CROATIAN MEDICAL JOURNAL
CMJ

44(5):553-557,2003

PUBLIC HEALTH

Feelings of Inferiority and Suicide Ideation and Suicide Attempt among Youth

Renee D. Goodwin, Andrej Marušič[1]

Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY, USA; and [1]Institute of Public Health of the Republic of Slovenia, Ljubljana, Slovenia

Aim. To determine the association between feelings of inferiority and suicidal ideation and suicide attempt among youth in the United States.

Methods. Data were drawn from the National Comorbidity Survey carried out among a representative sample of the 15-54 year old population (n = 8,098) in the United States. The subsample analyzed in this study included 1,456 respondents aged 15-19. Multivariate logistic regression analyses were used to determine the relationship between feelings of inferiority and the likelihood of suicidal ideation and suicide attempt among youth them.

Results. Among the youth, 4.2% described themselves as having feelings of inferiority. Feelings of inferiority were associated with a significantly increased odds of suicidal ideation (odds ratio (OR) = 3.2; 95% confidence interval (95%CI) = 1.8-5.7) and suicide attempt (OR = 2.2; 95%CI = 1.0-4.8), which persisted after adjusting for differences in socio-demographic characteristics and comorbid mental disorders among youth in the community. There was evidence of interaction between feelings of inferiority and major depression in the likelihood of suicide attempt.

Conclusions. This preliminary evidence suggests that feelings of inferiority are associated with a significantly increased likelihood of suicidal thoughts and suicidal behavior among youth in the community. Intervention and prevention strategies aimed at identifying and intervening with youth at risk may benefit from the assessment of feelings of inferiority.

Key words: *adolescent; adolescent psychiatry; comorbidity; suicide, attempted; United States*

Suicide ideation, suicide attempts, and suicide completion are a major public health problem among adolescents and young adults worldwide (1). Suicide ideation and suicide attempt are associated with subjective distress, social and occupational impairment, and increased rates of mental disorders (2-5). Previous suicide ideation and behavior is the strongest predictor of suicide completion (6,7). Despite recently intensified research in risk factors of suicide ideation and suicide attempt, an increase in suicide prevention programs, and efforts aimed at identifying those at risk, the predictors of suicide behavior among youth are not well understood.

Previous studies have identified specific socio-demographic characteristics and mental disorders associated with increased risk of suicidal ideation and behavior (7-11). For example, studies conducted among adolescents have shown that females are overrepresented among suicide ideators and suicide attempters, whereas males are more likely to complete suicide (8,9). Major depressive disorders and substance use disorders are among the strongest psychiatric risk factors for suicide thoughts and behavior among the youth (10,11). Still, these factors do not completely predict or explain the high rates of suicide behavior in this group. A small number of cognitive factors, such as hopelessness, are also associated with increased suicide behavior (12,13).

Numerous studies have shown that hopelessness is a strong, independent correlate of suicide behavior in clinical and epidemiologic studies (12-15). As a result of these findings, the construct of hopelessness is frequently included in studies investigating the predictors of suicidal ideation and behavior. Despite the strong and consistently observed relationship between hopelessness and suicidality, no other single cognitive risk factor has received substantial attention in population-based studies of suicide risk.

Low self-esteem has also been consistently identified as a predictor of suicidal ideation among youth (3,5,16,17). For instance, low self-worth has been associated with increased suicidal ideation among the youth with a history of suicide attempts (16), whereas loss of self-worth acted as an independent correlate of

suicidal behavior, as shown by the study among Norwegian high school students (5). Low self-esteem is also associated with suicidal ideation and suicidal behavior in clinical samples (18-21). Although feelings of inferiority are likely to be closely linked to low self-worth and low self-esteem, they are nevertheless distinct. Specifically, constructs related to feelings of inferiority have been shown to affect health on many levels. A population-based study demonstrated relationship between downward social comparison and increased risk of psychiatric and physical illness across cultures (20). To our knowledge, no previous study has investigated the relationship between feelings of inferiority and suicide ideation and suicide behavior among youth in the population. From a clinical perspective, it seems that feeling one is less worthy or inferior to others could conceivably be linked to thoughts that one might end one's life as one does not deserve to live or wish to continue living. The aim of this study was to determine the relationship between feelings of inferiority and suicidal ideation and suicide attempt among youth in the community, ie, to assess the hypothesis that feelings of inferiority are associated with significantly increased likelihood of suicidal ideation and suicide attempt, independent of mental disorders, among youth.

