to predict, and often appearing out of the blue, there is evidence to suggest that mental health problems, impulsivity, self-esteem and stress in adolescent’s lives are contributory factors. Self-esteem (in relation to peers, school, family, sports, body image, and global self-worth) has also been related to suicidal thoughts.\textsuperscript{5-9} Self-harm is strongly linked to stress factors,\textsuperscript{10} including difficulties in familial relationship,\textsuperscript{11-13} poor relationships with friends and partners\textsuperscript{12,14} and perceptions of poor academic performance.\textsuperscript{15}

Self-harm is about more of concern because of the immediate physical harm that it causes, but also because it associates with psychological distress, an elevated risk of suicide.\textsuperscript{16} Most self-harm behaviors in adolescents usually do not come to the attention of medical services, but most research conducted on self-harm in our country is based on cases coming to the emergency department of hospitals and because of the actual prevalence of self-harm, motives, methods, risk factors and help-seeking behavior among adolescents is difficult to predict. Suicide is higher in people who are engaged in self-harm than those who are not. The purpose of this study was to assess the self-harm behavior among higher secondary adolescent students in the context of Kathmandu Valley.

METHODS

Study design: A cross-sectional analytical study design was used to assess self-harm, harm behavior among adolescent students.

Study setting: Higher secondary schools in Kathmandu Valley.

Study sampling: The purposive sampling technique was applied for selection of five different higher secondary schools in Kathmandu Valley. Census was done to select the sample size from each selected higher secondary school (students of class 11 and 12). Expected sample size (n= 243) was calculated (critical value on standard normal distribution at 95%, prevalence at 18%, and taking marginal error of 0.05). Variables: Demographic variables, Social variables, Lifestyle related variables, Psychological variables, media, peer, family friends (that influence the study) were taken to characterize the self-harm behavior.

Data collection tools and techniques: Self-administrable questionnaire was used for data collection. The standard tool, i.e. Beck’s Depression Inventory\textsuperscript{17} and Rosenbeg’s Self-Esteem Scale\textsuperscript{18} was also adopted and translated to the Nepali version and pretested for necessary amendment (Calculated Cronbach’s alpha value = 0.76).

Data analysis: The filled questionnaires were thoroughly checked for completeness and accuracy on the same day of data collection. Descriptive statistics and the association between self-harm behavior and the explanatory variables were performed using Statistical Packages for Social Sciences (version 16.0).

Ethical considerations: Ethical approval (ref.no.200/074/75) was taken from the Institutional Review Committee(IRC) of Pokhara University Research Centre (PURC), and permission was taken from the Educational Development and Coordination Unit, District Administration, Kathmandu (ref. no. 6350) and from the selected high schools. Informed and assent consent was taken prior to data collection.

Operational Definition

Self-Harm- Self-harm refers to an act in which an individual inflicts harm to his or her body purposefully, for reasons not recognized or sanctioned socially and without the obvious intention of committing suicide.

Adolescent: In this study, adolescents are considered as individuals between the age group of 13-19 years. The study categorizes age into early adolescence (14-15 years), middle adolescence (16-17 years), and late adolescence (18-19 years).

RESULTS

The majority of the participants (67.1%) belonged to aged group 16-17 years old, and more than half of them (52.3%) were female. Similarly majority of the participants (68.7%) were from the Non-Science Faculty (Table 1).

Lifetime prevalence of self-harm among adolescents was found to be 55.6%,which indicates that 135 of 243 participants were involved in some kind of self-harm behavior at least once in any period of their life, where the remaining participants had never been engaged in any kind of self-harm throughout their lifetime.

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It showed that self-harm behavior seem starts from early age (49% recalled it at the age of 14 years), 49% and 52.6% of participants (n = 135) were involved in self-harm recently in the past month (Table 2).

