Deliberate Self-Poisoning in Children

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This prospective study was aimed to analyze the nature of and the factors associated with deliberate self-poisoning in children below the age of 12 years. Children referred to the Child Guidance Clinic for evaluation after recovery from the effects of poisoning during the five-year period between 1999 and 2003 formed the subjects of the study. The children were evaluated for stress factors, psychiatric disorders and the nature and mode of deliberate self-poisoning. Deliberate self-poisoning constituted 0.9% of total admissions due to poisoning. There were 10 boys and 2 girls between the ages of 9 and 12 years. Both acute and chronic stress in the family and school were associated with deliberate self-poisoning. Majority of them had psychiatric disorders. Rat poison (zinc phosphide) was the commonest poison used. Two children got the idea from watching TV serials.

Key words: *Attempted suicide, Deliberate self-poisoning, Stress.*

LITERATURE on deliberate self-poisoning in children is scarce. Few studies available have concentrated on adolescents above the age of 12 years. There are virtually no Indian studies on this subject. The factors associated with deliberate self-poisoning in pre-pubertal children may not be the same as those in older adolescents. Children in the pre-pubertal age get more parental attention. They are less likely to have the cognitive and practical ability to plan and carry out the act of deliberate self-poisoning(1). It is important to identify children with deliberate self-poisoning early because there is more chance for repetition and suicide in later life(2,3). The present study was undertaken to analyze the nature of and the factors associated with deliberate self-poisoning in children below the age of 12 years.

Subjects and Methods

This is a prospective study conducted at the Child Guidance Clinic (CGC) of the Department of Pediatrics, Medical College, Calicut which is a referral centre for the four northern districts of Kerala. All children admitted with suspected self-poisoning are referred to the CGC after they recover from the effects of poisoning, for child psychiatry evaluation. Children below 12 years referred to the CGC with history of deliberate self-poisoning between January 1999 and December 2003 formed the subjects of this study.

Inclusion criteria: The case was included only when both the parents and the child agreed that the child consumed the poisonous substance intentionally.

Exclusion criteria: Children with accidental or homicidal poisoning and children with mental retardation were excluded. Seguin Form Board test(4) was used to identify the IQ level.

Children and their parents were interviewed together and separately. At the time of evaluation details regarding age, sex,

family environment, school environment, stresses and nature of poisoning were documented. Psychiatric diagnosis was made based on DSM IV diagnostic criteria(5). In the proforma questions to elicit the actual intent to suicide were framed using the concerned part of the National Institute of Mental Health Diagnostic Interview Schedule for Children-Child informant (Interview about self)(6). Children who attempted suicide were identified in accordance with the definition of attempted suicide by the National Institute of Mental Health Task Force(7). According to this definition, self-injurious behavior is considered as suicide attempt if it is associated with the psychological intent to end one's own life. Factors associated with attempted suicide in children were analyzed separately. The total number of cases admitted with poisoning was obtained from the in-patient register at the Department of Pediatrics.

Acute stress was arbitrarily defined as stress that occurred during the previous one-month period (exam failures, death or separation of loved ones, conflicts with parents, teachers or siblings) and chronic stress as long-term on going stresses. (Learning problems and adjustment problems at school, financial problems in the family, ongoing conflicts with parents or siblings, parental conflicts, *etc.*). Depending on the source, stress factors were again grouped as family stress (death of a parent, mental illness in a parent, financial problems, conflicts among parents, parental alcoholism, divorce and separation), Parent stress (punitive parent, conflict with parents), School stress (examination failures, poor academic achievement, change of school, general adjustment problems at school), Peer stress (bullying by classmates, being ignored by friends, conflicts with class mates) and Teacher stress (punishment, adverse comments, being ignored)(8).

Results

There were 12 children with deliberate self-poisoning referred to the CGC during the study period. They formed 0.9% of total poisoning cases admitted to the Department of Pediatrics. (Total number of poisoning cases were 1327). Ten (83%) were boys and 2 (17%) were girls. The youngest child was a 9-year-old boy and the others were between 10 and 12 years of age.

Seventy five per cent(9/12) of children had acute stress contributing to deliberate self-poisoning. Six (50%) children had acute stressful episodes in addition to on going long-term stress.

Stress in the family was present in 6 (50%) children. Family stress noticed included financial problems, death of a parent, mental illness in a parent and parental disharmony. Stress in the form of arguments with parents prior to the act and punishment by parents were present in 4 (33%) children. (Parent stress) (*Table I*).

Eight (67%) children had stress at school. The stress factors related to school were poor academic achievement and examination failures, change of school, and teacher stress (punishments, sarcastic comments about the student, ignoring the student in the class) and Peer stress (conflicts with classmates, bullying by classmates) (*Table I*).

