British Journal of Psychiatry (1990), **156**, 243–248

Characteristics of Suicide Attempters in a Population-Based Sample of Dutch Adolescents

C. W. M. KIENHORST, E. J. DE WILDE, J. VAN DEN BOUT, R. F. W. DIEKSTRA and W. H. G. WOLTERS

The characteristics of suicide attempters were ascertained in a sample of 9393 Dutch students aged 14–20. Broken homes and use of drugs and alcohol were found more often among attempters. Attempters more frequently lived with a single parent, in children's homes or foster homes, were disproportionately of female sex, reported more deaths of friends or relatives, and more often had an unemployed father. Thoughts of suicide and of death were reported more frequently, they were more depressed and hopeless, and had less self-esteem. They were less rational and perceived relationships with parents as poor.

From preliminary findings of a Dutch study (Kienhorst, 1988), 9% of the suicide attempters in the sample repeated their suicide attempt within a year. At least one adolescent in this sample died as a result. Within the same period 3% of depressed youngsters in the same study attempted suicide for the first time, whereas no attempters were found in the remainder of the study population (Kienhorst, 1988). As these findings correspond with the results of American, Swedish, Canadian, and English studies (Stanley & Barter, 1970; Otto, 1972; McIntire *et al*, 1977; Garfinkel *et al*, 1982; Hawton *et al*, 1982; Goldacre & Hawton, 1985), it appears that the probability of an attempt is higher for adolescents who have previously attempted suicide than for those who have not.

These findings, among other data, raise the question as to the characteristics that differentiate between 'normal' adolescents and adolescent suicide attempters, for identification of such characteristics might result in suggestions for intervention and prevention. In particular, the characteristics of adolescents with a risk of a first suicide attempt require delineation.

The literature already contains studies on such characteristics (e.g. Herjanic & Welner, 1980; Petzel & Riddle, 1981; Berman & Carroll, 1984; Hawton & Osborn, 1984), which can roughly be classified as sociodemographic (e.g. broken home, sex, experienced deaths); behavioural (e.g. use of alcohol and drugs); developmental psychological, psychological, or psychiatric (e.g. mood disturbances, identity), and relational (e.g. family interactions, etc.). These characteristics, however, were mainly found in suicidal adolescents who received either ambulant or intramural treatment. Consequently, these data cannot be generalised to a non-clinical population.

A difficulty of studying the 'normal' population, however, is the low incidence of suicide attempts. Smith & Crawford (1986) for example conducted one of the few investigations in this field using a sample of 313 high-school students. In their report they argue, among other things, that attempters are more depressed and more pessimistic than normals. However, those findings were based on only 33 suicide attempters.

From a large number of secondary-school students, we collected data about suicidal behaviour, sociodemographic variables, use of alcohol and drugs, depressive mood, hopelessness, self-esteem, and the perception of parental relationships. In addition, the sample has been analysed with respect to rationality, as defined by Ellis (1962), because of the relationship between rationality and depressive mood (Thyer & Papsdorf, 1981; Kienhorst *et al*, 1987*a*) and depressive mood and suicidal behaviour.

Method

Subjects

The survey sample ($n = 9393$) consisted of 5425 boys and 3941 girls (sex was not recorded in 27 cases) aged 14–20 years (mean 17 years 4 months, s.d. 1 year 9 months). There are no single-sex schools in the Netherlands, so the sampling was not biased in this way; the national boy:girl sex ratio for 14–20-year-olds attending school in 1986 was 1.108. The sample comprises students from 39 secondary schools in the middle of the Netherlands. These schools constitute 51% of the total number of schools ($n = 76$) we requested (in February 1985) to allow these students to co-operate with our investigation.

There was a slight over-representation of older students, as well as of boys; other sociodemographic features correspond with the distribution of the national population (Kienhorst, 1988).

Measures

By means of a number of questionnaires which were administered by experimenters in classrooms, the students were asked to give information about the following.

(a) *Suicidal behaviour and thoughts about death*. The subject was asked: "Did you on one or more occasions attempt suicide? If so, when?" The date(s), month and year, of any attempt(s) were recorded. The subject was also asked about recent suicidal thoughts and thoughts about death.

(b) *Sociodemographic variables*. Questions were asked about sex, age, nationality, living situation, number of siblings, divorce of parents, death of family members or friends, and employment of father and mother. In addition, data were gathered about school type, denomination, school size, class size, and about the size of the municipality to which the school belonged.