According to Table 3, the majority (14.5%) adolescents harmed themselves by scratching their skin intentionally to the point it cut and blood appeared. Other than this carving names and other words into skin (14%), preventing wounds from healing (12.3%) and cutting skin (11.7%) were the most frequently chosen methods of self-harm among adolescents. Moreover, biting own skin (5.1%) and swallowing dangerous substance (6.7%) were found to the least preferred methods of self-harm.

Table 4 shows the reason behind the most recent hurt. It can be concluded from the figure that, the majority of adolescents (34.8%) intentionally hurt themselves to get attention. Similarly, 17.8% of adolescents committed self-harm to punish themselves and 14.1% hurt themselves to get relief from a terrible state of mind and to find out if someone loved them. Moreover, among the attempts of self-harm, 4.4% of adolescents seriously tried to kill themselves.

Similarly, 68.1% knew other people harming themselves before they were involved in self-harm. Of these, 21 (22.6%) said they had somebody in their family harming themselves, 55 (59.1%) had friends involved in self-harm and 18.3% saw self-harm behavior in the media.

However, when asked if they were influenced by the self-harm behavior of their family, friends or media, the majority of 80.4% had negative and others had a positive answer.

About 41.5% of the adolescents also admitted that they felt better after committing self-harm, whereas 37.8% and 20.7% felt worse than before and felt the same after conducting self-harm, respectively, (Table 4).

The study also revealed that the majority of self-harmers (69.6%) did not have help-seeking behavior. 60.7% of participants felt that life is not worth living, and also 72.6% of participants admitted that they seriously wanted to kill themselves on any occasion they had hurt themselves on purpose.

The study also showed there is a significant association (p = 0.02, < 0.05) between self-harm and problems in social relation. The risk of self-harm in adolescents who have problems in their social relationship was approximately five times higher than in those who have healthy social relationships (Table 5). The relationship with family (p = 0.04, OR =2.62), with friends (p = 0.000, OR = 4.95) and with boyfriend/girlfriend (p = 0.000, OR = 4.7) were also found to be associated with self-harm behavior. Associated factors with alcohol consumption (p = 0.02, OR = 3.660) and cigarette smoking (p = 0.021, OR = 2.50) also significantly contributed the adolescents towards self-harm.

There was a significant association(p = 0.000, < 0.05) between self-harm behavior and depression as well as between self-harm behavior and self-esteem (p = 0.000, < 0.05) (Table 5).

**DISCUSSION**

The study shows that more than half of the participants had a lifetime prevalence of self-harm. This result is in contrast to that one illustrated by Lundh LG et al. where 65.9% (N=123) of the adolescents reported having engaged in some kind of deliberate self-harm at least once. The reason for this contrast might be due to the difference in sample sizes of both studies. The prevalence is much higher than in studies carried out in other countries. This might be because adolescents today are more comfortable in sharing their experiences and problems than those in the past.

Moreover, this study showed no significant association between self-harm behavior and the sex of the respondents (p= 0.226, > 0.05). This finding is similar to the study conducted in Sweden which also concluded no gender differences in the prevalence of self-harm. However, this finding differs from the study conducted in England, which concluded deliberate self-harm was more common in females than it was in males (OR=3.9).

The difference in this result might be due to the increase in the involvement of males in such activity due to their impulsive nature. Self-harm is contagious, and peer influence might be the reason behind the increase in the male population in self-harm. Moreover, the mean age of first self-harm was found to be 14.5 years in this study. Similar results were illustrated in another study conducted in Victoria, British Columbia, which showed that the mean age of onset of self-harm was 15.2 years. Both the results are in line with a previous study by John Peterson et al. and provide additional evidence that self-harm typically begins in mid-adolescence.

In addition to that, this study examined the methods of self-harm used or preferred by adolescents. It was found that the majority, i.e. 14.5% of adolescents harmed themselves by scratching skin intentionally to the point it cut and blood appeared. Also, carving names and other words, into skin (14%), preventing wounds from healing (12.3%) and cutting skin (11.7%) were the other chosen methods of self-harm. This result is contrasts with various other studies. Ystgaard M and other’s showed cutting (74.1 %) as the preferred method and a study conducted in Western Nepal by Sonu H. Subba et.al. underlined poisoning
Furthermore, while assessing the similarity might be because of the immaturity of an adolescent regarding love and relationships. High levels of emotions can cause an adolescent to experience low self-esteem, devastation and depression when the relationship ends and might push them toward self-harm.

