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## Sex Differences in Clinical Predictors of Suicidal Acts After Major Depression: A Prospective Study

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### Abstract

**Objective**—Whether sex differences exist in clinical risk factors associated with suicidal behavior is unknown. The authors postulated that among men with a major depressive episode, aggression, hostility, and history of substance misuse increase risk for future suicidal behavior, while depressive symptoms, childhood history of abuse, fewer reasons for living, and borderline personality disorder do so in depressed women.

**Method**—Patients with DSM-III-R major depression or bipolar disorder seeking treatment for a major depressive episode (N=314) were followed for 2 years. Putative predictors were tested with Cox proportional hazards regression analysis.

**Results**—During follow-up, 16.6% of the patients attempted or committed suicide. Family history of suicidal acts, past drug use, cigarette smoking, borderline personality disorder, and early parental separation each more than tripled the risk of future suicidal acts in men. For women, the risk for future suicidal acts was sixfold greater for prior suicide attempters; each past attempt increased future risk threefold. Suicidal ideation, lethality of past attempts, hostility, subjective depressive symptoms, fewer reasons for living, comorbid borderline personality disorder, and cigarette smoking also increased the risk of future suicidal acts for women.

**Conclusions**—These findings suggest that the importance of risk factors for suicidal acts differs in depressed men and women. This knowledge may improve suicide risk evaluation and guide future research on suicide assessment and prevention.

Sex differences in suicidal behavior have long been recognized (1–5). Studies have shown that men have higher suicide rates (1), while women are at higher risk for suicide attempts (2, 5). Possible explanations include differences in the propensity to use lethal means, suicidal intent, and the use of substances within the context of suicidal behavior (3, 6).

Few cross-sectional studies have compared sex differences in the characteristics of suicide attempters. Adolescent male suicide victims are more likely to have conduct and substance use disorders, while female adolescents more frequently suffer from mood or anxiety disorders and have attempted suicide before (6). Among adolescents and young adults (2), female attempters were more likely to have posttraumatic stress disorder; attempts by males were more often triggered by financial problems. Four prospective studies (7–10) have compared risk factors for suicidal behavior in the two genders. Two studies of overlapping study groups examined 1,026 depressed melancholic inpatients and showed that, compared to matched depressed comparison subjects, female suicide victims more often were unmarried, were noncompliant with treatment, and had previously attempted suicide, while

suicide in men was related to heredity for psychosis and brittle or sensitive personality (7, 9). Another multisite prospective study of 3,130 teenagers assessed anger at oneself, anger at society, and suicidal ideation (8). Although an initial correlation between self-directed anger and subsequent suicidal ideation was noted in young men only, this correlation diminished over time. Finally, a 10-year prospective study of depressed or bipolar subjects (N=955), most of whom were inpatients, showed similar risk factors for suicidal acts in men and women once differences in the frequency of alcohol and drug abuse and having children under age 18 were taken into account (10).

Across diagnoses, suicide attempters are typically women (11). To investigate potential contributors to differences in rates and types of suicidal behavior in the two sexes, we examined the predictive power of putative risk factors for suicidal acts identified in our previous cross-sectional (11) and prospective (12) studies, hoping to identify clinical characteristics for men and women at high risk for suicidal acts at the time they sought treatment for a major depressive episode. We hypothesized that, apart from a history of attempted suicide, variables predicting suicidal acts would differ between the sexes. We postulated that aggression, hostility, and a history of substance use disorders would predict future suicidal behavior in men, while depressive symptoms, childhood history of abuse, fewer reasons for living, and comorbid borderline personality disorder would do so in women.

## Method

### Subjects

Written informed consent was given by 184 female and 130 male patients, ages 18–75 years, who had major depressive disorder or bipolar disorder according to the Structured Clinical Interview for DSM-III-R and were seeking treatment of a major depressive episode; 80% were inpatients. The exclusion criteria were current substance or alcohol abuse and active medical conditions that could confound characterization of psychopathology and diagnosis. The patients received naturalistic treatment in the community and were evaluated 3 months, 1 year, and 2 years after discharge. There were no differences in age, sex, inpatient status, suicide attempt history, cluster B personality disorder, or depression severity between the patients lost to follow-up and those who completed at least one assessment. Each follow-up interview assessed suicidal behavior during the intervening time period.

