

RISK FACTORS FOR SUICIDE ATTEMPTS AMONG AFRICAN AMERICAN WOMEN

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The aim of this study was to examine psychological and interpersonal risk factors for suicidal behavior in low income, African American women; 285 African American women who reported being in a relationship with a partner in the past year were studied, 148 presented to the hospital following a suicide attempt, and 137 presented for general medical care. Cases were compared to controls with respect to psychological symptoms, alcohol and drug abuse, family violence (intimate partner abuse, childhood trauma), relationship discord, and social support. Psychological risk factors for suicide attempts at the univariate level included psychological distress [Crude Odds Ratio (COR) = 6.5], post traumatic stress disorder (PTSD) symptoms (COR = 3.8), hopelessness (COR = 7.7), and drug abuse (COR = 4.2). Interpersonal risk factors at the univariate level included relationship discord (COR = 4.0), physical partner abuse (COR = 2.5), nonphysical partner abuse (COR = 2.8), childhood maltreatment (COR = 3.2), and low levels of social support (COR = 2.6). A multivariate logistic regression model identified four variables that were strongly and independently associated with an increased risk for suicide attempts: psychological distress, hopelessness, drug abuse, and relationship discord. The model predicted suicide attempt status correctly 77% of the time. The results reveal that African American women who report high levels of psychological distress, hopelessness, drug use, and relationship discord should be assessed carefully for suicidal ideation and referred for appropriate mental health care. Depression and Anxiety 12:13–20, 2000. © 2000 Wiley-Liss, Inc.

Key words: women; suicide; African American; risk factors

INTRODUCTION

Suicide is the third leading cause of death for African Americans between the ages of 15 and 24 and the seventh leading cause of death for African Americans between the ages of 25 and 44 [Anderson et al., 1997]. Despite the magnitude of this problem, only recently have researchers begun to examine suicidal behavior within the African American community. This dearth of attention may be due in part to the fact that rates of suicide among Caucasians are higher than among African Americans (12.9 vs. 6.7 per 100,000) [National Center for Health Statistics, 1997]. However, the number of suicides among African Americans is on the rise [National Center for Health Statistics, 1997].

A prior suicide attempt(s) is the most significant risk factor for a suicide completion [Robins and Kulbok, 1988; Rosen, 1976]. Statistics indicate that women make three times as many suicide attempts as men (4.2% vs. 1.5% lifetime prevalence) [Canetto and Lester, 1995; Moscicki et al., 1988]. In recent years, suicide completions by women have increased, and the

gender gap in completion rates has narrowed [Bille-Brahe, 1993; Canetto and Lester, 1995]. Unfortunately, however, data on factors that predict suicide attempt status in women are scarce and no large scale

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study of risk factors for suicide attempts in African American women has been conducted. To begin to address this gap in knowledge, we studied psychological and interpersonal risk factors for suicide attempts among low income, African American women presenting to an inner city hospital. The choice of variables examined in this case-control study was guided by prior research that involved predominantly non-minority groups of women in which potential risk factors for suicide attempts have been identified. The purpose of this study was three-fold: 1) to identify those psychological and interpersonal variables that serve as risk factors for suicide attempts among low income, African American women; 2) to ascertain the degree to which those variables found to be univariate predictors of suicide attempt status could be used in combination to correctly predict case-control status among low income, African American women; and 3) to determine which factors found to be significant univariate predictors of suicide attempt status were uniquely related to suicide attempt status among low income, African American women while controlling for all other risk factors.

METHOD AND PROCEDURES

STUDY POPULATION AND IDENTIFICATION

Participants in this case-control study were recruited from a university affiliated, public health care system that serves an indigent, urban population. A total of 285 African American women between the ages of 18 and 64 were studied: 148 who presented to the hospital following a nonfatal suicide attempt that required medical intervention (cases) and 137 who presented for treatment of nonemergency medical problems (controls).

Women were not eligible if they had an imminently life-threatening problem, significant cognitive impairments (defined by a score of ≤ 24 if functionally literate or ≤ 22 if illiterate on the Folstein Mini-Mental State Exam) [Folstein et al., 1975], or were acutely psychotic or delirious. Controls also were excluded if they had a history of prior suicide attempts. Only women with current partners or women with partners during the past year were included in the analyses.