In addition to that, this study indicated that self-harm is associated with substance abuse. Alcohol consumption was found to be associated with self-harm (p=0.02, OR = 3.6), which was similar to the results given by Allison et al. Moreover, cigarette smoking was also found to be a contributing factor for self-harm (p=0.021, OR=2.5). This result was similar to the one shown by Rory C. O’Connor et al. Adolescents are very curious and can easily get involved in ill habits like smoking and alcohol consumption, which can increase their risk of committing self-harm. Hence, it is important for parents, guardians and teachers to responsibly satisfy the curiosity of an adolescent regarding substance abuse and prevent them from getting developing such ill habits.

Moreover, this study states that, there is a significant association between self-harm and depression. The results indicate that the risk of self-harm is three times higher in individuals who have low self-esteem than in those who have normal self-esteem (OR=3.01). This result is similar to those of various studies. This similarity might be because low self-esteem makes a teen extremely vulnerable. A child with low self-esteem will be more likely to having negative thoughts about their worth and value as a person and hence they might be driven to harm themselves in the hour of desperation.

Likewise, according to this study, there is a significant association between self-harm and depression. Moreover, the p-value is 0.000, which indicates that these two variables are highly significant. Various other studies have also highlighted the association between self-harm and depression. The similarities in these results indicate the urgent need for the development of innovative interventions and strategies that assess depression levels among adolescents. Additionally, a friendly environment should be maintained in order to boost the self-esteem of adolescents.

CONCLUSION

The study marks a needed step forward in assessing deliberate self-harm behavior (DSH) prevalence and practices among adolescents. The results of this study suggest that DSH among adolescents is common and usually starts in the early stage of adolescence. If DSH is identified, the type and frequency should be further evaluated, and adolescents should be assessed
for associated risk factors. Identification of mental health and/or behavioral difficulties and information about adolescent’s reasons for DIB could also form the basis for screening programs to aid the teachers and health care providers understand the behavior in context and determine a suitable approach.

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CONFICT OF INTEREST

None Declared.

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### Appendix

#### Table 1: Socio-Demographic Characteristics

| Characteristics | Categories          | Frequency | Percentage (%) |
|-----------------|---------------------|-----------|----------------|
| Age (Years)     | Early (14-15)       | 5         | 2.1            |
|                 | Middle (16-17)      | 163       | 67.1           |
|                 | Late (18-19)        | 75        | 30.8           |
|                 | Mean                | 117       | 45.7           |
| Gender          | Male                | 111       | 45.7           |
|                 | Female              | 135       | 54.3           |
| Religion        | Hindu               | 196       | 80.7           |
|                 | Buddhist            | 34        | 14.0           |
|                 | Christian           | 9         | 3.7            |
|                 | Others              | 4         | 1.6            |
|                 | Brahmin             | 64        | 26.4           |
|                 | Chettiar             | 58        | 23.9          |
| Ethnicity       | Janajati            | 96        | 39.5           |
|                 | Dalit               | 16        | 6.6            |
|                 | Others              | 9         | 3.7            |
| Faculty         | Science             | 76        | 31.3           |
|                 | Non-Science         | 167       | 68.7           |
| Total           |                     | 243       | 100%           |

#### Table 2: Age at first self-harm

| Age in years | Frequency (n = 135) | Percentage (%) |
|--------------|---------------------|----------------|
| 9            | 1                   | 0.7            |
| 12           | 2                   | 1.5            |
| 13           | 27                  | 20.0           |
| 14           | 49                  | 36             |
| 15           | 33                  | 24.4           |
| 16           | 17                  | 12.6           |
| 17           | 5                   | 3.7            |
| 18           | 1                   | 0.7            |
| Total        | 135                 | 100            |

