Deliberate self-harm in adolescents: hopelessness, depression, problems and problem-solving

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This study looks at a group of adolescents who have taken overdoses and examines the type and severity of their problems. It measures hopelessness and depression, and whether these adolescents feel their parents understand them. The study also examines the ways in which these adolescents perceive their overdose as a problem-solving mechanism.

The study shows that hopelessness in adolescent self-harm is an important independent variable over and above the level of depression. The adolescents report a wide range of problems with severe and significant problems particularly in the area of family relationships and school.

Finally, the paper postulates links between severity of problems, hopelessness and deficits in problem-solving abilities, and suggests areas for potential therapeutic interventions.

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Introduction

Since the late 1960s non-fatal deliberate self-harm (DSH) in adolescence has greatly increased (Kreitman and Schreiber, 1979). This increase slowed during the mid 80s but more recently has started to increase again (Hawton and Fagg, 1992). There have been advances in the understanding of this behaviour, although some aspects remain uncertain. Consequently, management is often difficult, particularly in an area where clinical resources are scarce.

DSH is associated with significant morbidity and mortality in this age group. Various studies have reported the risk of repetition as between 12-40% (Hawton, 1986), the greatest risk of repeat being within the first few months of an attempt. Otto (1972) found 4-3% of adolescent suicide attempters in Sweden had died by suicide during the subsequent 10-15 years, and Goldacre and Hawton (1985) reported a figure of 0.24% for the Oxford region during a mean follow-up period of 2.8 years.

Reduction in the rate of suicide has recently been highlighted as a target in the Government White Paper "The Health of the Nation" (Secretary of State for Health, 1991). Prediction and prevention of suicide in this high-risk group remains a poorly understood area. A reas of possible interest are the concepts of hopelessness and problem-solving.

It has been proposed (Stotland, 1969; Beck et al., 1975) that an individual's sense of hopelessness can be defined in terms of a system of negative expectancies concerning his or herself and his or her future life. A sense of hopelessness may originate out of a temporary or
permanent cognitive deficiency, with difficulty in generating solutions to problems, leading to a state where one feels there is no way out of a stressful situation. It is hypothesized that this state leads to the use of maladaptive problem-solving techniques such as self-harm.

The importance of hopelessness in suicide and DSH is well recognised in adults. Research has identified the factor of hopelessness as the key variable linking depression and suicidal behaviour (Beck et al., 1975). Depression and suicidal intent show little or no correlation when hopelessness scores are controlled for, while suicide intent is highly associated with hopelessness, even when depression scores are controlled for. In a group of depressed inpatients, hopelessness was the best predictor of suicide at 10-year follow-up (Beck et al., 1985). Compared with adults, adolescents have fewer life experiences upon which to draw and therefore fewer problem-solving resources to call on. The critical role played by problem-solving appraisal in predicting both hopelessness and suicidal ideation in a group of young adults has been confirmed in adults by Rudd et al. (1994).

Hopelessness and its links to inadequate problem-solving may be an important factor contributing to DSH in adolescents. A sense of hopelessness has been shown to differentiate a group of self-harming adolescents from a depressed "at-risk" group (Swedo et al., 1991). In contrast Rotheram-Borus and Trautman (1988) studied a group of 44 Hispanic and Black female adolescents and found hopelessness was not predictive of suicidal behaviour. This point of view is supported by Cole (1989), who found that depression rather than hopelessness predicted self-harming ideation and attempts in a group of adolescent college students.

Sadowski and Kelly (1993) showed that a group of adolescents who had self-harmed had poorer social problem-solving skills than a group of psychiatric patients and normal controls although this was not linked with either hopelessness or depression. Hawton (1986) has pointed out that current understanding of the motivation leading to DSH in adolescence is inadequate. In a study of reasons given to explain DSH (Hawton et al., 1982) marked differences were found in the ways such attempts were explained by the adolescents and how they were viewed by their assessors, both in terms of suicidal intent and motivation. Clinicians rarely judged the behaviour as intended to result in death, and were more likely to attribute the behaviour to hostile or manipulative motives. Further investigation of this important area is necessary. Better understanding of the links between problems, hopelessness and motivation for DSH may make it easier to identify those at-risk of further self-harm. Such an understanding may also indicate those likely to benefit from specific interventions, such as cognitive therapy.