A total of 191 African American suicide attempters were referred for enrollment to the study; only 11 refused to participate (94% consent rate). Four of the 180 (2%) who agreed to participate did not meet inclusion criteria; 148 had a partner within the past year (84%) and these women served as the cases for this report, since some of the key risk factors examined (e.g., intimate partner violence and relationship discord) were only applicable to women in relationships. Of the 217 African American women approached to serve as control participants, 21 refused to participate (90% consent rate). Of these 196 who agreed to par-

ticipate, 11 (6%) were excluded because of a history of at least one prior suicide attempt. Only 137 of these women had a partner within the past year (74%) and these women served as the controls for this report.

RECRUITMENT

For 18 months (9/95-3/97), the Principal Investigator (PI) or a designee was on-call and notified of a suicide attempter by medical or psychiatric emergency department personnel 24 hr per day, 7 days per week. The PI, a board certified clinical psychologist, ascertained if the patient's self-injurious behavior met study criteria for a suicide attempt (self-injurious act that required medical attention). Women who engaged in self-destructive behavior with doubtful intent to kill themselves (parasuicides) were excluded. Once the PI concluded that the woman had indeed attempted suicide, another member of the team met with the potential study participant and sought to enroll her into the study as soon as she was medically stable enough to participate. Controls were recruited from three medical walk-in clinics at various times of the day and days of the week during the same 18 month study interval.

DATA COLLECTION

Psychology students and psychiatry residents, trained in interviewing techniques and supervised by the PI, approached eligible participants. For cases, this occurred within 24 hr following the attempt or as soon as the patient was medically stable (never exceeded 72 hr following the attempt). After providing a complete description of the study, including the fact that the information the participants provided would be confidential and would not affect the quality of their medical care, written informed consent was obtained. After the team member determined that the participant met all study criteria, she or he verbally administered to the participant an extensive battery of questions in a semi-structured, 2-3 hr interview format. Oral administration was used due to the low literacy levels of many patients served by this hospital [Parker et al., 1995; Williams et al., 1995]. Participants were compensated \$25.00 for their time. All study procedures were reviewed in advance and approved by the Institutional Review Boards of Emory University School of Medicine and the Grady Health System.

MEASURES

The measures we employed were selected because they are psychometrically sound in terms of internal consistency reliability, test-retest reliability, and convergent, discriminant, and content validity. Three categories of measures were used: demographic variables, psychological risk factors, and interpersonal risk factors.

Demographic variables. Demographic variables assessed included age, marital status, number of children, education level, employment status, and

homeless status. Grade equivalent literacy levels, based on scores on The Rapid Estimate of Adult Literacy in Medicine [Williams et al., 1995], were ascertained as well.

Psychological risk factor variables. Five measures were used as indicators of psychological risk factors. The 53-item Brief Symptom Inventory [Derogatis and Spencer, 1982] assessed global psychological distress. By using norms for nonpatient females, women were classified into two groups: those who scored 2 standard deviations above the mean based on the normative sample (T-score = 70) on the General Severity Index and those who score less than 2 standard deviations above the mean. The presence or absence of current PTSD was assessed using the National Women's Study PTSD Module [Resnick, et al., 1993], a structured interview modified from the Diagnostic Interview Schedule (DIS). By using an algorithm provided by the scale's authors, based on DSM-III-R criteria, participants were classified as high or low with respect to PTSD symptoms. The 20-item Hopelessness Scale [Beck et al., 1974] assessed negative expectancies about the future. High and low levels of hopelessness were ascertained via cut-off scores based on the median split. The 10-item Brief Michigan Alcoholism Screening Test [Pokorny et al., 1972] was used to screen for alcohol-related problems, and a cut-point of ≥ 6 was used to classify participants into two groups. The 20-item Brief Drug Abuse Screening Test [Gavin et al., 1989; Skinner, 1983] provided an index of the severity of drug-related problems. A score ≥ 6 on this scale indicates drug-related problems.