### Assessment

Ratings were conducted by trained clinicians with at least a master's degree (including A.K.B.) or by trained psychiatric nurses. Interrater reliability intraclass correlations ranged from 0.80 to 0.96.

The patients were evaluated as previously described (12). Briefly, the measures included the International Personality Disorder Examination (13), the Structured Clinical Interview for DSM-III-R Personality Disorders (SCID-II) (14), the 17-item Hamilton Depression Rating Scale (HAM-D), the Beck Depression Inventory (BDI), the Brief Psychiatric Rating Scale (BPRS), the Brown-Goodwin Aggression Scale (15), the Buss-Durkee Hostility Inventory (16), the Barratt Impulsivity Scale (17), the St. Paul-Ramsey Questionnaire for measuring life stressors (unpublished 1978 instrument of A.E. Lumry), the Beck Hopelessness Scale (18), the Reasons for Living Inventory (19), and the Global Assessment Scale (GAS) (20). Childhood physical or sexual abuse and early parental separation were rated present or absent. Cigarette smoking was assessed as present or absent.

A suicide attempt was defined as a self-destructive act with intent to end one's life. The number, method, and degree of medical damage of suicide attempts were recorded by using

the Columbia Suicide History Form (21). Suicidal ideation was assessed by using the Scale for Suicide Ideation (22). Intent and severity of medical injury were recorded by using the Suicide Intent Scale (23) and Lethality Rating Scale (23), respectively.

## Statistical Methods

Clinical and demographic characteristics of both sexes at baseline were compared by means of two-sample t tests, nonparametric Wilcoxon tests, and chi-square statistics as appropriate. Second, sex differences in the time to a suicidal act were tested by a Cox proportional hazards regression model. Third, for each sex, the risk of suicide attempt or completion in the 2-year follow-up period was evaluated by using univariate Cox analysis with time to first attempt as the dependent variable and putative risk factors as predictors. Scale and continuous variables were entered as linear effects. Finally, a Cox multivariate analysis with all significant risk factors as predictors assessed the relative importance of these factors in predicting a future suicidal act for men and women separately.

## Results

### Baseline Characteristics of Subjects

At the initial assessment, men and women did not differ in age, marital status, number of children, educational level, cigarette use, or family history of suicidal acts (Table 1). More depressed women than men had made suicide attempts (Table 2). However, they did not differ in suicidal ideation, suicidal intent, or severity of the medical damage caused by the most lethal attempt. Men and women had similar levels of impulsivity, hopelessness, hostility, reasons for living, psychiatric impairment, and frequency of early parental separation (Table 2).

A higher proportion of depressed men had past alcohol or drug abuse, and men reported more aggression than women. Women had higher rates of childhood abuse and comorbid borderline personality disorder, and they had earlier onsets of major depression and greater severity of both subjective and objective depression.

### Follow-Up of Men and Women: Univariate Analyses

During the 2-year follow-up, four subjects completed suicide and 48 attempted suicide, representing 16.6% of the study group. Men and women were followed for similar periods of time, but women were more likely to attempt suicide than men in the follow-up period (hazard ratio= 1.8, likelihood ratio  $\chi^2=4.09$ ,  $df=1$ ,  $p<0.05$ ) (Figure 1).

For men, the odds of a future suicidal act were threefold greater if they had made a prior attempt; this increase fell short of statistical significance. Additionally, family history of suicidal acts increased the risk threefold. As hypothesized, drug use and cigarette smoking each more than tripled and quadrupled, respectively, the risk of suicidal acts during follow-up. Comorbid borderline personality disorder and early parental separation also increased the risk of suicidal acts (Table 3). There was a nonsignificant tendency of aggression, but not hostility, to predict future suicidal acts.