(c) *Use of alcohol and drugs*. Students were asked to specify the number of alcoholic drinks they had consumed on each day of the previous week. Use of soft and hard drugs was also assessed.

(d) *Self-report questionnaires*. The following questionnaires were presented to the students: the Self-rating Depression Scale (SDS; Zung, 1965) (at the request of the school authorities, item 6, "I still enjoy sex", was removed, and the scores were corrected accordingly); the Depression Adjective Check-List (DACL), form E; Lubin, 1967); the Hopelessness Scale (Beck *et al*, 1974); the Self-esteem Scale (Rosenberg, 1965); the family scale from the Offer Self-Image Questionnaire for Adolescents (Offer *et al*, 1982); and the Rational Behaviour Inventory (RBI; Shorkey & Whiteman, 1977). The psychometric qualities of these questionnaires were reported by Kienhorst *et al* (1990) and Kienhorst (1988).

Data processing

The large number of subjects allowed the sample to be divided into two groups, of equal size and composition. The data from one group (the construction group) can be used to find the best distinctive set of variables between attempters and non-attempters. The data from the other group (the validation group) are used to validate this result. Respondents were randomly assigned to groups after stratifying by sex and level of secondary education (high/intermediate/low). The students who had attempted suicide differed with respect to the time between the attempt and the assessment. This varied from a few months to seven years. This variable was also taken into account when assigning students to the two groups. There were 79 students who did not respond to the question about the suicide attempt; these were not assigned to either group. Within the construction group, the variables were tested first for a relationship with the occurrence of a suicide attempt. It was decided that variables would be used in subsequent analyses only if they could reach effect sizes (Cohen's (1977) value w and d) of 0.05 and 0.10 (respectively). This was necessary because only a limited set of variables can be accepted for a logistic regression analysis (Haberman, 1974). The variables selected were used to predict group membership statistically (occurrence/non-occurrence of an attempt) by way of a logistic regression analysis using a forward-stepwise method. This analysis was also carried out on the questionnaire scores. Thus, two clusters of predicting variables were generated, one with respect to the variables selected through the effect size w, and one relating to the questionnaires.

Since the BMDP program (Dixon, 1983) accepts a limited number of unique combinations of categories of variables, it is not possible to combine both predicting clusters in one, new logistic regression. It was decided to bring some of the most predictive variables from both clusters together in varying combinations, and to carry out logistic regressions on these combinations. They were evaluated on their 'goodness of fit' (the correspondence between the observed values and the values that are predicted by the model). In this way, the most differentiating combination of variables is found. A validation is carried out on this combination by way of the validation group.

Results

From the sample of 9393 students, 203 (2.2%) reported a suicide attempt. The construction group ($n=4657$) contained 101 attempters, and the validation group ($n=4657$) 102 attempters (79 students did not respond).

Differences between attempters and the normal population

Recent suicidal thoughts and thoughts about death, sociodemographic variables, use of alcohol and drugs

Within the construction group, the degree of association between each variable and suicide attempts are shown in Table I.

Adolescents who had attempted suicide differed from those who did not in that they had more thoughts about suicide and death, and more often used soft and hard drugs. They also more often came from foster homes or children's homes, or single-parent families. These five characteristics gave effect sizes greater than 0.10, which is regarded a 'small effect' by Cohen (1977). Only the 'suicidal thoughts' approached a 'medium effect' (0.30). The attempters also consumed more alcohol. The group was composed of disproportionately more girls, more often had divorced parents, and more often had unemployed fathers. They also experienced more deaths of relatives outside immediate family or of friends and acquaintances.

The ten variables selected in this way were analysed in a stepwise logistic regression with respect to the mutual dependence regarding the occurrence of a suicide attempt. In the stepwise method, the most discriminating variable is added to a constant variable, after which the remaining variables are tested in order to find the one that contributes the most to the model. On the basis of these remaining variables, it may be found that a variable that has already been selected will yet take a lower rank during subsequent steps. After the variable that contributes most has been selected, the cycle is repeated until there is no significant