Interpersonal risk factor variables. Five interpersonal risk factors were examined. The Locke-Wallace Marital Adjustment Test (LWMAT) [Locke and Wallace, 1959], a 15-item scale, was used to assess relationship adjustment. Scores ≤ 100 indicate maladjustment in the partner relationship. The 30-item Index of Spouse Abuse (ISA) [Hudson and McIntosh, 1981] was used to determine the presence or absence of physical (ISA-P) and nonphysical (ISA-NP) partner abuse. Women were classified as physically abused if they had an ISA-P score ≥ 10 and as nonphysically abused if they had an ISA-NP score ≥ 25 . The 34-item Childhood Trauma Questionnaire [Bernstein et al., 1994, 1997] was used to gather information about childhood history of abuse and neglect. A median split dichotomized participants into groups reflecting no or low vs. high levels of childhood maltreatment. Social support was assessed with the 15-item Perceived Social Support scale [Cohen and Hoberman, 1983; Russell and Cutrona, 1984]. This scale measures perceptions regarding available emotional, tangible, and informational support resources. A median split was used to classify women into two groups, reflecting low vs. high levels of support.

DATA ANALYSIS

Sociodemographic differences between suicide attempters (coded 1) and nonsuicidal controls (coded 0) were examined using *t*-tests when the demographic variable was continuous and chi-square analysis when the demographic variable was ordinal. Once between-group sociodemographic differences were identified, we controlled for the effect of these variables in all subsequent analyses by using conditional logistic regression. We conducted logistic regression analyses to determine the univariate association between risk factor variables and suicide attempt status. For these analyses, each measure was dichotomized based on cut points provided by each scale's authors or a median split if no cut point was reported in the literature. Logistic regression was used as the statistical technique because we were modeling risk for a dichotomous outcome variable: suicide attempt status. Furthermore, logistic regression provided the odds ratios that allowed us to determine the magnitude of risk associated with each predictor variable. Following analyzing a series of univariate models, a multivariate model was constructed to identify which psychological and interpersonal risk factors remained significant in predicting suicide attempt status after taking the effect of other risk factors into consideration.

RESULTS

DEMOGRAPHIC DATA

Demographic data are presented in Table 1. Three demographic variables (education, employment status, and number of children) were associated with case vs. control status. Cases reported less educational attainment, more unemployment, and higher numbers of children than did the controls. Subsequent analyses controlled for these between-group differences.

UNIVARIATE RISK FACTORS FOR SUICIDE ATTEMPTS

Table 2 presents odds ratios and 95% confidence intervals for the strength of the association between the hypothesized risk factors and suicide attempt status. Four of the five psychological risk factors were significantly associated with making a suicide attempt at the univariate level. Compared to nonattempters, women who attempted suicide were almost seven times more likely to report global psychological distress, approximately four times more likely to endorse PTSD symptoms, about eight times more likely to report hopelessness, and four times more likely to report drug abuse. Alcohol abuse was not significantly related to suicide attempt status.

All five interpersonal risk factor variables were significantly related to suicide attempt status at the univariate level. Compared to nonattempters, women who attempted suicide were four times more likely to report a discordant relationship with their partner,

TABLE 1. Demographic characteristics of the total sample and subsamples

	Group status			F or X ² (df) ^a
	Total n = 285	Suicide attempters n = 148	Control subjects n = 137	
Age (m) (SD)	30.80 (8.96)	30.30 (8.32)	31.33 (9.60)	0.93 _(1, 283)
Education (M grade level) (SD)	11.75 (1.44)	11.47 (1.53)	12.05 (1.27)	12.06 _{(1, 282)**}
Grade equivalent reading level (% < high school)	48.0	45.6	50.8	0.75 (1, N=279)
Homeless (%)	13.3	15.5	10.9	1.30 (1, N=285)
Unemployed (%)	58.8	71.4	45.3	20.05 _{(1, 284)**}
Marital status (% unmarried)	77.2	75.7	78.8	0.40 (1, N=285)
Number of Children (M) (SD)	1.78 (1.46)	1.95 (1.49)	1.61 (1.42)	4.00 _{(1, 281)*}

^adf vary due to missing data.

*P < .05.

**P < .001.

more than twice as likely to report physical partner abuse, nearly three times more likely to report non-physical partner abuse, approximately three times more likely to report a childhood history of maltreatment, and more than twice as likely to report low levels of social support.

