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Repetition of deliberate self-harm by adolescents: the role of psychological factors

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The aim of this study was to examine the relationship between psychological variables and repetition of deliberate self-harm by adolescents ($n=45$) aged 13–18 years who had been admitted to a general hospital having taken overdoses. Standardized measures of depression, hopelessness, suicidal intent, impulsivity, trait and state anger, self-esteem and problem-solving (both self-report and observer-rated) were administered to the adolescents while still in the general hospital. Repetition was assessed on the basis of previous overdoses ($n=14$) and repetition of self-harm (self-poisoning and self-injury) during the subsequent year ($n=9$).

Adolescents with a history of a previous overdose and/or who repeated self-harm during the following year ($n=18$) differed from non-repeaters in having higher scores for depression, hopelessness and trait anger, and lower scores for self-esteem, self-rated problem-solving and effectiveness of problem-solving rated on the basis of the Means End Problem Solving test, all measured at the initial assessment. These differences largely disappeared when level of depression was controlled for. Similarly, differences found between repeaters and non-repeaters in the year following the index overdoses for problem-solving were much reduced when account was taken of differences in depression scores.

Depression is a key factor associated with risk of repetition of adolescent self-harm (and hence of suicide risk). In the management of adolescents who have harmed themselves, careful assessment of depression and appropriate management of those who are depressed is essential.

Introduction

Repetition of deliberate self-harm (self-poisoning or self-injury) in adolescents is common. Approximately 20–30% of those referred to general hospitals will have engaged in previous acts of self-harm (Hawton, 1986, p. 124; Hawton and Fagg, 1992), which in many cases will not have come to the attention of health care agencies (Kienhorst *et al.*, 1990; Hawton *et al.*, 1996). Between 10% and 15% will carry out a further act within the following year (Hawton *et al.*, 1982*a*; Hawton and Fagg, 1992), and there is an important subgroup of individuals who will repeatedly self-harm. Repetition of this behaviour is important for several reasons. First, it indicates persistent or recurrent psychosocial problems. Second, it places considerable demands on clinical services. Third, and most importantly, it is associated with a considerable risk of completed suicide. The extent of overall suicide risk in adolescents who self-harm has varied in different studies, with 4·3% having been reported by Otto (1972) in a 10–15 year follow-up study of a sample of Swedish adolescents who had either

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taken overdoses or deliberately injured themselves and 0·24% in a mean follow-up period of 2·8 years in adolescents who had all taken overdoses (Goldacre and Hawton, 1985). These figures, while being markedly discrepant probably because of the different settings and duration of follow-up, are both several times the expected risk of suicide in adolescents in general.

Some of the factors that have been linked to increased risk of repetition of deliberate self-harm in adolescents are socio-demographic such as male gender, coming from a large family and not living with parents, or general clinical phenomena such as previous deliberate self-harm, alcohol/drug abuse, chronic problems plus behaviour disturbance and "depressive tendencies" (Stanley and Barter, 1970; Headlam *et al.*, 1979; Choquet *et al.*, 1980; Hawton *et al.*, 1982*b*; Goldacre and Hawton, 1985). From the therapeutic standpoint it would be extremely valuable if one could identify more specific psychological characteristics associated with increased risk of repetition which might be susceptible to treatment interventions. In this study of adolescents who took overdoses, we have investigated in-depth a range of psychological factors which might be predicted to increase risk of repetition in order to determine which are the most important. The choice of these was related in part to the factors which have been reported as being of aetiological significance in adolescent deliberate self-harm or relevant in the assessment of seriousness and/or repetition of deliberate self-harm by adolescents. These include depression (Carlson and Cantwell, 1982; Taylor and Stansfield, 1984), hopelessness (Kazdin *et al.*, 1983; Brent, 1987), premeditation (Brown *et al.*, 1991), impulsivity (Kashden *et al.*, 1993), problem duration (Hawton *et al.*, 1982*b*), and problem-solving (Rotherham-Borus *et al.*, 1990). We also included a measure of state and trait anger because of the purported general importance of anger in deliberate self-harm (Plutchik and van Praag, 1986).

The main hypothesis was that deficits in problem-solving would distinguish repeaters from non-repeaters. We also expected that differences between repeaters and non-repeaters would be found with regard to some of the other psychological measures, especially impulsivity and self-esteem.