TABLE I
Association of characteristics with occurrence of an attempt

Characteristic	χ^2	n	P	w
Suicidal thoughts[1]	382.98	4581	0.00	0.29
Thoughts about death[1]	217.90	4627	0.00	0.22
Use of hard drugs[1]	104.72	4526	0.00	0.15
Use of soft drugs[1]	98.84	4614	0.00	0.15
Living situation[1]	64.44	4630	0.00	0.12
Use of alcohol[1]	28.43	4549	0.00	0.08
Sex[1]	21.92	4646	0.00	0.07
Divorce of parents[1]	17.53	4633	0.00	0.06
Deaths outside immediate family[1]	13.64	4488	0.00	0.06
Unemployment father[1]	11.83	4412	0.00	0.05
Class size	9.52	4657	0.02	0.04
School type	7.19	4656	0.03	0.04
Nationality	6.34	4635	0.01	0.04
No. of students at school	2.88	4643	0.09	0.03
Employment mother	2.01	4519	0.16	0.02
Deaths of immediate family members	1.70	4399	0.64	0.02
Denomination of school	1.06	4657	0.79	0.03
Age	0.77	4626	0.68	0.01
No. of siblings	0.76	4657	0.38	0.01
Employment of father	0.54	4474	0.76	0.01
Size of municipality	0.00	4657	0.99	0.00

1. Characteristics admitted for subsequent analyses.

improvement of the 'fit' of the model. Table II presents the results of the analysis with sociodemographic variables.

In Table II the *F*-value (the *F*-to-remove) refers to the possible deterioration of the model if a relevant variable were to be removed. Unlike the coefficients, this value does not directly depend on the coding and is therefore a better measure for the differences between the discriminating values of the relevant characteristics. The standard error and the ratio of coefficient to standard error can both be interpreted as the measure for stability of the coefficient. For this an absolute ratio larger than 2 is desirable (Engelman, 1983).

The degree of agreement with the statement "Recently, I have been thinking: I am going to end my life" was the most predictive, both univariate (Table I) as well as in combination with other variables. The rank of 'thoughts about death' in Table I changes when it is examined in relation to 'suicidal thoughts'. In that case 'sex' becomes the 'second best' variable because 'thoughts about death' is related more strongly to 'suicidal thoughts'. 'Death outside immediate family' and 'unemployment of father' are not included in the model (Table II). Despite the discriminative capability of these variables when considered as a univariate, they did not seem to add anything to the model.

Questionnaire scores

Similar to the procedure for the variables described above, the difference between attempters and normals with respect

TABLE II
Relationships between a combination of characteristics and occurrence of an attempt

Characteristic	F	P	*Coefficient*	*s.e.*	*Ratio of coefficient: s.e.*
Suicidal thoughts[1]	37.76	0.00	0.83	0.12	6.71
Sex[1]	15.62	0.00	−0.66	0.15	−4.32
Use of soft drugs[1]	14.37	0.00	−0.74	0.18	−4.19
Divorce of parents[1]	7.71	0.01	−0.69	0.23	−3.03
Use of alcohol[1,2]	3.59	0.01			
first dummy variable			0.48	0.51	0.93
second dummy variable			0.26	0.23	1.11
third dummy variable			−0.55	0.30	−1.86
fourth dummy variable			−0.91	0.32	−2.86
Living situation[1,2]	3.55	0.01			
first dummy variable			1.24	0.44	2.83
second dummy variable			−1.35	0.57	−2.35
third dummy variable			−0.40	0.41	−0.96
Thoughts about death[1]	4.68	0.03	0.28	0.12	2.36
Use of hard drugs[1]	3.87	0.05	−0.73	0.34	−2.15
Death of others[3]	1.24	0.27			
Unemployed father[3]	0.68	0.51			
Constant	25.86	0.00	−2.93	0.53	−5.55

1. Characteristics admitted for subsequent analyses.
2. For the variables living situation and use of alcohol, dummy variables are generated by the programme each with a coefficient of their own.
3. With these characteristics the *F*-to-enter counts since they are not included in the model.

https://doi.org/10.1192/bjp.156.2.243 Published online by Cambridge University Press

to the scores on the questionnaires were examined first for each questionnaire. To this end, we used the *t*-test and calculated its relevant effect size *d* (Cohen, 1977). The attempters were more depressed and hopeless, had less self-esteem, were less rational, and had a more negative perception of the relationship with the parents than the normals. These differences are significant at $P<0.001$, and the *d*-value was greater than unity for all scales. According to Cohen (1977) this indicates a 'large' difference between both groups. An exception to this is found for the RBI with 0.35 for the value of *d*, indicating a 'small' to 'medium' difference.

Next, a logistic regression analysis was used to examine the scores of the questionnaires for their interdependence on the occurrence of a suicide attempt. This is also relevant because of the considerable inter-relatedness of the questionnaires (Kienhorst, 1988). Table III gives the results of the logistic regression analysis.