Although we hypothesized that depressed women with previous suicide attempts would have a greater risk for future suicidal acts, we did not anticipate the magnitude of this effect: a sixfold increase. Moreover, each prior attempt increased the risk of a future suicidal act by one-third. Suicidal ideation and lethality of past attempts also increased the risk of future suicidal acts for women (Table 3). As hypothesized, greater subjective depression, fewer perceived reasons for living, and borderline personality disorder also increased the risk of a suicide attempt during follow-up. Like men, female cigarette smokers were at greater risk

for suicidal acts. Contrary to our prediction, hostility was a significant risk factor in women; aggression and impulsivity tended to increase risk as well.

### Follow-Up of Men and Women: Multivariate Analyses

When all significant predictors of suicidal acts for men identified by univariate analyses (Table 3) were evaluated together, cigarette smoking and family history of suicidal acts emerged as the most robust predictors of future suicidal acts (Table 4), but early separation from family, borderline personality disorder, and past drug abuse were no longer predictive. Upon exploring reasons for the decreased effect of drug abuse on future suicidal acts, we found associations between drug abuse in men and smoking (71.1% of men with past drug abuse also smoked,  $p<0.0001$ ), borderline personality disorder ( $p<0.0001$ ), early parental separation ( $p<0.003$ ), and past suicide attempts ( $p<0.03$ ). In fact, the association between past drug abuse and smoking accounted for most of the predictive power of drug abuse among men (hazard ratio for drug abuse adjusted for smoking history=2.15,  $p<0.22$ ); the rest of the effect of drug abuse on future risk was accounted for by the other aforementioned variables.

For women, the multivariate analyses revealed that previous attempts, suicidal ideation, and smoking had independent effects on the risk for suicidal acts (Table 4). The presence of multiple suicide attempts, borderline personality disorder, greater subjective depression, fewer perceived reasons for living, and hostility were no longer significant. The effect of borderline personality disorder on future risk found in the univariate analyses was due to its close association with past attempts (hazard ratio for borderline personality disorder adjusted for previous attempt=1.35,  $p<0.39$ ). Most of the depressed women with borderline personality disorder (81.2%) had past suicide attempts. However, we were unable to demonstrate the effects of hostility in the multivariate analysis, probably because of limitations in statistical power. The predictive power of hostility was not explained by its association with previous attempt history, borderline personality disorder, or any other variable from the model, despite hostility's significant association with both borderline personality disorder and previous suicide attempts. Instead, the hazard ratio for hostility in the multivariate model was close to that from the univariate analysis, but the statistical significance of its predictive power decreased as more variables were added, ultimately resulting in a nonsignificant effect. This statistical limitation also appeared to be at work in the case of reasons for living.

## Discussion

A previous suicide attempt is a powerful predictor of future suicidal acts (12, 24). In this study, men with past suicidal behavior had a threefold, but nonsignificantly, greater risk for future attempts. Women had a significant, sixfold higher risk of a future suicide attempt if they had made past attempts. The large effect among depressed women may be due to the earlier onset of depression among women, perhaps hampering the development of coping skills and rendering them more vulnerable to suicidal behavior. Alternatively, because men often use more lethal means than women, they may be more likely to die as a consequence of suicidal behavior, thus skewing clinical groups toward men with fewer, less lethal attempts.

### Risk Factors for Men

Substance abuse has been reported to predict suicide attempts and completed suicide by people with mood disorders in general (25). In this study group, past drug abuse predicted suicidal behavior in men only, a finding that is consistent with the observation that suicide deaths among men frequently occur within the context of substance use disorders (26). Drug

and alcohol misuse may predispose men to suicidal behavior in the setting of disruptions in important relationships (26). Whether disinhibition (11), serotonergic dysfunction (11) due to drug abuse, interpersonal factors, or a combination of these mediate the effect of drug abuse on future risk in men requires further study.