Method

Subjects

The subjects were recruited from consecutive patients aged 12–18 years residing in Oxford District who were admitted to the general hospital in Oxford because of self-poisoning (not self-injury) on the days the research interviewer was available (5–7 days per week). Approximately 90% of adolescents presenting to the hospital following self-poisoning are admitted to a hospital bed. Consent for interview was obtained from all the adolescents, and from parents for adolescents below the age of 16 years. The study had the approval of the local ethics committee. The research interview, which was conducted by S.K., was separate from any clinical interview. Each adolescent was interviewed within 24 h of admission. No adolescents refused to be interviewed.

The following treatment recommendations were made by the clinical assessors for the adolescents following their overdoses: 14 outpatient counselling from the general hospital psychiatry service, 11 psychiatry outpatient appointments (adult or adolescent service), 10 to return to the care of their general practitioner (family doctor), six to social services, three to miscellaneous other agencies and one to adolescent psychiatric unit inpatient care.

Measures

Demographic information was obtained at the initial assessment, including basic census and social data. Any previous acts of self-poisoning were recorded. The depression symptom checklist from the Schedule for Affective Disorders and Schizophrenia, Child Version (K-SADS) (Puig-Antich and Chambers, 1978) was used as a diagnostic guide for assessing major depression according to DSM IIIR criteria (American Psychiatric Association, 1987).

The following questionnaires and measures were completed. (i) *Beck Depression Inventory (BDI)* (Beck *et al*., 1961): a 21-question depression scale with each answer rated 0–3. (ii) *Beck Suicidal Intent Scale* (Beck *et al*., 1974*a*): this measure of suicidal intent (wish to die) includes 15 questions on two areas (circumstances and self-report), with each question scored 0–2. In addition to overall suicidal intent we also wanted specifically to investigate the relationship between the premeditation item within this scale and repetition. (iii) *Beck Hopelessness Inventory* (Beck *et al*., 1974*b*): 20 questions regarding pessimism about the future are answered "yes" or "no" and a sum score produced. (iv) *Spielberger State–Trait Anger Inventory* (Spielberger, 1988): this includes 20 questions from Spielberger's more extensive State–Trait Anger Expression Inventory, ten concerning general disposition to perceiving situations as annoying or frustrating (trait) and ten concerning anger felt at the time of interview (state). All are self-rated from 1–4. (v) *Plutchik Impulsivity Scale* (Plutchik and van Praag, 1986): 15 questions about whether or not the individual tends to act impulsively in different circumstances and situations are each rated 1–4. (vi) *Self-Concept Questionnaire* (Robson, 1989): a 30-question (each an 8-point Likert scale) measure about self-concept (i.e. self-esteem), e.g. "I'm easy to like" and "I often worry what other people are thinking about me." (vii) *Self-rating Problem Solving Inventory* (McLeavy *et al*., 1987): a 25-question (each a 5-point Likert scale) measure of problem-solving techniques, e.g. "I can disagree with someone without getting upset." (viii) *Means End Problem Solving Test* (MEPS) (Platt and Spivack, 1977): this test was modified by the investigators to suit adolescents and a scoring manual produced. Five stories were used, each having a beginning and a desired ending with no middle, e.g. Harry/Harriet loved his/her girl/boyfriend very much, but they had many arguments. One day she/he left Harry/Harriet. Harry/Harriet wanted things to be better. The story ends with everything fine between them. You begin the story with the girl/boyfriend leaving after an argument. The adolescent is asked to "fill in" the gap to indicate how the ending may have been reached. Stories are scored on whether completed, the total number of statements (relevant means), actions by self ("hero"), actions by others, and story steps or descriptions, plus likely effectiveness and degree of activity/passivity of the subject. The stories were each rated by three of the investigators (K.H., S.K. and K.S.) and the means of their ratings used in the analyses. Inter-rater reliability between the individual raters was satisfactory, with the Kappas for completion of the stories ranging from 0·61 to 0·69 and the Pearsons rank order correlation coefficients between individual pairs ranging from 0·89 to 0·94 for relevant means, from 0·78 to 0·83 for ratings of "hero" actions, between 0·81 and 0·84 for actions by others, from 0·52 to 0·56 for effectiveness and 0·65 to 0·67 for active/passive problem solving (all $p < 0{\cdot}001$). In analysing the data on completion of the stories the subjects were categorized into two groups, the first having completed at least four out of the five stories (completion group) and the second (non-completion group) having failed to complete at least two out of the five stories.