MULTIVARIATE RISK FACTORS FOR SUICIDE ATTEMPTS

A multivariate logistic regression model was constructed that included the significant univariate risk factors (three demographic variables, four psychological risk factors, and five interpersonal risk factors). By using the combination of these 12 variables, suicide attempt status could be predicted correctly 77% of the time. As can be seen in Table 3, which provides adjusted odds ratios and 95% confidence intervals, in this multivariate analysis, three psychological risk factors and one interpersonal risk factor remained

strongly and independently associated with suicide attempt status when controlling for all other risk factors. Compared to nonsuicidal controls, women who made a nonfatal suicide attempt were four times more likely to report hopelessness, twice as likely to report global psychological distress and drug abuse, and almost three times more likely to report relationship discord with their partners.

DISCUSSION

Consistent with the results from prior studies with predominantly nonminority samples, findings from this case-control study confirm that several psychological and interpersonal variables serve as risk factors for suicide attempts in low income, African American women (psychological symptoms, PTSD, hopelessness, drug abuse, relationship discord, partner abuse, childhood trauma, and social support). Knowledge of these factors classified suicide attempt status accu-

TABLE 2. Modeling suicide attempt status by predictors in univariate logistic regression equations[†]

Variable	% Yes	COR	95% CI
Global distress*	43	6.52	3.69–11.51
PTSD*	35	3.77	2.14–6.66
Hopelessness*	46	7.74	4.33–13.84
Alcohol abuse	17	1.65	0.81–3.35
Drug abuse*	31	4.18	2.23–7.83
Relationship discord*	47	3.95	2.34–6.69
Physical partner abuse*	28	2.51	1.40–4.50
Nonphysical partner abuse*	29	2.82	1.57–5.08
Childhood maltreatment*	50	3.16	1.89–5.30
Perceived low social support*	49	2.61	1.56–4.38

[†]COR, Crude Odds Ratio; 95% CI, 95% Confidence Interval.

*Ninety-five percent confidence interval does not include 1 and is statistically significant at P < .05.

TABLE 3. Modeling suicide attempt status by predictors in multivariate logistic regression equation[†]

Variable	AOR	95% CI
Global distress*	2.22	1.09–4.52
PTSD	1.61	0.79–3.30
Hopelessness*	4.08	2.07–8.05
Drug abuse*	2.19	1.02–4.71
Relationship discord*	2.78	1.40–5.54
Physical partner abuse	0.97	0.40–2.36
Nonphysical partner abuse	0.82	0.33–2.08
Childhood maltreatment	1.23	0.63–2.40
Perceived social support	1.10	0.56–2.16

[†]AOR, Adjusted Odds Ratio; 95% CI, 95% Confidence Interval.

*Ninety-five percent confidence interval does not include 1 and is statistically significant at P < .05.

rately 77% of the time. While a series of psychological and interpersonal risk factors were found, those factors most strongly and independently associated with a heightened risk for suicidal behavior among low income, African American women include psychological distress, hopelessness, drug use, and relationship discord. In addition, although this paper focuses on psychological and interpersonal variables associated with suicidal behavior in this sample, an additional set of findings that were quite striking relate to the demographic differences between the two groups. Specifically, in this sample of low income, African American women, those who attempted suicide were less educated, more likely to be unemployed, and had more children living with them than did those women who had never tried to kill themselves. Thus, these demographic findings highlight the high risk social context with which these suicide attempters are struggling to cope.

Hopelessness was the most powerful risk factor for suicidal behavior in our sample. Interestingly, hopelessness has been found to be a more significant predictor of near-lethal suicide attempts among African Americans than Caucasians [Durant, 1998]. Psychological distress and drug use were also strongly associated with suicidal behavior in our sample. These findings are consistent with prior research that indicates that psychiatric symptoms and disorders (e.g., depression, anxiety, PTSD, alcohol and drug abuse, and hopelessness) are associated with suicidal behavior among predominantly nonminority females and males combined [Beautrais et al., 1996; Roy et al., 1990; Stack and Wasserman, 1995; Weissman et al., 1989]. In addition, our findings are in agreement with the results of a prospective cohort study that followed African Americans from first grade through age 32 and found that psychological distress (notably depression) and substance abuse (particularly cocaine use) were important predictors of suicidal behavior in this population [Juon and Ensminger, 1997].