We expected aggression and hostility to affect future suicidal behavior in men. Our data suggest a 7% increase in risk for future suicidal acts for each point on the aggression scale, but the finding did not reach significance, nor did hostility predict suicidal acts. Although in this group, men reported more aggressive behavior than women, perhaps more aggressive depressed men at risk for suicidal acts do not seek treatment. We do not have data to address this possibility. Nonetheless, it has been noted that anger at oneself predicts suicidal ideation, not acts, in young men living in the community (8). The relationship between anger at oneself and aggression is likely to be complex.

Family history of suicidal acts tripled the risk of future suicidal acts only for the men in our study. Suicidal behaviors cluster in families (27), independent of the transmission of psychiatric conditions (28). A large epidemiologic study (29) showed that a family history of psychiatric disorders increased the risk for suicide completion in both sexes, but it indicated a more robust effect of familial suicide on females than males. Whether family history affects males and females differently is unknown but could be related to genetic contributions from X-linked genes or mitochondrial DNA or differences in child rearing between the sexes. Moreover, the heritability of suicide attempts and completions in the two sexes may differ, resulting in these apparently contradictory results.

For men, early parental separation increased the risk of suicidal acts more than threefold. Early parental loss is a risk factor for suicide in adolescents and young adults regardless of sex (30, 31). One retrospective study (32) demonstrated that early loss, separation, or inadequate child rearing in young men was more strongly associated with death by suicide than with death from car accidents. Differential effects by sex may relate to genetic or rearing differences; perhaps girls can attach to new caretakers more easily in the absence of a parent.

Multivariate analyses uncovered that among depressed men, the predictive power of several of the variables could be explained by their relationship to the increased risk ascribable to cigarette smoking. This finding underscores the need for studies that have comprehensive clinical assessments so that such relationships can be uncovered, leading to accurate predictive models for suicidal behavior.

### **Risk Factors for Women**

We hypothesized that women with more subjective depression, fewer perceived reasons for living, borderline personality disorder, or a history of childhood abuse would be more likely to engage in future suicidal behavior. Except for childhood abuse, these factors were predictive in univariate analyses. Each point increase on the BDI increased the risk for suicidal acts in women by 4%. We previously reported that subjective depression severity is a risk factor for suicidal acts (12). Several studies have examined the predictive capacity of depressive subtype (33–36), but none has focused on sex differences. The 1993 National Mortality Followback Survey (37) found that, compared to women with natural deaths, women who completed suicide had endorsed depressive symptoms at all ages; however, depression was only a factor among older male suicide victims, implying that other conditions, such as alcoholism or substance abuse, are associated with suicide in younger men, such as those included in our study group (mean age=38 years), and that depression as a risk factor for suicide by men appears later in life.

There was an inverse relationship between risk for suicidal behavior and scores on the Reasons for Living Inventory for women. Women may attach more importance to their responsibilities toward children, an important factor assessed by the Reasons for Living Inventory. Studies show that being married is protective for men, whereas having a child under the age of 2 is protective for women (10, 29, 38). Among women, the protective effect of marriage against suicide has been attributed to the effect of having children (38, 39).

For women, the number of previous suicide attempts, suicidal ideation, lethality of prior attempts, and hostility all increased the risk for suicidal acts. Each previous suicide attempt increased the risk of subsequent attempts by over 30%. These findings are consistent with the findings from two prospective studies, in which women who committed suicide had previously attempted suicide but men had not (7, 9). Indeed, despite the similarity between men and women in the levels of suicidal intent, women's use of less lethal means may result in more frequent survival of attempts.

Several (40–42), but not all (12, 43), prospective studies have implicated suicidal ideation as a risk factor for future suicidal acts. Some cross-sectional studies showed greater suicidal ideation in female teens (44, 45), while others showed no sex differences in suicidal ideation, despite higher prevalences of suicidal behavior in women, younger persons, those living alone, and women in urban areas (46). Thus, the predictive capacity of suicidal ideation requires further study.

We found that in women, for each increment in medical damage from the most lethal attempt, future suicidal risk increased by 26%, suggesting that lethality and frequency of suicidal behavior are related in women. This is of concern in light of reports that the proportions of men and women who make medically serious suicide attempts are similar despite the fact that twice as many women use nonlethal methods (47). Examining the medical consequences of attempts made by women may help guide assessment of risk for future suicidal acts.