Repetition of deliberate self-harm (self-poisoning or self-injury) during the year following entry to the study was identified by the Oxford Monitoring System for Attempted Suicide (Hawton *et al*., 1997). It included general hospital referral because of deliberate

self-poisoning or self-injury, irrespective of whether this resulted in admission. Episodes not resulting in hospital referral and those occurring away from the catchment area would not have been identified.

Statistical analyses

Statistical analyses were conducted by means of SPSS (SPSS Inc, 1993) and included *t*-tests, χ^2 and analysis of covariance (ANCOVA). Scores on all the measures were checked for skewness. As the BDI scores were skewed, square-root-transformed scores were used in the analyses.

Results

Subjects

Forty-five adolescents aged 12–18 years who had been admitted to the general hospital in Oxford following deliberate self-poisoning were included in the investigation. There were no refusals. The demographic characteristics of the adolescents are shown in Table 1. The ratio of more than five females to each male is consistent with the pattern found in adolescents who self-harm in the United Kingdom (Hawton *et al.*, 1982*a*; Hawton and Fagg, 1992). Forty-three (95·6%) of the adolescents were of Caucasian origin.

Repetition of self-harm

Nearly a third of the adolescents had a history of at least one previous overdose. One in five were referred to hospital because of repetition of deliberate self-harm within a year of the index episode of self-poisoning which brought them into the study. Five out of the nine adolescents who repeated during the follow-up period had a previous history of self-poisoning. Overall, 40% had either a previous history of deliberate self-harm and/or a repeat episode by the end of the year following entry to the study (Table 1).

For the purposes of examining possible factors associated with repetition of deliberate self-harm the analyses were conducted, first, comparing those adolescents with a previous history of self-poisoning and/or subsequent repetition of self-harm with those without a repeat episode either before or after the index overdose, and, second, comparing those who repeated

Table 1 *Characteristics of the adolescents* (*n*=45)

	n (%)
Gender	
Female	38 (84·4)
Male	7 (15·6)
Age	
13–15 years	15 (33·3)
16–18 years	30 (66·7)
Repetition of self-poisoning	
Previous overdose	14 (31·1)
Repeat overdose (within 1 year of index overdose)	9 (20·0)
Previous and/or repeat overdose	18 (40·0)

within the year following the index overdose with those who did not. We report the results of the univariate analyses, and then repeat the comparisons controlling for depression scores on the BDI (square-root-transformed) for those variables with significant differences in the univariate analyses.

Adolescents with a history of repeat episodes and/or repetition following the index overdose compared with the non-repeaters

A diagnosis of Major Depressive Disorder was made three times as frequently amongst the repeaters compared with the non-repeaters (13/18 [72·2%] *vs.* 7/27 [25·9%]; $\chi^2 = 7{\cdot}59$, $p < 0{\cdot}01$). This was reflected in the marked difference between the groups in their depression scores on the BDI (Table 2). The repeaters also had significantly higher hopelessness scores. The two groups did not, however, differ in their mean suicidal intent scores for the index overdose.

There was little difference between the two groups in terms of the proportions of each who had taken impulsive overdoses (i.e. contemplated the act for less than 15 min beforehand),

Table 2 *Comparison of the psychological characteristics of the adolescents with a history of previous overdose and/or repetition following the index overdose ("repeaters") with those of the non-repeaters: (a) univariate analysis; (b) after controlling for BDI scores (variables significant in (a))*