Relationship discord was the only interpersonal variable that was strongly associated with attempt status in both the univariate and multivariate analyses. This finding is consistent with prior epidemiological and clinical literature that asserts that an unhappy primary partnership constitutes a grave risk to a woman's mental health [Weissman, 1987], as well as with data from studies of primarily nonminority suicidal women in which suicide attempters often report that their primary partnerships are hostile, psychologically abusive, and emotionally neglectful [Arcel et al., 1992; Bergman and Brismar, 1991; Stephens, 1985/1986; Wolk-Wasserman, 1986].

A number of findings from our univariate analyses of interpersonal risk factors may be of clinical import, even though not all of them remained significant in the multivariate model. Physical and nonphysical partner abuse were reported significantly more often by African American suicide attempters than controls. Again, these findings are consistent with those ob-

tained from predominantly nonminority samples that indicated that women abused by their partner are more likely than nonabused women to make suicide attempts [Abbott et al., 1995; Amaro et al., 1990; Bergman and Brismar, 1991; Kaplan et al., 1995; Roberts et al., 1997] and women who attempt suicide have high rates of partner abuse [Arcel et al., 1992]. Suicide attempters in our sample were more likely to report a history of childhood abuse or neglect than were nonattempters. This findings also is consistent with data from nonminority samples [Kaplan et al., 1995; Stepakoff, 1998]. Finally, compared to nonattempters, cases were more likely than controls to report low levels of social support, a finding consistent with research on nonminority female and male suicide attempters [Kotler et al., 1993; Magne-Ingvar et al., 1992; Veiel et al., 1988]. The finding that a low level of social support is a risk factor for suicidal behavior among African American women is not surprising given that African American women more often rely on "naturally existing" support systems (e.g., extended family and church) than formal support systems such as mental health and social services [Kanuha, 1994].

There are a number of clinical and research implications of these findings. First and foremost, any mental health professional trying to help low income African American women who attempted suicide must understand the woman's social environment and life situation. Often these women are living in impoverished conditions with limited resources, a situation that puts one at risk for suicidal behavior. Until these more basic needs are addressed or met, efforts to target women's psychological symptoms and interpersonal difficulties are likely to fail. Thus, in addition to standard psychiatric care, it is imperative that the treatment focus on addressing the various social needs encountered by these women. For example, these women may need help with obtaining educational and/or employment opportunities, as well as assistance in securing adequate help with childcare. Second, concurrent with a case formulation that includes the women's social context and the provision of adequate social services, a thorough psychiatric evaluation with these African American women must include an assessment of their psychological symptoms, feelings of hopelessness, use of drugs, and perceptions of the quality of their primary relationships. African American women who report difficulties in these areas should be deemed as being at high risk for suicide attempts and thus deserve close monitoring. If attention is paid to this combination of risk factors, clinicians may be able to prevent a significant number of suicide attempts and potentially completions as well. Third, the data also suggest that it would be useful for mental health professionals to screen for intimate partner violence and childhood maltreatment among suicidal women. In a related vein, mental health professionals should assess for suicidal ideation, intent, and plans among female victims of childhood and adulthood

violence. Fourth, interventions with suicidal women should emphasize the mobilization of a supportive social network, whether it is informal or formal. These social support systems may be particularly effective for protecting African American women from engaging in suicidal behavior [Kotler et al., 1993; Nisbet, 1996]. Fifth, women who make suicide attempts should be referred for psychosocial interventions that have been deemed efficacious in the empirical literature, including behavior therapy, cognitive restructuring, problem-solving, and dialectical behavior therapy [Lerner and Clum, 1990; Liberman, 1981; Linehan, 1987; Linehan et al., 1991, 1994; Patsiokas and Clum, 1985; Rudd et al., 1996; Salkovskis et al., 1990]. However, we remind the reader that for these empirically supported treatments to be effective they must take into consideration the sociocultural context within which these women are embedded and they must include components that target the social and economic needs of these women. Finally, this study also illuminates the need for multivariate analyses when examining risk factors for suicide attempts. Many of the variables that were significant in the univariate logistic regression models were not significant in the multivariate logistic regression model. All of our examined risk factors were highly correlated with each other, and thus, when we examined their associations with suicide attempt status concurrently in the multivariate model, many variables no longer uniquely predicted the risk of making a nonfatal suicide attempt. Interventions that are guided by research results need to take into account whether the findings are based on multivariate analyses. In this way, interventions can be targeted more discreetly towards the risk factors that show independent associations with suicide attempt risk.