The role of the parents of adolescents who self-harm is of the greatest importance, both in the understanding of the problems and motivation precipitating DSH, and in the outcome of subsequent treatment. However, there has been little research comparing the parent's perception of the reasons for the DSH with the child's view of the situation. It may be that many parents are unaware of the extent of their child's concerns and feelings of hopelessness prior to a serious suicide attempt, and have therefore not sought appropriate help. Many parents underestimate the seriousness of an episode of DSH (Hawton, 1986) and it may be that a clear demonstration of their child's feelings might lead to better compliance with future treatment.

In addition Reder et al. (1991) has outlined a hypothesis that links deliberate self-harm and problem-solving in adolescence, suggesting that the act of DSH can be underrated as an attempt to resolve relationship difficulties.
This study examines the problems, problem-solving, parental understanding, hopelessness and depression in a consecutive series of adolescents in the West Yorkshire region who had deliberately taken overdoses.

Hypotheses

1. DSH subjects are more likely to report feelings of hopelessness than a matched (age/sex/depression) control group of adolescents.
2. DSH subjects will report more problems and rate them as more severe than matched controls.
3. Parents of DSH subjects will underestimate the number and severity of reported problems more than the control groups.
4. DSH subjects will rate parents as understanding their problems less than those of the control group.
5. DSH subjects will have exhausted their problem-solving abilities.

Inclusion criteria
Age: 12-16 years still attending school. Deliberate self-harm: excluding cases of self-laceration in order to exclude any admission variables.

Method

Consecutive cases of DSH presenting to the casualty departments in Leeds Western Health District were interviewed. The parents of each subject were also asked to take part in the study. In the case of adolescents living away from home, such as those in local authority care, the adults responsible for their daily care were interviewed. At the time of the study, DSH subjects and their parents were routinely interviewed by a child psychiatrist. Basic demographic and clinical data was extracted from their assessment interview, and a package of self-rated instruments was given to the adolescent. Similar questionnaires were given to the parent accompanying the child to hospital prior to psychiatric assessment. If both parents attended they were asked to complete the questionnaires independently.

Assessment instruments
Assessor. Demographic and routine clinical data.

Suicide intent scale. (Beck et al., 1974). The total score (range 0-30) is used to assess the degree of suicidal intent with higher scores corresponding to higher intent.

Subject. 1. Reasons for DSH:
(i) problem areas identified from a list including family relationships, peers, boyfriend/girlfriend, school, employment prospects and finances.
(ii) evaluation of degree of hopelessness related to each of the above reas.
(iii) ways in which they felt the overdose would change their problems.
2. Visual analogue scales of perceived parental understanding of their problems and perceived parental criticism.
3. The Hopelessness Scale for Children (Kazdin et al., 1983) This is a self-rating scale based on the Beck Hopelessness Scale for adults, which includes affective, motivational and cognitive components that reflect negative expectancies. Adult scale items were rephrased and tested with inpatient children. It includes 17 items consisting of thoughts or feelings about the future which the subject rates as true or false.
4. The Children's Depression Inventory (Kovaks, 1981). This is patterned after the Beck Depression Inventory and is a self-rating scale which includes 27 items that refer to affective, cognitive and behavioral symptoms of depression. It is designed for use in school age children and adolescents.

Parents. Each parent to complete independently:
1. Reasons for DSH—perceived problem areas and degree of hopelessness related to these.
2. Visual Analogue Scales—parents' assessment of their degree of criticism and their understanding of their adolescent's problems.

Controls. Two control groups were identified. The first was a group of “at risk” adolescents who were attending child psychiatric outpatients, but who had no history of self-harm and a second group drawn randomly from two local schools, matching the original group for age and sex. Both these groups were asked to complete a package of questionnaires, including problem list, visual analogue scale of parental understanding and criticism, the Hopelessness Scale and the Child Depression Inventory. The parents' questionnaires were the same as those given to the subjects' parents.

All statistical analyses were carried out using a chi-square analysis unless otherwise stated.