Subjects and Methods

Subjects

Data on 8,098 individuals aged 15 to 54 years from the non-institutionalized population come from the National Comorbidity Survey of a national probability sample in the United States (22,23). Fieldwork was carried out between September 1990 and February 1992. There was an 82.4% response rate.

Diagnostic Assessment

Psychiatric diagnoses were generated from a modified version of the World Health Organization (WHO) Composite International Diagnostic Interview (24), a structured interview designed for use by trained interviewers who are not clinicians. WHO field trials (25) and National Comorbidity Survey clinical reappraisal studies (25-27) documented acceptable reliability and validity of all the diagnoses. Psychiatric disorders examined here included major depressive, generalized anxiety disorder, agoraphobia, simple phobia, social phobia, non-affective psychosis, conduct disorder, bipolar disorder, alcohol dependence, and substance dependence. Information on the suicide attempt was obtained with a question inquiring about lifetime attempts, which followed a series of questions on plans and ideation. Written informed consent was obtained from each participant after the survey had been fully explained. The subsample used in this study included only respondents aged 15-19 years (n = 1,456).

Assessment of Feeling of Inferiority

A list of self-description questions was presented to each respondent who was then asked to identify to what degree the statement described him or her. The question used in the current study was, "Sometimes I think that I have an inferiority complex." For the purposes of these analyses, the variable was dichotomized into those who responded "very true" (4.2%), referred to in this report as youth with "inferiority", and the comparison group, which consisted of those with all other responses (somewhat true: 12.7%; a little true: 30.2%; and not at all true: 52.1%).

Statistical Analysis

The data were weighted for differential probabilities of selection and non-response. A weight was also used to adjust the sample to approximate the cross-classification of the population distribution on a range of socio-demographic characteristics (22,23).

Pearson's chi-square tests were used to determine relationship between socio-demographic characteristics and mental disorders between those with and without feelings of inferiority. Multivariate logistic regression analyses were used determine the relationship between inferiority and suicidal ideation and inferiority and suicide attempt. Analyses were then adjusted for socio-demographic characteristics and mental disorders. Additional multivariate logistic regression analyses were run with interaction terms for the association between feelings of inferiority and depression, substance dependence and social phobia. We used Stata statistical software (Release 6.0. College Station, TX, USA: Stata Corp; 1999) for all statistical analyses.

Results

Socio-demographic Differences

Feelings of inferiority were significantly more common among women than men (chi-square, 13.9; df = 1, $p < 0.001$). There were no significant differences in age, education, marital status, or income between youth with and without feelings of inferiority.

Mental Disorders

Youth with feelings of inferiority were significantly more likely than those without such feelings to have mental disorders (Table 1). Specifically, inferiority was associated with a significantly higher prevalence of major depression, panic attack, agoraphobia, specific phobia, social phobia, substance dependence, and conduct disorder. Inferiority did not show a significant association with bipolar disorder, alcohol dependence, or generalized anxiety disorder.

Relationship between Inferiority and Suicidal Ideation

Inferiority was associated with a significantly increased likelihood of suicidal ideation (Table 2). This association persisted even after adjusting for differ-

Table 1. Association between feelings of inferiority and mental disorders among youth in the community

	Inferiority feelings (%)		
Mental disorders	no (n = 1,385)	yes (n = 71)	p*
Major depression (n = 223)	8.6	16.5	0.002
Panic attack (n = 87)	1.8	7.7	< 0.001
Generalized anxiety disorder (n = 30)	0.1	1.1	ns
Agoraphobia (n = 116)	2.8	9.8	< 0.001
Specific phobia (n = 157)	6.1	14.3	< 0.001
Social phobia (n = 230)	7.2	17.9	< 0.001
Alcohol dependence (n = 196)	7.4	10.5	ns
Substance dependence (n = 106)	2.0	5.6	0.016
Bipolar disorder (n = 28)	0.1	1.5	ns
Conduct disorder (n = 250)	4.8	6.7	0.016

*Chi-square test; ns – not significant.