Our findings should be considered in light of several limitations. First, the design includes a medical but not a psychiatric control group. As a consequence of this methodological weakness, it is not possible to ascertain whether the findings are specific to suicide attempters or more general in their association to the psychiatric conditions that underlie suicidal behavior (e.g., depression, anxiety, substance use disorders, and personality disorders). Second, cases and controls were not recruited from the same clinics within the hospital. Specifically, whereas the cases were recruited from the emergency care setting, controls were recruited from the medical walk in clinics. Therefore, findings related to global psychological distress, drug abuse, and hopelessness may be reflective of the context in which the women were recruited and interviewed and not solely a function of suicide attempt status. Third, and in a related vein, although data were collected on psychological symptoms, a structured diagnostic interview was not conducted, nor was a depression self-report measure used. Therefore, data are not available on the psychiatric diagnoses of participants. Similarly, because cases and controls were not evaluated for a psychiatric diagnosis, it is impossible to

ascertain whether or not some of the major findings may be due to the presence of psychiatric illnesses (e.g., depression) and not to suicidal behavior per se. Specifically, global psychological distress, drug abuse, hopelessness, and marital discord could reflect the presence of an underlying psychiatric disorder. Fourth, women in this sample were African Americans with relatively low incomes, and thus the generalizability of our findings to African American women of higher socioeconomic status or women from other racial or ethnic groups is unknown. Fifth, we utilized self-reports and retrospective accounts. Therefore, some of our findings may be influenced by the possible negative recall bias among suicide attempters. Likewise, it is possible that some of the nonsuicidal controls chose not to divulge sensitive information of the sort we requested, despite our assurances of confidentiality. To the degree that recall bias or misreporting was a problem, it would serve to inflate our odds ratios. Sixth, some of the risk factors examined in this study may also be consequences of the suicide attempt (e.g., hopelessness). Owing to the cross-sectional nature of the data, it is not possible to say with certainty that these constructs are predictors, rather than outcomes, of the suicide attempt. Seventh, because our study only included women who had made a nonfatal suicide attempt, we do not know if the same factors would predict risk of suicide completions. Finally, although this was designed as a case-control study, the groups differed slightly on three demographic variables. We controlled for these differences in the univariate and multivariate analyses.

This is the first large-scale investigation of the myriad psychological and interpersonal risk factors for suicide attempts among low income, African American women. As such, this study adds to the limited body of information regarding suicidal behavior in this population [Chance et al., 1998; Heron et al., 1997; Nisbet, 1996]. Since suicide is a growing problem among African Americans [Anderson et al., 1997], predictive models and culturally competent interventions are needed to help African American individuals at risk for suicidal behavior [Chance et al., 1998; Heron et al., 1997]. It is imperative that some of these investigations focus on suicide attempts, since in comparison to suicide completions suicide attempts have been a relatively neglected area of suicide research. Since many more people attempt suicide rather than complete it, and attempting suicide is a key risk factor for future completion, we must expand our knowledge of this phenomenon.