Results
Demographics
Sixty consecutive cases of deliberate self-harm (DSH) presented in the 9 months of the study. We were able to include 51 (85%) in the study. Fifteen percent had to be excluded due to incomplete data being available. This was mainly due to assessor variables, for example, failure to give out the questionnaires or failure to collect those that had been completed. The mean age of the group was 14.8 with a range of 12-17. Eighty percent were female, 20% male.

The school control group was made up of 37 individuals, with a mean age of 14.3, range 13-15, 95% female, 5% male.

The clinic control (at-risk) group had 32 individuals with a mean age of 14.3, range 12-16, 64% female, 36% male.

Past psychiatric history
Thirteen (25%) of the DSH group had a previous psychiatric history, with 7 (13%) having previously self-harmed.
Three (8%) of the school control group and 9 (29%) of the clinic controls had a previous psychiatric history. Neither of the control groups had a previous history of self-harm as these had been excluded.

Problem areas
All groups were asked about possible problem areas in their lives. They were asked to rate each problem on a scale of 0-4, with 1 and 2 reflecting a minor or moderate problem that is expected to improve, and 3 and 4 indicating one perceived as unlikely to improve.

Figure 1 illustrates the total number of reported problems in the DSH group and the combined controls.

Problems reported with family, friends and boy/girlfriend show a statistically significant increase in the DSH group compared to control.

If just severe problems are considered a different pattern emerges. The DSH group shows only significantly more problems in family and school areas (Figure 2).

Parents also completed the problem area questionnaire. The results presented are based on mothers only as the number of fathers responding was too small. These results are illustrated in Figures 1 and 2. Parents in both the DSH group and in the control group showed a high level of agreement with their children about the types of problems that they had.

Parental understanding
In trying to gain a more subjective measure of whether each adolescent felt understood by their parent the results from the Likert scale were used. This provided a measure of perceived parental understanding.
Figure 2. Total number of severe problems only reported in the DSH group and combined control group as perceived by self and parents. (---) DSH group; (- - -) parents of DSH group; (- - - -) control group; (•••) parents of control group.

Those that scored under five and those that scored five and over were subdivided into low and high understanding subgroups (Figure 3). It can be seen that the DSH group perceive their parents as understanding them
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Figure 4. Number of subjects in a depressed subgroup reporting high (■) and low (□) hopelessness scores.

significantly less than the school control group, although not the clinic control group (chi-square p<0.01). This would suggest that perceived parental understanding is not a specific problem to DSH but to other high-risk groups as well. Our hypothesis that adolescents who have taken an overdose will consider their parents to understand them less than control adolescents was not proven.

The degree to which these adolescents felt criticised by their parents was also rated. There were no significant differences between the groups on these measures.

Parents were also asked about how much they felt they understood and criticized their child. There were no significant differences between parents’ (mothers’) rating and the adolescents’, thus repeating the pattern of lower understanding in both the DSH group and clinic control.

Hopelessness
The mean score for the hopelessness scale in the DSH, school controls and clinic controls differ significantly, their respective scores being 5.98 (S.D. 4.0), 3.43 (S.D. 1.7) and 4.13 (S.D. 3.1) (Kruskal-Wallis p value 0.008).

Our first listed hypothesis was whether hopelessness will predict membership of the DSH group, even after age, sex and degree of depression are taken into account.

In order to analyse the data further each group was further split into two groups, a high hopelessness group with a score of five and above and a low hopelessness group with scores less than five.

Fifty-one percent of the DSH group had a high hopelessness score, with 10 and 29% of the school and clinic control groups, respectively, achieving a high hopelessness score.

Although significantly more of the DSH group scored high on the hopelessness questionnaire, this may have just been a measure of their levels of depression. In order to control for depression, only those hopelessness scores where there was a high level of
depression were analysed (a score on the CDI greater than 11). The results are presented in Figure 4.

With both control groups taken together a significant result is produced by chi-square analysis at the level of \( p < 0.05 \). The level of depression in the two groups was similar (mean scores: DSH 20.8, controls 18.1, n.s. difference). Our hypothesis is confirmed that in a depressed group, hopelessness will predict membership of the DSH group.

**Problem-solving**

All DSH subjects were asked whether they thought that taking the overdose would change their problems.