Table 2. Association between feelings of inferiority and suicidal ideation and suicide attempt among youth in the community

	Odds ratio (95% confidence interval) for	
Inferiority	suicidal ideation	suicide attempt
Unadjusted	2.58* (1.65-4.04)	2.32* (1.32-4.08)
Adjusted1†	2.46* (1.56-3.88)	2.04* (1.15-3.60)
Adjusted2‡	1.93* (1.13-3.31)	1.39 (0.78-2.46)

*$p < 0.05$.
†Adjusted for differences in age, sex, race, marital status, income, and education.
‡Adjusted for differences in age, sex, race, marital status, income, education, and mental disorders.

ences in socio-demographic characteristics and mental disorders.

Relationship between Inferiority and Suicide Attempt

Inferiority was associated with a significantly increased likelihood of suicide attempt (Table 2). This association persisted after adjusting for differences in socio-demographic characteristics but was no longer statistically significant after adjusting for differences in mental disorders.

Evidence of Interaction between Inferiority and Specific Mental Disorders

Additional multivariate logistic regression models were run, including interaction terms, to test for evidence of interaction between each mental disorder and feelings of inferiority in the likelihood of suicidal ideation and suicide attempts, adjusted for differences in socio-demographic characteristics. Results showed evidence of interaction between feelings of inferiority and panic attack ($p = 0.03$), social phobia ($p = 0.054$), and agoraphobia ($p = 0.06$) in the likelihood of suicidal ideation. There was also evidence of interaction between major depression and inferiority in the likelihood of suicide attempt ($p = 0.054$; data not shown).

Discussion

Our study showed that feelings of inferiority were associated with a significantly increased likelihood of suicidal ideation among youth in the community. This association was independent of differences in socio-demographic characteristics and mental disorders. Our results also indicated that inferiority was associated with significantly increased odds of suicide attempt, which was independent of differences in socio-demographic characteristics, but did not remain statistically significant after adjusting for the influence of mental disorders. Overall, these data suggested that inferiority might act as an independent predictor of suicidal ideation and that it also made a considerable, but not independent, contribution to the likelihood of suicide attempts, for which at least one mental disorder was almost always present. These results also provided preliminary evidence of interaction specifically between anxiety disorders and inferiority in the likelihood of suicidal ideation and between depression and inferiority in the likelihood of suicide attempt.

The reasons for the association between feelings of inferiority and suicidal ideation and suicide attempt are not entirely clear based on our data alone. It seems plausible that feelings of inferiority may result in the belief that life is not worth living, or that ending one's life is an option for coping with intolerable feelings, which may be induced feelings of low self-esteem (17,19). These data are consistent with and extend evidence of an association between low self-esteem and suicidal ideation from clinical and community samples of adolescents (5,19). It is also possible that thoughts of suicide and suicide behavior lead to the onset of feelings of inferiority, yet this potential pathway seems less plausible. Alternatively, it may be that a third, unmeasured factor (e.g., personality factors, such as neuroticism) is associated with the co-occurrence of feelings of inferiority and suicidality among youth. For instance, previous studies have linked personality factors with suicidality and low self-esteem (18).

The belief that one is not as good as others is not difficult to link, theoretically or clinically, with thoughts of ending ones life – in extreme cases. The exclusive use of respondents who strongly endorsed this item, comprising nearly 5% of the sample, is consistent with the selection of a clinically-significant group. Results of our multivariate analyses clearly suggest that there is a stronger relationship, and even some evidence of synergistic interaction, between feelings of inferiority and mental disorder. Interaction between depression and feelings of inferiority in the likelihood of suicide attempt may be useful from a public health intervention perspective. It is also possible that the relationship between feelings of inferiority and suicidal ideation and attempt differs among youth with various mental disorders. For instance, it may be that among youth with social phobia, feelings of inferiority lead to suicidal ideation as an effort to escape intense feelings of low self-esteem, rejection, and painful isolation from peers. Alternatively, youth with depression and feelings of inferiority may experience feelings of worthlessness, and feel that they do not deserve to live, thereby developing suicidal ideation and potentially engage in suicide attempts. Since depression is the most well-documented risk factor for suicide attempt and completion (10,11), but not all who are depressed go on to suicide behavior, detection of those with feelings of inferiority may be helpful in more specifically identifying those who are most at risk among depressed youth.