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REFERENCES

- Abbott J, Johnson R, Koziol-McLain J, Lowenstein SR. 1995. Domestic violence against women: incidence and prevalence in an emergency department population. *JAMA* 273:1763-1767.
- Amaro H, Fried L, Cabral H, Zuckerman B. 1990. Violence during pregnancy and substance abuse. *Am J Public Health* 80:575-579.
- Anderson RN, Kochanek KD, Murphy SL. 1997. Report of final mortality statistics, 1995. Hyattsville, MD: National Center for Health Statistics.
- Arcel LT, Mantonakis J, Petersson B, Jemos J, Kaliteraki, E. 1992. Suicide attempts among Greek and Danish women and the quality of their relationships with husbands and boyfriends. *Acta Psychiatr Scand* 85:189-195.
- Beautrais AL, Joyce PR, Mulder RT, Fergusson DM, Deavoll BJ, Nightingale SK. 1996. Prevalence and comorbidity of mental disorders in persons making serious suicide attempts: a case-control study. *Am J Psychiatry* 153:1009-1014.
- Beck AT, Weissman A, Lester D, Trexler L. 1974. The measurement of pessimism: the hopelessness scale. *J Consult Clin Psychol* 42:861-865.
- Bergman B, Brismar B. 1991. Suicide attempts by battered wives. *Acta Psychiatr Scand* 83:380-384.
- Bernstein DP, Ahluvalia T, Pogge D, Handelsman, L. 1997. Validity of the Childhood Trauma Questionnaire in an adolescent psychiatric population. *J Am Acad Child Adolesc Psychiatry* 36:340-348.
- Bernstein DP, Fink L, Handelsman L, Foote J, Lovejoy M, Wenzelk K, Sapareto E, Ruggiero J. 1994. Initial reliability and validity of a new retrospective measure of child abuse and neglect. *Am J Psychiatry* 151:1132-1136.
- Bille-Brahe U. 1993. The role of sex and age in suicidal behavior. *Acta Psychiatr Scand* 371:21-27.
- Canetto SS, Lester D. 1995. Women and suicidal behavior. New York: Springer.
- Chance SE, Kaslow NJ, Summerville MB, Wood K. 1998. Suicidal behavior in African American individuals: current status and future directions. *Cultural Diversity Mental Health* 4:19-37.
- Cohen S, Hoberman H. 1983. Positive events and social supports as buffers of life change stress. *J Applied Soc Psychol* 13:99-125.
- Derogatis L, Spencer P. 1982. The Brief Symptom Inventory (BSI): administration, scoring, and procedures manual. Baltimore: Johns Hopkins University.
- Durant, T. 1998. Racial differences in hopelessness as a risk factor for a nearly lethal suicide attempt. Paper presented at the American Public Health Association, November 16, Washington D.C.
- Folstein MF, Folstein SE, McHugh PR. 1975. Mini-mental state: a practical method for grading the cognitive state of patients for the clinician. *J Psychiatr Res* 12:189-198.
- Gavin DR, Ross HE, Skinner HA. 1989. Diagnostic validity of the Drug Abuse Screening Test in the assessment of DSM-III drug disorders. *Br J Addict* 84:301-307.
- Heron RL, Twomey HB, Jacobs DP, Kaslow NJ. 1997. Culturally competent interventions for abused and suicidal African American women. *Psychotherapy: Theory Res Practice Training* 34:410-424.
- Hudson WW, McIntosh SR. 1981. The assessment of spouse abuse: two quantifiable dimensions. *J Marriage Fam* 43:873-888.
- Juon HS, Ensminger ME. 1997. Childhood, adolescent, and young adult predictors of suicidal behaviors: a prospective study of African Americans. *J Child Psychol Psychiatry* 38:553-563.
- Kanuha V. 1994. Women of color in battering relationships. In: Comas-Diaz L, Greene B, editors. *Women of color: integrating ethnic and gender identities in psychotherapy*. New York: Guilford Press. p 428-454.
- Kaplan ML, Asnis GM, Lipshitz DS, Chorney P. 1995. Suicidal behavior and abuse in psychiatric outpatients. *Comprehensive Psychiatry* 36:229-235.
- Kotler M, Finkelstein G, Molcho A, Botsis A, Plutchik R, Brown S, vanPraag HM. 1993. Correlates of suicide and violence risk in an inpatient population: coping styles and social support. *Psychiatry Res* 47:281-290.
- Lerner M, Clum G. 1990. Treatment of suicide ideators: a problem-solving approach. *Behav Therapy* 21:403-411.
- Liberman R, Eckman T. 1981. Behavior therapy vs. insight-oriented therapy for repeated suicide attempters. *Arch Gen Psychiatry* 38:1126-1130.
- Linehan MM. 1987. Dialectical behavioral therapy: a cognitive-behavioral approach to parasuicide. *J Personal Disord* 1:328-333.
- Linehan MM, Armstrong HE, Suarez A, Allmon D, Heard HL. 1991. Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Arch Gen Psychiatry* 48:1060-1064.
- Linehan MM, Tutek DA, Heard HL, Armstrong HE. 1994. Interpersonal outcome of cognitive behavioral treatment for chronically suicidal borderline patients. *Am J Psychiatry* 151:1771-1776.
- Locke HJ, Wallace KM. 1959. Short marital-adjustment and prediction tests: their reliability and validity. *Marriage Fam Living* 21:251-255.
- Magne-Ingvar U, Ojehagen A, Traskman-Bendz L. 1992. The social network of people who attempt suicide. *Acta Psychiatr Scand* 86:153-158.
- Moscicki EK, O'Carroll P, Rae DS, Locke BZ, Roy A, Regier DA. 1988. Suicide attempts in the Epidemiologic Catchment Area Study. *Yale J Biol Med* 61:259-268.
- National Center for Health Statistics. 1997. Vital statistics mortality data, underlying causes of death, 1979-1995. Hyattsville, MD: Centers for Disease Control and Prevention.
- Nisbet PA. 1996. Protective factors for suicidal Black females. *Am Assoc Suicidology* 26:325-341.
- Parker RM, Baker DW, Williams MV, Nurss JR. 1995. The test of functional health literacy in adults (TOFHLA): a new instrument for measuring patients' literacy skills. *J Gen Intern Med* 10:537-541.
- Patsiokas AT, Clum GA. 1985. Effects of psychotherapeutic strategies in the treatment of suicide attempters. *Psychotherapy* 22:281-290.
- Pokorny A, Miller B, Kaplan H. 1972. The Brief MAST: A shortened version of the Michigan Alcohol Screening Test. *Am J Psychiatry* 129:342-345.
- Resnick H, Kilpatrick D, Dansky B, Saunders B, Best C. 1993. Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *J Consult Clin Psychol* 61:984-991.
- Roberts GL, Lawrence JM, O'Toole BI, Raphael B. 1997. Domestic violence in the Emergency Department. I. Two case-control studies of victims. *Gen Hosp Psychiatry* 19:5-11.
- Robins LN, Kulbok PA. 1988. Epidemiologic studies in suicide. *Rev Psychiatry* 7:289-306.
- Rosen DH. 1976. The serious suicide attempt: Five year follow up study of 886 patients. *JAMA* 235:2105-2109.
- Roy A, Lamparski D, DeJong J, Moore V, Linnoila M. 1990. Characteristics of alcoholics who attempt suicide. *Am J Psychiatry* 147:761-765.