	Repeaters (n=18) Mean (S.D.)	Non-repeaters (n=27) Mean (S.D.)	
(a) Univariate analyses			
Depression (BDI)	32·3 (12·4)	19·3 (10·4)	t=3·81, p <0.001
Hopelessness	13·5 (4·7)	7·8 (5.7)	t=3.48, p <0.01
Suicidal intent	9·7 (2·4)	8·8 (4·1)	n.s.
Impulsivity	18·5 (5·3)	17·4 (5·0)	n.s.
Trait anger	21·3 (10·5)	5·9 (7·0)	n.s.
State anger	27·0 (6.9)	25·6 (6·5)	t=1·90, p<0·07
Self-concept	85·6 (27·1)	107·5 (27.4)	t=2·64, p<0·05
Problem-solving	65·7 (14·7)	75·1 (10·4)	t=2·52, p<0.05
MEPS	(n=16)*	(n=27)	
Total means	4·1 (2·3)	4·3 (1·6)	n.s.
Hero	2·5 (1·0)	2·9 (0·1)	n.s.
Other	0·6 (0·6)	0·7 (0·5)	n.s.
Steps	1·0 (1·3)	0·8 (0·8)	n.s.
Active/passive	3·2 (0.6)	3·4 (0·5)	n.s.
Effectiveness	2·8 (0·6)	3·1 (0·4)	t=1·99, p<0·06
Completion	9/18 (50·0%)	17/27 (63·0%)	n.s.
(b) After controlling for BDI scores	**Adjusted mean**	**Adjusted mean**	
Hopelessness	11·5	9·8	n.s.
State anger	18·8	18·4	n.s.
Self-concept	98·1	95·0	n.s.
Problem-solving	69·0	71·7	n.s.
MEPS effectiveness	2·8	3·1	n.s.

* Two subjects in the repeater group could not be scored on the MEPS as they answered "don't know" to each story.

comprising 83·3% (15/18) of the repeaters and 70·4% (19/27) of the non-repeaters. Nor did the two groups differ in their mean scores on the Plutchik Impulsivity Scale. The repeaters rated themselves as showing somewhat more trait but not state anger. The two groups differed markedly in their scores on the Self-concept Scale, the repeater's scores indicating considerably lower self-esteem.

The repeaters rated their problem-solving skills as poorer (Table 2). On the MEPS test the repeaters' responses were rated as less effective but the difference did not quite reach statistical significance. None of the other findings on the MEPS test approached statistical significance.

Analyses controlling for BDI scores. When the above comparisons were repeated controlling for level of depression as reflected in the BDI scores (ANCOVA), none of the differences found between the groups in the univariate analyses were any longer statistically significant (Table 2).

Adolescents who repeated after the index overdose compared with those who did not

Very few differences were found between the nine adolescents who repeated deliberate self-harm during the year following the index overdose and the 36 who did not (Table 3). The only statistically significant differences were on the MEPS, the repeaters using significantly

Table 3 *Comparison of the adolescents who repeated their overdoses in the year following the index overdoses with those who did not: (a) univariate analyses; (b) after controlling for BDI scores*

	Repeaters (n=9) Mean (S.D.)	Non-repeaters (n=36) Mean (S.D.)	
(a) Univariate analyses			
Depression (BDI)	30·0 (10·9)	23·1 (12·8)	n.s.
Hopelessness	13·0 (5·8)	9·4 (5·9)	n.s.
Suicidal intent	9·9 (2·3)	8·0 (3·9)	n.s.
Impulsivity	18·3 (5·6)	17·8 (5·0)	n.s.
Trait anger	25·3 (7.6)	26·4 (6·4)	n.s.
State anger	21·2 (11·1)	17·3 (8·2)	n.s.
Self-concept	85·9 (33·4)	101·9 (27·5)	n.s.
Problem solving	64·3 (18·7)	73·1 (10·8)	n.s.
MEPS	(n=8)*	(n=35)*	
Total means	3·0 (1·8)	4·5 (1·8)	t=2·03, p<0·05
Hero	2·3 (1·0)	2·8 (0·9)	n.s.
Other	0·4 (0·6)	0·7 (0·5)	n.s.
Steps	0·5 (0·8)	1·0 (1·1)	n.s.
Active/passive	3·2 (0·5)	3·4 (0·6)	n.s.
Effectiveness	2·6 (0·6)	3·1 (0·5)	t=2·31, p<0·05
Completion	4/9 (44·0%)	22/36 (61·1%)	n.s.
(b) After controlling for BDI scores	**Adjusted mean**	**Adjusted mean**	
MEPS			
Total means	3·1	4·4	F=3·09, p<0·09
Effectiveness	2·7	3·1	F=3·72, p<0·07

* One subject in each of the groups could not be scored on the MEPS as they answered "don't know" to each story.

fewer means and their problem-solving responses being rated as less effective. Again there were marked differences in the mean depression scores, although these did not reach statistical significance, and more of the repeaters than the non-repeaters were diagnosed by the research assessor as having a depressive disorder (7/9 [77·8%] *vs.* 13/36 [36·1%]; $\chi^2 = 3{\cdot}52$, $p < 0{\cdot}07$). When the two analyses which had been statistically significant on the MEPS were repeated controlling for BDI scores, the differences were less marked and no longer reached statistical significance (Table 3).