The SDS takes up the most significant position in the combination of the questionnaire scores in predicting the occurrence of an attempt (Table III). The DACL was not included in the model, as it had too much variance in common with the SDS in order to be of any significance to the model (the correlation between the SDS and DACL was 0.56). A remarkable development becomes manifest with respect to the RBI: on the basis of a univariate analysis, suicide attempters scored less (i.e. were less rational) on this list. When added to the model that includes the other questionnaires the direction, however, changes: a higher score on the RBI indicates an increased risk. However, the RBI has a coefficient that is the least stable, and the ratio does not exceed the desired absolute value of 2.

A set of predictive characteristics for suicide

In order to find a set of characteristics that will predict an attempt most accurately, various combinations of the characteristics from Tables II and III were examined by logistic regression comparisons. The combination presented in Table IV produced the best 'goodness of fit' (Engelman, 1983) (Hosmer's $\chi^2=0.707$; Brown's $\chi^2=0.812$).

Table IV shows the variables which provide the largest unique contribution to the prediction of suicide attempts. The variable 'thinking about suicide' was the most predictive variable. The variable 'use of soft drugs' provided the next largest, unique contribution, followed by the score on the SDS, etc. With respect to the combination of characteristics that was ultimately found, taking the inter-relatedness into account, the following may be stated: adolescents with more frequent suicidal thoughts, feelings of depression and of hopelessness, and with a more negative perception of the relationship with their parents, adolescents who use drugs, have divorced parents and are girls are more likely to attempt suicide.

It is also possible to predict group membership for each person, by means of the regression comparison of Table IV, and then to trace the group in which that person is actually located. The results of this analysis are given in Table V. A person was classified as an 'attempter' if there was a suicide risk larger than 2.16% (the risk in the population). The sensitivity (the number of cases correctly classified as attempters) was 73%, and the specificity (proportion correctly classified as non-attempters) was 85%.

Validation

All of the above analyses were carried out in the construction group. The results found in the construction group were supported when validated by means of the validation group (Table V), with 64% of the attempters classified correctly. Moreover, as in the construction group, the specificity was 85%. Thus the regression model produced consistent results.

Discussion

Adolescent suicide attempters have seldom been described on the basis of the data gathered from 'normal', non-clinical samples. Usually, research is

TABLE III

Relationships between a combination of the scores on the questionnaires[1] and the occurrence of an attempt

Characteristic	F	P	*Coefficient*	*s.e.*	*Ratio of coefficient: s.e.*
SDS[2]	33.79	0.00	−1.08	0.18	−6.06
Hopelessness scale[2]	10.21	0.00	−0.40	0.12	−3.33
Family scale[2]	8.62	0.00	−0.48	0.16	−3.06
Self-esteem scale[2]	7.98	0.00	0.31	0.11	2.95
RBI[2]	3.12	0.08	−0.42	0.23	−1.84
DACL[3]	1.84	0.18			
Constant[2]			8.03	1.08	7.43

1. Due to the limitations of the BMDP programme, the scores on the questionnaires have been reduced to a five-point scale.
2. Characteristics admitted for subsequent analyses.
3. With this characteristic the *F*-to-enter counts since it is not included in the model.

TABLE IV
Relationships between the combination of characteristics and score totals on the questionnaires, and occurrence of an attempt

Characteristics	F	P	*Coefficient*	*s.e.*	*Ratio of coefficient: s.e.*
Suicidal thoughts[1]	75.29	0.00	0.74	0.09	8.49
Use of soft drugs[1,2]	34.41	0.00	−0.83	0.14	−5.74
SDS[1]	11.22	0.00	−0.58	0.18	−3.28
Hopelessness scale[1]	8.05	0.00	−0.35	0.12	−2.78
Divorce of parents[1]	5.43	0.02	−0.33	0.14	−2.28
Sex[1]	5.36	0.02	−0.28	0.12	−2.27
Family scale[1]	3.28	0.07	−0.30	0.18	−1.77
Thoughts of death[2]	1.57	0.21			
Constant[1]			2.44	0.70	3.49

1. Characteristics included in the model.
2. With this characteristic the *F*-to-enter counts since it is not included in the model.