For women, greater hostility increased the risk for a suicidal act. Hostility in association with depression has been linked to suicidal behavior (11, 48), although why it should be predictive for women only is not clear. As mentioned previously, it is possible that more aggressive, hostile men at risk are not represented in clinical samples.

As was the case among men, multivariate analyses revealed that some of the predictive variables found in the univariate analyses owed their robustness to their association with other variables. Among women, past suicidal behavior explained the effect of borderline personality disorder on the future risk of suicidal acts. The complexity of finding appropriate predictors for rare events cannot be overstated.

### **Risk Factors Affecting Men and Women**

We predicted that borderline personality disorder would increase the risk for suicidal acts in women. However, it also increased the risk for depressed men. Men and women with both major depression and borderline personality disorder have more suicide attempts and objective planning than do those with either diagnosis alone (49). This was the case for the subjects in this study: 81% of the patients with borderline personality disorder had previous attempts. Among the female subjects, a history of suicide attempts accounted for the predictive power of borderline personality disorder. However, for men, the predictive power of borderline personality disorder was only partially explained by previous attempts. An association between “sensitive/brittle” personality and later suicide in depressed men but not women has been reported (7, 9). Brittleness and sensitivity are perhaps more typical of narcissistic personality disorder but may also be consistent with borderline personality



disorder. Although borderline personality disorder is less often diagnosed in men, its presence alongside depression may pose incremental risk for future suicidal behavior.

The only other risk factor that significantly predicted future suicidal behavior in both sexes was cigarette smoking. Cigarette smoking increases the risk for suicidal acts (12, 41, 50) independent of the effects of major depression, alcohol abuse, or drug use (51), and smokers are reported to have more aggressive or impulsive behaviors. Current smokers but not former smokers (52) have lower monoamine oxidase activity, which may result in serotonergic dys-regulation, mediating the association of cigarette smoking with depression and suicide (11).

## Limitations

The inclusion of individuals treated at a university clinic and exclusion of current substance and alcohol users hamper the generalizability of our findings. For example, the exclusion of current substance abusers may explain our finding that aggression and hostility do not predict suicidal behavior in men. We followed the patients for 2 years only, although this is the period of highest risk for suicidal acts. The naturalistic design means that potentially relevant variables, such as the intensity of antidepressant treatment, presence of treatment refractoriness, and the time-varying nature of depressive symptoms, cannot be addressed.

Another limitation is that the statistical analyses to assess sex differences in the hazard ratios by using interaction terms (variable by sex) showed that the interaction terms lacked statistical significance, except in the case of parental separation. These results are reflected in the overlap in confidence intervals for the hazard ratio for women compared to men. It is possible that the smaller number of subjects and fewer future suicidal acts among men led to large differences in the hazard ratio estimates with wide confidence intervals for the two sexes, thus leading to nonsignificant differences. However, we think it is useful to document the hazard ratios within each sex because the order of importance of the individual risk factors differs in men and women. Moreover, in the multivariate models, while previous suicide attempts is an independent predictor for women, among men it is not driving the risk, just “standing in” for other factors.

From a clinical standpoint, the relative lack of protection afforded by reasons for living in men, compared to women, is notable. Furthermore, despite the well-documented fact that men are at greater risk for completed suicide, depressed female suicide attempters appear at relatively greater risk for repeated suicidal behavior. Thus, clinical evaluation may be enhanced by considering the difference between the sexes in the importance of risk factors for suicidal acts.