Discussion

In this study we have attempted to identify psychological characteristics which are associated with repetition of deliberate self-harm by adolescents which might inform therapeutic interventions for this increasingly large population (Hawton and Fagg, 1992). This seems particularly important because repetition of deliberate self-harm by adolescents is common (Hawton *et al.*, 1982*a*; Hawton and Fagg, 1992), is associated with increased risk of suicide, is highly distressing for relatives and others and places a substantial burden on general hospital and psychiatric services. Also, most of the factors previously identified (Hawton, 1986, pp. 125–126) have not had obvious therapeutic implications.

The adolescents who were repeaters in terms of having a history of previous deliberate self-harm and/or repeating during the year after the index overdose that brought them into the study were distinguished from the non-repeaters by far greater depression and hopelessness scores, which were reflected in most receiving a clinical diagnosis of depression by the research assessor. The repeaters also had lower self-concept (i.e. self-esteem) scores and somewhat higher trait anger scores. They also appeared to have poorer problem-solving skills in terms of their self-rated scores of problem-solving. There was a trend towards their scores of effectiveness on the basis of their responses to the MEPS being lower. The predicted difference in impulsivity scores was not found. The main influence of impulsivity in relation to deliberate self-harm may be in determining whether it occurs in the first place and not whether it is repeated. When the analyses was repeated controlling for the depression scores on the BDI, however, all the significant differences disappeared. This indicates that depression was an overwhelming factor associated with repetition.

When those who repeated during the year after the index overdose were compared with the non-repeaters, the only statistically significant differences were found on their MEPS scores, the repeaters using fewer means and their problem-solving responses being rated as less effective. Because there was quite a marked, although statistically non-significant, difference in depression (BDI) scores between the two groups the analyses were repeated, again controlling for level of depression. Again the differences between the two groups on their MEPS scores largely disappeared.

These findings do not necessarily mean that psychological characteristics other than depression are irrelevant in terms of risk of repetition of deliberate self-harm by adolescents. The relatively small sample size clearly limits the ability of the study to detect other contributory factors. Were we able to study a larger sample of adolescents, some of the factors we examined may have emerged as contributing to the risk of repetition. This is supported by the fact that after controlling for depression scores there remained some differences between those who repeated during the year after their overdoses and the non-repeaters in terms of their problem-solving effectiveness and total number of means used. Nevertheless, we can

conclude that depression is an extremely important factor in relation to repetition of deliberate self-harm by adolescents. Depression has also been found to be the best predictor of future deliberate self-harm in a representative community sample of adolescents (Lewinsohn *et al.*, 1994).

Clinical implications

In early studies of deliberate self-harm in adolescents in which systematic methods of assessing for psychiatric disorders were not used, depressive disorders were reported as relatively uncommon (White, 1974; Hawton *et al.*, 1982*a*). A study which employed a depression scale identified a somewhat greater proportion of a series of adolescents who took overdoses as possibly being depressed (Taylor and Stansfield, 1984). Recent investigations in which systematic screening for psychiatric disorders has been employed have identified psychiatric disorders, most commonly depression, in the majority of adolescents who have taken overdoses, the depressive disorders tending to persist in a substantial proportion of cases 2 to 3 months later (Kerfoot *et al.*, 1996; Burgess *et al.*, 1998). The results of those studies and of the present investigation underline the importance of careful screening for depression in the overall assessment of adolescents who deliberately self-harm. In particular, they emphasize the need for effective treatment of depression in this population.

A recent systematic review has suggested that the role of tricyclic antidepressants in the treatment of depression in adolescents may be limited (Hazell *et al.*, 1995). This will be especially true in a population at high risk of repeated self-poisoning. However, use of antidepressants with less toxicity in overdose will reduce the risks associated with overdose and will often be worth a trial (Ambrosini *et al.*, 1995). The recently reported success of cognitive behaviour therapy in a treatment study of depressed adolescents (Kroll *et al.*, 1996; Brent *et al.*, 1997) suggests that this is likely to be an effective approach in this group. This will usually include therapeutic work on problem-solving skills. There is preliminary evidence in adolescent deliberate self-harmers that a brief problem-solving approach applied to the whole family where this is relevant (Rotherham-Borus *et al.*, 1994), including home-based sessions where indicated (Kerfoot *et al.*, 1995), is well accepted and effective in targeting family difficulties in communication, emotional control and shared problem-solving. Such an approach now requires proper evaluation in a controlled treatment study. The combination of such treatment with antidepressants also requires investigation.