These results are encouraging inasmuch as they suggest that effective intervention on feelings of inferiority, which may be more easily identified, may diagnose a mental disorder. However, it is not clear what sort of intervention strategies might be used to intervene on inferiority (e.g., mentoring or health promotion programs in schools). It seems possible that these approaches could be applied population-wide, in a preventive manner. They could also have fewer side effects than traditional interventions with psychotropic medication for depression or other mental disorders, many of which are difficult to detect or overlooked, and therefore untreated in clinical and community settings. There is also an interesting association between inferiority and anxiety (ie, panic attacks, agoraphobia, and social phobia) in the odds of suicidal ideation. This association requires further, more in-depth research to develop an understanding of the clinical significance of this preliminary evidence of synergism between these factors in the likelihood of suicidal ideation.

Limitations of this study include the use of cross-sectional data, which does not allow investigation of the order of onset of feelings of inferiority and suicidal thoughts and behavior. It is not clear how onset of inferiority would be defined, but a longitudinal investigation of this association would likely be useful

in improving understanding of the mechanism of this association. Also, while inferiority can be queried with a single item, future studies that would investigate this issue might consider several questions to probe more deeply the correlates of this construct.

Our findings should be reconfirmed by epidemiological and clinical studies to determine whether and to what degree inferiority is present and related to suicidal ideation and suicide behavior among treatment-seeking youth. From a public health perspective, the identification of characteristics that are easily detectable and modifiable is needed for the improved effectiveness and ultimate success of suicide prevention programs. Replication of these findings in community-based samples can provide information on the extent to which inferiority has potential in this capacity. Inquiry about feelings of inferiority is feasible with a single question, as evidenced by our study. As there are few studies that have identified population-based correlates of suicidality other than sociodemographic characteristics and mental disorders, these results may reveal a needed but previously overlooked area for future research in suicidology. Given that previous research has shown that major depression is among the strongest risk factors for suicide ideation and behavior among youth (10,11), it is especially noteworthy to see an interaction emerge specifically between feelings of inferiority and major depression. Future research that explores this preliminary evidence of synergism between inferiority and mental disorders in the risk of suicidality seems warranted. In light of the strength and pervasiveness with which the construct of hopelessness (12-15) has been shown to identify risk for suicidal behavior, and the previously noted association between low self-esteem and suicidality in treated samples (19), further investigations, especially those using longitudinal epidemiological data of youth, may be fruitful.

References

1 Crosby AE, Cheltenham MP, Sacks JJ. Incidence of suicidal ideation and behavior in the United States, 1994. Suicide Life Threat Behav 1999;29:131-40.

2 King RA, Schwab-Stone M, Flisher AJ, Greenwald S, Kramer RA, Goodman SH, et al. Psychosocial and risk behavior correlates of youth suicide attempts and suicidal ideation. J Am Acad Child Adolesc Psychiatry 2001;40:837-46.

3 van Heeringen C. Suicide in adolescents. Int Clin Psychopharmacol 2001;16 Suppl 2:S1-6.

4 Goldney RD, Wilson D, Dal Grande E, Fisher LJ, McFarlane AC. Suicidal ideation in a random community sample: attributable risk due to depression and psychosocial and traumatic events. Aust N Z J Psychiatry 2000;34:98-106.

5 Wichstrom L. Predictors of adolescent suicide attempts: a nationally representative longitudinal study of Norwegian adolescents. J Am Acad Child Adolesc Psychiatry 2000;39:603-10.

6 Pfeffer CR, Jiang H, Kakuma T. Child-Adolescent Suicidal Potential Index (CASPI): a screen for risk for early onset suicidal behavior. Psychol Assess 2000;12: 304-18.