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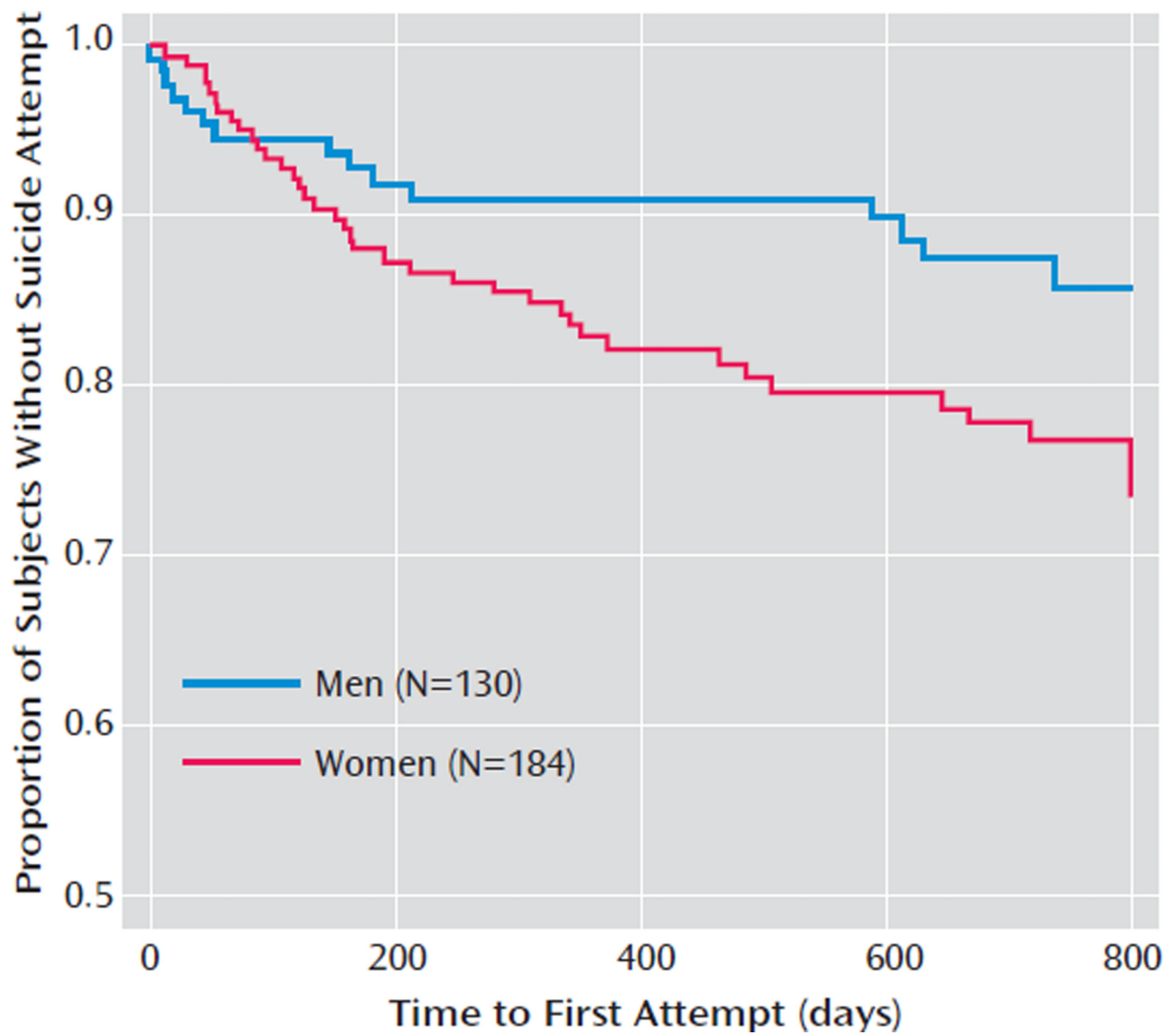
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**FIGURE 1. Nonparametric Survival Curve Estimates of Suicidal Acts by Men and Women in the 2 Years Following a Major Depressive Episode**

<sup>a</sup> Only the first 800 days are shown; the last recorded attempt was at 798 days.