TABLE V
Classification results of the logistic regression model: observed versus predicted divisions of attempters in the construction and validation groups

	Observed group membership							
	Construction group				*Validation group*			
	Attempters		*Non-attempters*		*Attempters*		*Non-attempters*	
	n	%	n	%	n	%	n	%
Predicted group membership								
Attempters	74	73	674	15	65	64	661	15
Non-attempters	27	27	3882	85	37	36	3894	86
Totals	101	100	4556	100	102	100	4555	100

carried out on suicide attempters from emergency departments (e.g. Hawton *et al*, 1982; Taylor & Stansfeld, 1984) or from psychiatric clinics (e.g. Stanley & Barter, 1970; Stober, 1981; Hobrücker, 1983; Khan, 1987) or from 'normal' control groups (Hobrücker, 1983). Occasionally, a comparable part of the general population is used (Kienhorst *et al*, 1987*b*).

The present study found almost the same differentiating characteristics as the studies of clinical samples cited above. Although the results require replication, the tentative conclusion may be drawn that the data gathered in this field from clinical groups can be generalised for the total population. Although the differences are the same in nature, it is difficult to compare the extent of the differences, although this investigation might suggest slighter degrees of differences.

From the multivariance analyses it appears that the role of 'psychological factors' (e.g. depression, self-concept) is more important with respect to suicidal behaviour in youngsters than the role of sociodemographic factors (such as sex, divorce of parents). However, the completion of the self-report questionnaires may be influenced by the mood of the respondent (Teasdale, 1983). This mood may be affected by the recollection of a suicide attempt, and the more 'psychological' characteristics in particular may have been influenced.

On the basis of the replication that has been carried out we can argue that our 'predictive' set of characteristics is stable. The model classified 73% of the attempters correctly (sensitivity), and of the non-attempters 85% correctly (specificity). If we were to examine whether our found set of characteristics can serve as suitable basis for an instrument to screen for suicidal behaviour in youngsters, 10% of those identified as at risk by the model actually attempted suicide. One may ask whether the screening is effective or efficient for the

remaining 90%, incorrectly classified as attempters, but it may be argued that the model has reduced a sample of 10 000 students to approximately 1300 students who, with respect to the examined characteristics, are all similar to 73% of the suicide attempters, and prevention could first be directed towards such a problematic group (see Brown & Sheran, 1972; Motto & Heilbron, 1976).

Acknowledgements

We wish to thank Professor G. J. Mellenbergh for his statistical and methodological support. This study was made possible by financial support from the Prevention Fund and the Fund for Research in Social Services from the Department of Welfare, Health, and Cultural Affairs, the Netherlands.

References

BECK, A. T., WEISMANN, A., LESTER, D., *et al* (1974) The measurement of pessimism: the hopelessness scale. *Journal of Consulting and Clinical Psychology*, **42**, 861–865.

BERMAN, A. L. & CARROLL, T. A. (1984) Adolescent suicide: a critical review. *Death Education*, **8** (suppl.), 53–64.

BROWN, T. R. & SHERAN, T. J. (1972) Suicide prediction, a review. *Life Threatening Behavior*, **2**, 67–97.

COHEN J. (1977) *Statistical Power Analysis for the Behavioral Sciences* (revised edn). New York: Academic Press.

DIXON, W. J. (ed.) (1983) *BMDP Statistical Software*. Berkeley: University of California Press.

ELLIS, A. (1962) *Reason and Emotion in Psychotherapy*. New York: Lyle Stuart.

ENGELMAN, L. (1983) Stepwise logistic regression. In *BMDP Statistical Software* (ed. W. J. Dixon). Berkeley: University of California Press.

GARFINKEL, B. D., FROESE, A. & HOOD, J. (1982) Suicide attempts in children and adolescents. *American Journal of Psychiatry*, **139**, 1257–1261.

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

HABERMAN, S. J. (1974) *The Analysis of Frequency Data*. Chicago: University of Chicago Press.

HAWTON, K., O'GRADY, J., OSBORN, M., *et al* (1982) Adolescents who take overdoses: their characteristics, problems and contacts with helping agencies. *British Journal of Psychiatry*, **140**, 118–123.

—— & OSBORN, M. (1984) Suicide and attempted suicide in children and adolescents. In *Advances in Clinical Child Psychology* (eds B. B. Lahey & A. E. Kazdin). New York: Plenum Press.

HERJANIC, B. & WELNER, Z. (1980) Adolescent suicide. *Advances in Behavioral Paediatrics*, **1**, 195–223.

HOBRÜCKER, B. (1983) Die Persönlichkeit von Jugendlichen mit Suizidhandlungen: Stichprobenvergleich und Klassifikation. *Praxis der Kinderpsychologie*, **32**, 105–144.

KHAN, A. U. (1987) Heterogeneity of suicidal adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, **1**, 92–96.