Family stress alone without school stress was present in 2 (17%) children only and 50% of children with school stress also had stress in the family.

The commonest psychiatric disorder observed was depressive episode followed by Conduct disorder (CD)/Oppositional Defiant Disorder (ODD). 6(50%) children were suffering from major depressive episodes and 3(25%) children had features of CD/ODD. No

psychiatric disorder could be identified in 2 children in whom the self- poisoning was impulsive. In one child it was attention-seeking behavior for school change. One child had Obsessive Compulsive Disorder and Tics disorder with secondary depression. One child with CD had co-morbid Attention Deficit Hyperactivity Disorder.

Rat poison (7; 58%) was the commonest substance used for self- poisoning followed by, benzodiazepines (2; 17%). One child each consumed Organophosphorous Pesticide, Insect repellant and Kerosene.

The act was preplanned in 5 children and impulsive in 7 children. There were no real life models but two children got the idea from watching TV serials.

The act of self-poisoning was attempted suicide in 7 (58%) children. When these children were analyzed separately it was found that all of them were above the age of 11 years and 5 (71%) of them were suffering from acute depressive episodes. The act was pre-planned in 3 (42%) children and impulsive in 4 (58%) children. Suicidal ideation in the previous one-month period was present in 5 (71%) children who were also depressed.

TABLE I–*Various Types of Stresses in Children with Deliberate Self Poisoning*

Stress in the family	No.	%
Conflict with parent	4	33
Death of a parent	3	25
Financial problems	2	17
Parental disharmony	1	8
Mental illness in the father	1	8
Over all stress in the family	6	50
Stress in the school		
Academic problems	6	50
Examination failure	4	33
Conflicts with teachers (punishment, sarcastic comments, ignoring the student)	5	42
Peer stress (bullying by classmates, conflicts with classmates)	2	17
Over all stress in the school	8	67

Discussion

A 1991 Indian study on poisoning in children below 12 years reported the incidence of suicidal poisoning as 0.4% of all cases of poisoning(9). In the present sample the incidence has increased to 0.9%. This could be attributed to the changes in the family, school and social environment and must be analyzed in the background of the increasing trend in adult suicide(10).

Deliberate self-harm in children below 12 years is reported to be very rare(3,11). When the retrospective data on childhood poisoning from eight regional hospitals in India was reviewed in 1998, it was found that suicidal poisoning occurs only above the age of 12 years(12). On the other hand Singh, *et al.*(13) found that poisoning in children below 11 years is likely to be accidental and in children above 11 years it is more likely to be adult type of deliberate self poisoning. The age pattern of our sample is comparable to these findings. In our sample all children except two were above 11 years.

The male:female ratio in the present sample was 5:1. Studies on deliberate self-harm in adolescents have reported higher incidence in females(3,11,14). The reason for the male preponderance in our sample could not be explained. Male preponderance was observed in the above-mentioned Indian studies also(9,13). One reason may be that parental expectations and subsequent stress in educational and other avenues in boys is much more than that in girls in Indian families.

The association between stress and deliberate self-harm in adolescents is well

Key Messages

- Deliberate self- poisoning occurs in children and it is associated with stress in the family and school.
- Majority of children with deliberate self- poisoning has psychiatric disorders like depression.
- Early detection and management of psychiatric disorders is important for prevention of deliberate self-poisoning in children.

documented(8,11,14). Both acute and chronic stress was found to be associated with suicidal behavior in adolescents(8). In the present sample all children had either acute or chronic stress and half of them had acute stressful experiences in addition to on going stress. It can be assumed that acute stressful events on the background of chronic stresses precipitate the act of deliberate self-poisoning.

We have found that school-related stress was strongly associated with deliberate self-poisoning in children. The association between school stress and self-harm behavior in children was noticed earlier(14). In the present day society in India children are subjected to enormous pressure regarding education. High parental expectations and parental behaviors contribute to school-related stress(11).

The finding that 50% of children with deliberate self-poisoning had stress in both family and school highlights the importance of family support in alleviating stress. It can be assumed that lack of family support increases the chance of deliberate self-harm by children.

Majority of children in our sample had psychiatric disorders like depressive disorder and conduct disorder/oppositional defiant disorder. Even though these children had symptoms several months prior to the act of self-poisoning none of them received any professional help. The parents did not identify the symptoms nor did they recognize the gravity of the symptoms. Early recognition and treatment of mental illnesses is important for prevention of suicide because untreated and under-treated psychiatric disorders were found to contribute to attempted suicide in adolescence(1).

Children can get the idea of self-poisoning from real life models or from the media(14,15). In our sample there were no real life models, but 2 children got the idea by watching TV serials. The influence of visual media on the behavior of children needs in-depth evaluation.

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