Baseline Demographic Characteristics of Men and Women in a Study of Suicidal Acts in the 2 Years Following a Major Depressive Episode

TABLE 1

Variable	Men (N=130)		Women (N=184)		Analysis	
	Mean	SD	Mean	SD	t	df p
Age (years)	37.51	12.71	37.80	11.37	-0.21	311 0.84
Education (years)	15.24	3.00	14.98	3.05	0.73	299 0.47
	Mean	SD	Mean	SD	$z^a$	p
Number of children	1.1	1.5	1.0	1.3	0.53	0.60
Annual income (dollars)	26,822	33,191	18,215	20,704	1.85	0.06
	N	% <sup>b</sup>	N	% <sup>b</sup>	$z^2$	df p
Married	65	50.0	83	45.4	0.66	1 0.42
Cigarette smoker	55	43.0	66	36.1	1.51	1 0.22
Family history of suicidal acts	20	15.5	27	14.8	0.03	1 0.88

<sup>a</sup>Wilcoxon nonparametric test.

<sup>b</sup>Data were missing for some subjects, so percents were based on varying numbers.

TABLE 2

Baseline Clinical Characteristics of Men and Women in a Study of Suicidal Acts in the 2 Years Following a Major Depressive Episode

Variable	Men (N=130)		Women (N=184)		Analysis	
	N	% <sup>a</sup>	N	% <sup>a</sup>	2	df p
Previous suicide attempt	62	47.7	109	59.2	4.09	1 0.05
Borderline personality disorder	23	18.8	69	38.8	13.50	1 <0.001
Past alcohol or drug abuse	72	55.8	71	38.8	8.82	1 0.003
Early separation from either parent	33	26.0	65	35.7	3.27	1 0.07
Childhood history of abuse	32	29.9	81	48.8	9.57	1 0.002
Mean	SD	Mean	SD	<i>z</i> <sup>b</sup>	p	
Number of depressive episodes, excluding index episode	4.8	5.5	5.4	5.5	-1.66	0.10
Score on Scale for Suicide Ideation (22) for 2 weeks before intake	13.03	10.42	14.41	10.58	-1.03	0.30
Previous suicide attempts Number	2.52	2.05	2.82	2.21	-0.91	0.36
Mean	SD	Mean	SD	t	df	p
Score on Lethality Rating Scale (23) for most lethal attempt	3.61	2.22	3.28	1.96	1.02	168 0.31
Score on Suicide Intent Scale (23)	16.86	5.88	15.55	5.84	1.42	170 0.16
Scores on other psychological tests						
Hamilton Depression Rating Scale	18.85	5.58	20.55	5.99	-2.55	309 0.02
Beck Depression Inventory	25.00	10.15	30.10	11.14	-3.96	283 <0.001
Beck Hopelessness Scale (18)	11.64	5.84	12.60	5.75	-1.39	284 0.17
Reasons for Living Inventory (19)	159.33	44.15	151.31	44.76	1.38	242 0.17
Brief Psychiatric Rating Scale	35.37	7.80	35.10	7.83	0.30	304 0.77
Brown-Goodwin Aggression Scale (15)	19.87	6.14	17.42	5.02	3.82	302 <0.001
Buss-Durkee Hostility Inventory (16)	39.29	11.86	34.60	11.52	1.75	274 0.09
Barratt Impulsivity Scale (17)	52.18	17.46	51.55	16.67	0.29	264 0.77
Age at first major depressive episode (years)	27.1	13.1	23.9	12.6	2.19	304 0.03

<sup>a</sup>Data were missing for some subjects, so percents were based on varying numbers.

<sup>b</sup>Wilcoxon nonparametric test.