- Rudd MD, Rajab, MH, Orman DT, Stulman DA, Joiner T, Dixon W. 1996. Effectiveness of an outpatient intervention targeting suicidal young adults: preliminary results. *J Consult Clin Psychol* 64:179-190.
- Russell D, Cutrona C. 1984. The provisions of social relationships and adaptation to stress. Paper presented at the Ninety second annual convention of the American Psychological Association, August 11-16, Toronto.
- Salkovskis PM, Atha C, Storer D. 1990. Cognitive-behavior problem-solving in the treatment of patients who repeatedly attempt suicide: a controlled trial. *Br J Psychiatry* 157:871-876.
- Skinner H. 1983. The drug abuse screening test. *Addict Behav* 7:363-371.
- Stack S, Wasserman, IM. 1995. Marital status, alcohol abuse, and attempted suicide: a logit model. *J Addict Dis* 14:43-51.
- Stepakoff S. 1998. Effects of sexual victimization on suicidal ideation and behavior in U.S. college women. *Suicide Life Threat Behav* 28:107-126.
- Stephens, JB. 1985/1986. Suicidal women and their relationships with their parents. *Omega* 16:289-300.
- Veiel HO, Brill G, Hafner H, Welz R. 1988. The social supports of suicide attempters: the different roles of family and friends. *Am J Commun Psychol* 16:839-361.
- Weissman MM. 1987. Advances in psychiatric epidemiology: rates and risks for major depression. *Am J Public Health* 77:445-451.
- Weissman MM, Klerman G, Markowitz JS, Ouellette R. 1989. Suicidal ideation and suicide attempts in panic disorder and attacks. *N Engl J Med* 321:1209-1214.
- Williams M, Parker R, Baker D, Parikh N, Pitkin K, Coates W, Nurss J. 1995. Inadequate functional health literacy among patients at two public hospitals. *JAMA* 274:1677-1682.
- Wolk-Wasserman, D. 1986. Suicidal communication of persons attempting suicide and responses of significant others. *Acta Psychiatrica Scand* 73:481-499.