Thirty-four (68%) answered that they expected that it would influence their problems. Fourteen (41%) said that it would influence their problem because they would be dead. This group had significantly higher scores on both the hopelessness (5.1 vs. 8.1, \( p = 0.05 \)) and depression (14.6 vs. 22.5, \( p = 0.014 \)) questionnaires.

Of the remainder, 14 (41%) answered that it would help them get away from their problems for a time, 6 (23%) said it would let people know how bad they felt and 11 (32%) said that it would make people help them. In these groups their overdose may be interpreted as an attempt to solve their problems, albeit in a rather dysfunctional way.

Nineteen (38%) of the DSH group said they were unable to think of anything else to do, suggesting that their ability to generate solutions to problems had been exhausted. The group offering this answer had higher hopelessness scores (5.1 vs. 7.6, \( p = 0.07 \)), just failing to reach significance, but no difference in depression scores (17.5 vs. 18.1, \( p = 0.06 \)) than those who did not answer the questions in this way. This suggests that exhaustion of problem-solving ability may be associated with the cognitive state of hopelessness.

**Discussion**

Our results have confirmed our hypothesis that adolescents engaging in acts of deliberate self-harm are more likely to report feelings of hopelessness about their future even after depression is taken into account. This is in line with other workers who have researched this field within the adult population but it would now also appear to be important in adolescents. At this point it is important to comment on the two control groups which were used. One was a group of school controls with a likelihood of low rates of any psychiatric disorder, and the other, a clinic control group which could be defined as an at-risk group but as yet had not self-harmed. It is significant that especially in the area of hopelessness there is a marked difference between the deliberate self-harm group and the “at-risk” group, suggesting that it is the hopelessness that has been an important factor in the causality of deliberate self-harm.

Linked to hopelessness inevitably are the problems that people feel hopeless about. Interestingly the group that had self-harmed did not report an increase in the number of problems right across the board but these were specifically in the areas of family, friends, and boy/girlfriends. If however one looks only at those problems that have been rated as severe by the individuals, the only significant differences between the groups are in the family and school areas. This reflects what is encountered in clinical practice and emphasises the importance of school problems in this group. Although we did not
specify ask about the nature of the school problems, many involved bullying, raising the possibility that effective school anti-bullying policies may lead to a reduction in adolescent self-harm.

The ability to generate different solutions to problems has in the past been described as a sign of healthy psychological functioning. The results of this study suggest that a substantial proportion of the DSH group felt unable to generate solutions to their problems and perhaps in this group their inability to see different ways out of a problem may lead them into a cycle of hopelessness and eventual self-harm. This has repercussions for interventions which may help these individuals increase their problem-solving abilities.

It was expected that adolescent ratings of parental understanding would be less in the deliberate self-harm group than in the control groups. Although it was present less than in the school controls, interestingly there was no significant difference between the deliberate self-harm group and the clinic control groups. This would suggest that this is not an independent risk factor for deliberate self-harm but rather an association of children and families with problems.

There are several limitations in a study of this type. The response rate for the self-report questionnaires was 85% and this may have introduced some sample bias. However, since the failure to include subjects was due mainly to assessor variables, rather than refusal, this is unlikely to be of any great significance. The results were dependant on well validated self-report scales for both depression and hopelessness, but the questionnaires for problem-solving and problem areas were devised locally and have not been validated experimentally. Further research using independent clinical assessments in these areas may be desirable. Finally, the relatively small sample size of the subgroups may explain why some of the differences noted did not reach statistical significance.

The authors believe that this study contributes to the weight of evidence implicating hopelessness as an independent variable for deliberate self-harm. In addition, poor problem-solving abilities alongside these feelings may well also be important. This has important implications for therapeutic involvement with this group. Recent evidence has raised the possibility of the effectiveness of a model of cognitive therapy in young people who have self-harmed (Salkovskis et al., 1990). Our results would suggest that within a model of cognitive therapy, which is underpinned by techniques aimed at improving problem-solving ability, generating solutions to problems, and attempting to reverse the vicious circle of hopelessness and despair may help these patients and reduce the risk of repetition and ultimately reduce the risk of successful suicide.

References