Univariate Cox Proportional Hazards Regression Models Predicting Suicidal Acts by Men and Women in the 2 Years Following a Major Depressive Episode

TABLE 3

Baseline Variable	Men (N=130)			Women (N=184)		
	Hazard Ratio	95% CI	p	Hazard Ratio	95% CI	p
Age <sup>a</sup>	0.88	0.70–1.10	0.22	0.86	0.71–0.99	0.04
At least one previous suicide attempt	3.06	0.97–9.60	0.06	6.57	2.33–18.60	<0.001
Number of previous suicide attempts	1.18	1.00–1.40	0.05	1.39	1.25–1.54	<0.001
Scale for Suicide Ideation score <sup>a</sup>	1.28	0.96–1.61	0.09	1.28	1.10–1.54	0.002
Lethality Rating Scale score for most lethal attempt	1.02	0.78–1.34	0.89	1.26	1.05–1.50	0.01
Suicide Intent Scale score for most lethal attempt <sup>a</sup>	1.34	0.77–2.29	0.32	1.34	0.95–1.92	0.07
Family history of suicidal acts	3.12	1.06–9.13	0.04	1.91	0.87–4.20	0.11
Childhood history of abuse	1.43	0.36–5.74	0.62	1.38	0.68–2.77	0.37
Early separation from either parent	4.26	1.45–12.49	0.008	0.95	0.49–1.86	0.88
Alcohol abuse	1.84	0.64–5.30	0.26	1.24	0.63–2.44	0.53
Cigarette smoking	4.28	1.36–13.48	0.01	2.41	1.25–4.65	0.009
Past drug use	3.44	1.15–10.28	0.02	1.74	0.87–3.46	0.12
Borderline personality disorder	3.53	1.25–9.96	0.02	2.12	1.10–4.09	0.02
Age at first major depressive episode <sup>a</sup>	0.93	0.75–1.16	0.48	0.98	0.96–1.01	0.28
Number of major depressive episodes	0.94	0.81–1.08	0.36	0.98	0.91–1.04	0.49
Brown-Goodwin Aggression Scale score <sup>a</sup>	1.40	0.94–2.01	0.09	1.34	0.98–1.84	0.07
Barrat Impulsivity Scale score <sup>a</sup>	1.00	0.85–1.21	0.89	1.10	0.99–1.22	0.07
Beck Depression Inventory score <sup>a</sup>	1.22	0.92–1.54	0.18	1.22	1.05–1.47	0.01
Beck Hopelessness Scale score <sup>a</sup>	0.91	0.59–1.40	0.66	1.22	0.87–1.68	0.24
Buss-Durkee Hostility Inventory score <sup>a</sup>	1.16	0.91–1.40	0.26	1.28	1.10–1.47	0.03
Hamilton Depression Rating Scale score <sup>a</sup>	1.47	0.92–2.29	0.11	1.05	0.79–1.34	0.80
Reasons for Living Inventory score <sup>a</sup>	0.97	0.90–1.05	0.37	0.91	0.87–0.95	<0.0001

<sup>a</sup>Hazard ratio calculated as change in risk for 5-point difference in value.

**TABLE 4**

Multivariate Cox Proportional Hazards Regression Model Predicting Suicidal Acts by Men and Women in the 2 Years Following a Major Depressive Episode

Baseline Variable	Men (N=130)		Women (N=184)	
	Hazard Ratio	p	Hazard Ratio	p
At least one previous suicide attempt	1.62	0.47	4.98	0.04
Scale for Suicide Ideation score <sup>b</sup>	— <sup>a</sup>	— <sup>a</sup>	1.06	0.03
Family history of suicidal acts	3.22	0.05	— <sup>a</sup>	— <sup>a</sup>
Early separation from either parent	2.24	0.17	— <sup>a</sup>	— <sup>a</sup>
Cigarette smoking	4.21	0.04	2.87	0.02
Past drug use	1.08	0.91	— <sup>a</sup>	— <sup>a</sup>
Borderline personality disorder	3.02	0.09	1.62	0.26
Beck Depression Inventory score <sup>b</sup>	— <sup>a</sup>	— <sup>a</sup>	1.16	0.25
Buss-Durkee Hostility Inventory score <sup>b</sup>	— <sup>a</sup>	— <sup>a</sup>	1.16	0.14
Reasons for Living Inventory score <sup>b</sup>	— <sup>a</sup>	— <sup>a</sup>	0.95	0.13

<sup>a</sup>Variable was not significant in univariate model.

<sup>b</sup>Hazard ratio calculated as change in risk for 5-point difference in score.