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References

Ambrosini, P. J., Emslie, G. J., Greenhill, L. L. and Kutcher, S. (1995). Selecting a sequence of antidepressants for treatment of depression in youth. *Journal of Child and Adolescent Psychopharmacology*, **5**, 233–240.

American Psychiatric Association (1987). *Diagnostic and Statistical Manual of Mental Disorders*, 3rd edition, revised (DSM III-R). Washington, DC:American Psychiatric Association.

Beck, A. T., Ward, C., Mendelson, M., Mock, J. and Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, **4**, 561–571.

Beck, A. T., Schyler, D. and Herman, L. (1974*a*). Development of suicidal intent scales. In *The Prediction of Suicide*, Beck, A. T., Resnick, H. L. P., Lettieri, D.T. (Eds). MD: Charles Press, pp. 45–56.

Beck, A. T., Weissman, A., Lester, D. and Trexler, L. (1974*b*). The measurement of pessimism: the Hopelessness scale. *Journal of Consulting and Clinical Psychology*, **42**, 861–865.

Brent, D. A. (1987). Correlates of medical lethality of suicide attempts in children and adolescents. *Journal of the American Academy of Child Psychiatry*, **26**, 87–89.

Brent, D. A., Holder, D., Kolko, D., Birmaher, B., Roth, C., Iyengar, S. and Johnson, B. A. (1997). A clinical psychotherapy trial for adolescent depression comparing cognitive, family , and supportive therapy. *Archives of General Psychiatry*, **54**, 877–885.

Brown, L. K., Overholser, J., Spirito, A. and Fritz, G. K. (1991). The correlates of planning in adolescent suicide attempts. *Journal of the American Academy of Child and Adolescent Psychiatry*, **30**, 95–99.

Burgess, S., Hawton, K. and Loveday, G. (1998). Adolescents who take overdoses: outcome in terms of changes in psychopathology and the adolescents' attitudes to care and their overdoses. *Journal of Adolescence*, **21**, 209–218.

Carlson, G. A. and Cantwell, D. P. (1982). Suicidal behavior and depression in children and adolescents. *Journal of the American Academy of Child Psychiatry*, **21**, 361–368.

Choquet, M., Facy, F. and Davidson, F. (1980). Suicide and attempted suicide among adolescents in France. In *The Suicide Syndrome*, Farmer, R. D. T. and Hirsch, S. (Eds). London: Cambridge University Press, pp. 73–89.

Goldacre, M. and Hawton, K. (1985). Repetition of self-poisoning and subsequent death in adolescents who take overdoses. *British Journal of Psychiatry*, **146**, 395–398.

Hawton, K. (1986). *Suicide and Attempted Suicide among Children and Adolescents*. Newbury Park, CA: Sage.

Hawton, K., O'Grady J, Osborn M. and Cole D (1982*a*). Adolescents who take overdoses: their characteristics, problems and contact with helping agencies. *British Journal of Psychiatry*, **140**, 118–123.

Hawton, K., Osborn, M., O'Grady, J. and Cole, D. (1982*b*). Classification of adolescents who take overdoses. *British Journal of Psychiatry*, **140**, 124–131.

Hawton, K. and Fagg, J. (1992). Deliberate self-poisoning and self-injury in adolescents: a study of characteristics and trends in Oxford, 1976–89. *British Journal of Psychiatry*, **161**, 816–823.

Hawton, K., Fagg, J., Simkin, S., Bale, E. and Bond, A. (1997). Trends in deliberate self-harm in Oxford, 1985–1995, and their implications for clinical services and the prevention of suicide. *British Journal of Psychiatry*, **171**, 556–560.

Hawton, K., Fagg, J. and Simkin, S. (1996). Deliberate self-poisoning and self-injury in children and adolescents under 16 years of age in Oxford, 1976–1993. *British Journal of Psychiatry*, **169**, 202–208.

Hazell P, O'Connell O, Heathcote D, Robertson J. and Henry D (1995). Efficacy of trycyclic drugs in treating child and adolescent depression: a meta-analysis. *British Medical Journal*, **310**, 897–901.