Mean = 14.5 ± 1.23

#### Table 3: Different methods used for self-harm

| Self-harm methods used | Frequency of methods used | Total (%) |
|-----------------------|---------------------------|-----------|
|                       | Once                      | More than once | Many times |
| Cutting skin          | n                         | 33         | 15         | 4  | 11.7 |
|                       | %                         | 13.6       | 6.2        | 1.6 |       |
| Burning skin          | n                         | 21         | 8          | 4  | 7.3 |
|                       | %                         | 8.6        | 3.3        | 1.6 |       |
| Biting skin           | n                         | 11         | 9          | 3  | 5.1 |
|                       | %                         | 4.5        | 3.7        | 1.2 |       |
| Banging head and hands| n                         | 28         | 10         | 5  | 10.0 |
|                       | %                         | 11.5       | 4.1        | 2.1 |       |
| Preventing wounds from healing | n | 30         | 11         | 14 | 12.3 |
|                       | %                         | 12.3       | 4.5        | 5.8 |       |
| Scratching your skin intensely | n | 40         | 13         | 13 | 14.5 |
|                       | %                         | 16.5       | 5.3        | 5.3 |       |
| Carving words or other mark | n | 27         | 25         | 10 | 14.0 |
|                       | %                         | 11.1       | 10.3       | 4.1 |       |
| Sticking sharp object in the skin | n | 26         | 12         | 2  | 9.0  |
|                       | %                         | 10.7       | 4.9        | 0.8 |       |
Swallowing dangerous substances

| n  | 24 | 2 | 4 | 6.7 |
|----|----|---|---|-----|
| %  | 9.9| 0.8| 1.6| 6.7 |

Overdosing

| n  | 24 | 16 | 2 | 9.4 |
|----|----|----|---|-----|
| %  | 9.9| 6.6| 0.8| 9.4 |

Table 4: Reasons for self-harm and feelings after self-harm

| Characteristics | Frequency | Percentage (%) |
|-----------------|-----------|----------------|
| Reasons for self-harm |           |                |
| Show their desperation | 9 | 6.66 |
| To get attention | 47 | 34.8 |
| To punish themselves | 24 | 17.8 |
| To frighten someone |           |                |
| To get relief from terrible state of mind | 19 | 14.1 |
| To find if someone loved them | 19 | 14.1 |
| To get serious attempt | 6 | 4.4 |
| Feelings after self-harm |           |                |
| Better than before | 56 | 41.5 |
| Same as before | 28 | 20.7 |
| Worse than before | 51 | 37.8 |

Table 5: Association of self-harm behavior with different variables studied

| Characteristics | Self-harm | p-value | OR (95% CI) |
|-----------------|-----------|---------|-------------|
|                 | Yes  | No     |             |
| Problems in social relation | 65 (59.09) | 45 (40.90) | 0.000 | 4.574 |
| Depression category |             |         |            |
| Normal | 23 (19.49) | 95 (80.51) |           |        |
| Mild-mood disturbance | 7 (17.07) | 34 (82.92) |           |        |
| Borderline clinical depression | 10 (40) | 15 (60) |           |        |
| Moderate depression | 22 (0.55) | 18 (0.45) |           |        |
| Severe depression | 9 (47.36) | 10 (52.63) | 0.000 |        |
| Self-esteem |             |         |            |
| Low self-esteem | 40 (44.44) | 50 (0.55) | 0.000 |        |
| Normal self-esteem | 30 (20.97) | 113 (79.02) |           |        |
| High self-esteem | 1 (10) | 9 (90) | 0.000 |        |
| Substance Use |             |         |            |
| Cigarette Smoking | 26 (68.42) | 12 (31.57) | 0.000 | 2.50 |
| Alcohol Consumption | 61 (60.39) | 40 (39.60) | 0.000 | 3.660 |