KIENHORST, C. W. M. (1988) *Suicidaal gedrag bij jongeren. Onderzoek naar omvang en kenmerken*. (Suicidal behaviour among children and adolescents. A study of the frequency and characteristics). Thesis, Baarn: Ambo.

——, VAN DEN BOUT, J. & BROESE VAN GROENOU, M. I. (1987*a*) Meet de Rational Behavior Inventory (RBI) rationaliteit of affect? (Does the Rational Behavior Inventory (RBI) assess rationality or affect?) *Gedragstherapie*, **20**, 51–61.

——, WOLTERS, W. H. G., DIEKSTRA, R. F. W., *et al* (1987*b*) A study of the frequency of suicidal behavior in children aged 5 to 14. *Journal of Child Psychology and Psychiatry*, **28**, 153–165.

——, DE WILDE, E. J., VAN DEN BOUT, J., *et al* (1990) Psychometrische eigenschappen van een aantal zelfrapportagevragenlijsten over '(on)welbevinden'; een onderzoek bij 9393 leerlingen van het Voortgezet Onderwijs. (Psychometric characteristics of some self-report questionnaires concerning 'well-being'; a study among 9393 students of secondary education). *Nederlands Tijdschrift voor de Psychologie* (in press).

LUBIN, B. (1967) *Depression Adjective Checklist: Manual*. San Diego: Education and Industrial Testing Service.

MCINTIRE, M. S., ANGLE, C. R., WIKOFF, R. L., *et al* (1977) Recurrent adolescent suicidal behavior. *Pediatrics*, **60**, 605–608.

MOTTO, J. A. & HEILBRON, D. C. (1976) Development and validation of scales for estimation of suicide risk. In *Suicidology, Contemporary Developments* (ed. E. S. Schneidman). New York: Grune and Stratton.

OFFER, D., OSTROV, E. & HOWARD, K. I. (1982) *The Offer Self-Image Questionnaire for Adolescents, A Manual* (3rd edn). Chicago: Michael Reese Hospital and Medical Center.

OTTO, U. (1972) Suicidal acts by children and adolescents. *Acta Psychiatrica Scandinavica* (suppl. 33), 7–123.

PETZEL, S. V. & RIDDLE, M. (1981) Adolescent suicide: psychosocial and cognitive aspects. In *Adolescent Psychiatry, Part 4: Adolescent suicidology* (ed. A. D. Sorosky), Chicago: University of Chicago.

ROSENBERG, M. (1965) *Society and the Adolescent's Self Image*. Princeton: Princeton University Press.

SHORKEY, C. T. & WITEMAN, V. L. (1977) Development of the Rational Behavior Inventory: initial validity and reliability. *Educational and Psychological Measurement*, **37**, 527–534.

SMITH, K. & CRAWFORD, S. (1986) Suicidal behavior among "normal" high school students. *Suicide and Life-Threatening Behavior*, **16**, 313–325.

STANLEY, E. J. & BARTER, J. T. (1970) Adolescent suicidal behavior. *American Journal of Orthopsychiatry*, **40**, 87–96.

STOBER, B. (1981) Social environment and suicidal children and adolescents: a comparable study. In *Dépression et Suicide* (ed. J. P. Soubrier). Paris: Pergamon Press.

TAYLOR, E. A. & STANSFELD, S. A. (1984) Children who poison themselves: 1. A clinical comparison with psychiatric controls. *British Journal of Psychiatry*, **145**, 127–135.

TEASDALE, J. D. (1983) Negative thinking in depression: cause, effect or reciprocal relationship? *Advances in Behavior Research and Therapy*, **5**, 3–25.

THYER, B. A. & PAPSDORF, J. D. (1981) Concurrent validity of the Rational Behavior Inventory. *Psychological Reports*, **48**, 255–258.

ZUNG, W. (1965) A self-rating depression scale. *Archives of General Psychiatry*, **12**, 63–70.

*C. W. M. Kienhorst, *Lecturer in Clinical Psychology, University of Utrecht and University of Leiden*; E. J. de Wilde, *Lecturer in Clinical Psychology, University of Utrecht*; J. Van den Bout, *Senior Lecturer in Clinical Psychology, University of Utrecht*; R. F. W. Diekstra, *Professor of Clinical Psychology, University of Leiden*; W. H. G. Wolters, *Senior Lecturer in Child Psychology, University of Utrecht, The Netherlands*

*Correspondence: *Psycho-Social Department of the Wilhelmina Children's Hospital, PO Box 18009, 3501 CA Utrecht, The Netherlands*