Headlam, H. K., Goldsmith, J., Hanenson, I. B. and Raish, J. L. (1979). Demographic characteristics of adolescents with self-poisoning. A survey of 235 instances in Cincinnati, Ohio. *Clinical Pediatrics*, **18**, 147–154.

Kashden, J., Fremouw, W. J., Callahan, T. S. and Franzen, M. D. (1993). Impulsivity in suicidal and non-suicidal adolescents. *Journal of Abnormal Clinical Psychology*, **21**, 339–353.

Kazdin, A. E., French, N. H., Unis, A. S., Esveldt K. and Sherick, B. (1983). Hopelessness, depression and suicidal intent among psychiatrically disturbed inpatient children. *Journal of Consulting and Clinical Psychology*, **51**, 504–510.

Kerfoot, M., Harrington, R. and Dyer, E. (1995). Brief home-based intervention with young suicide attempters and their families. *Journal of Adolescence*, **18**, 557–568.

Kerfoot, M., Dyer, E., Harrington, V., Wordham, A. and Harrington, R. (1996). Correlates and short-term course of self-poisoning in adolescents. *British Journal of Psychiatry*, **168**, 38–42.

Kienhorst, C. W. M., De Wilde, E. J., van den Bout, J., Diekstra, R. F. W. and Wolters, W. H. G. (1990). Self-reported suicidal behavior in Dutch secondary education students. *Suicide and Life-Threatening Behavior*, **20**, 101–112.

Kroll, L., Harrington, R., Jayson, D., Fraser, J. and Gowers, S. (1996). Pilot study of continuation cognitive-behavioural therapy for major depression in adolescent psychiatric patients. *Journal of the American Academy of Child and Adolescent Psychiatry*, **35**, 1156–1161.

Lewinsohn, P. M., Rohde, P. and Seeley, J. R. (1994). Psychosocial risk factors for future adolescent suicide attempts. *Journal of Consulting and Clinical Psychology*, **62**, 297–305.

McLeavy, B., Daly, R., Murray, C., O'Riordan, J. and Taylor, M. (1987). Interpersonal problem solving deficits in self-poisoning patients. *Suicide and Life-Threatening Behavior*, **17**, 33–49.

Otto, U. (1972). Suicidal acts by children and adolescents (Suppl. 233). *Acta Psychiatrica Scandinavica*, **306**, 7–123.

Platt, J. and Spivack, G. (1975). *Manual for the Means-End Problem Solving Procedure: A Measure of Interpersonal Cognitive Problem-solving Skill*. Philadelphia, PA: Hahnemann Medical College and Hospital.

Plutchik, R. and van Praag, H. M. (1986). The measurement of suicidality, aggressivity and impulsivity. *Clinical Neuropharmacology*, Vol. 9, Suppl. 4., New York: Raven Press.

Puig-Antich, J. and Chambers, W. (1978). *The Schedule for Affective Disorders and Schizophrenia for School-age Children*. New York Psychiatric Institute. Unpublished interview schedule.

Robson, P. (1989). Development of a new self-report questionnaire to measure self-esteem. *Psychological Medicine*, **19**, 513–518.

Rotherham-Borus, M. J., Troutman, P. D., Dopkins, S. C. and Shrout, P. E. (1990). Cognitive style and pleasant activities among female adolescent suicide attempters. *Journal of Consulting and Clinical Psychology*, **58**, 554–561.

Rotherham-Borus, B. J., Piacentini, J., Miller, S., Graae, F. and Castro-Blanco, D. (1994). Brief cognitive-behavioral treatment for adolescent suicide attempters and their families. *Journal of the American Academy of Child and Adolescent Psychiatry*, **33**, 508–517.

Spielberger, C. D. (1988). *Manual for the State–Trait Anger Expression Inventory*, research edition. Odessa, FL: Psychological Assessment Resources.

SPSS Inc (1993). *SPSSX for Unix: Base System User's Guide 5.0.* Chicago: SPSS Inc.

Stanley, E. J. and Barter, J. T. (1970). Adolescent suicidal behavior. *American Journal of Orthopsychiatry*, **40**, 87–96.

Taylor, E. A. and Stansfield, S. A. (1984). Children who poison themselves: I. Clinical comparison with psychiatric controls. *British Journal of Psychiatry*, **145**, 127–131.

White, H. C. (1974). Self-poisoning in adolescents. *British Journal of Psychiatry*, **124**, 24–35.