7 Fergusson DM, Woodward LJ, Horwood LJ. Risk factors and life processes associated with the onset of suicidal behaviour during adolescence and early adulthood. Psychol Med 2000;30:23-39.

8 Prigerson HG, Slimack MJ. Gender differences in clinical correlates of suicidality among young adults. J Nerv Ment Dis 1999;187:23-31.

9 de Man AF. Correlates of suicide ideation in high school students: the importance of depression. J Genet Psychol 1999;160:105-14.

10 Ialongo NS, Edelsohn G, Kellam SG. A further look at the prognostic power of young children's reports of depressed mood and feelings. Child Dev 2001;72: 736-47.

11 Borges G, Walters EE, Kessler RC. Associations of substance use, abuse, and dependence with subsequent suicidal behavior. Am J Epidemiol 2000;151:781-9.

12 Goldston DB, Daniel SS, Reboussin BA, Reboussin DM, Frazier PH, Harris AE. Cognitive risk factors and suicide attempts among formerly hospitalized adolescents: a prospective naturalistic study. J Am Acad Child Adolesc Psychiatry 2001;40:91-9.

13 Wagner KD, Rouleau M, Joiner T. Cognitive factors related to suicidal ideation and resolution in psychiatrically hospitalized children and adolescents. Am J Psychiatry 2000;157:2017-21.

14 Stravynski A, Boyer R. Loneliness in relation to suicide ideation and parasuicide: a population-wide study. Suicide Life Threat Behav 2001;31:32-40.

15 Kaltiala-Heino R, Rimpela M, Marttunen M, Rimpela A, Rantanen P. Bullying, depression, and suicidal ideation in Finnish adolescents: school survey. BMJ 1999;319: 348-51.

16 van Heeringen C, Vincke J. Suicidal acts and ideation in homosexual and bisexual young people: a study of prevalence and risk factors. Soc Psychiatry Psychiatr Epidemiol 2000;35:494-9.

17 Shrier LA, Harris SK, Sternberg M, Beardslee WR. Associations of depression, self-esteem, and substance use with sexual risk among adolescents. Prev Med 2001; 33:179-89.

18 McGee R, Williams S. Does low self-esteem predict health compromising behaviours among adolescents? J Adolesc 2000;23:569-82.

19 Laukkanen E, Korhonen V, Peiponen S, Nuutinen M, Viinamaki H. A pessimistic attitude towards the future and low psychosocial functioning predict psychiatric diagnosis among treatment-seeking adolescents. Aust N Z J Psychiatry 2001;35:160-5.

20 Johnson JG, Cohen P, Dohrenwend BP, Link BG, Brook JS. A longitudinal investigation of social causation and social selection processes involved in the association between socioeconomic status and psychiatric disorders. J Abnorm Psychol 1999;108:490-9.

21 Roberts RE, Roberts CR, Chen YR. Suicidal thinking among adolescents with a history of attempted suicide. J Am Acad Child Adolesc Psychiatry 1998;37:1294-300.

22 Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, et al. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: results from the National Comorbidity Survey. Arch Gen Psychiatry 1994;51:8-19.

23 Kessler RC, Little RJ, Groves RM. Advances in strategies for minimizing and adjusting for survey nonresponse. Epidemiol Rev 1995;17:192-204.

24 World Health Organization. Composite International Diagnostic Interview (CIDI), version 1.0. Geneva: WHO; 1990.

25 Wittchen HU, Kessler RC, Zhao S, Abelson J. Reliability and clinical validity of UM-CIDI DSM-III-R generalized anxiety disorder. J Psychiatr Res 1995;29:95-110.

26 Wittchen HU. Reliability and validity studies of the WHO – Composite International Diagnostic Interview (CIDI): a critical review. J Psychiatr Res 1994;28:57-84.

27 Wittchen HU, Zhao S, Abelson JM, Abelson JL, Kessler RC. Reliability and procedural validity of UM-CIDI DSM-III-R phobic disorders. Psychol Med 1996;25: 1169-77.

Received: July 17, 2003
Accepted: September 15, 2003

Correspondence to:
Renee D Goodwin
1051 Riverside Drive, Unit 43
10032 New York, NY, USA
rdg66@columbia.edu