

Protective Factors Against Suicide Attempt Risk Among African American Women Experiencing Intimate Partner Violence

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Protective factors (hope, spirituality, self-efficacy, coping, social support–family, social support–friends, and effectiveness of obtaining resources) against suicide attempts were examined in economically, educationally, and socially disadvantaged African American women (100 suicide attempters, 100 nonattempters) who had experienced recent intimate partner violence. Significant positive associations were found between all possible pairs of protective factors. Bivariate logistic regressions revealed that higher scores on each of the seven protective factors predicted nonattempter status; multivariate logistic regressions indicated that higher scores on measures of hope or social support–family showed unique predictive value for nonattempter status. Further, the multivariate model accurately predicted suicide attempt status 69.5% of the time. Partial support was found for a cumulative protective model hypothesizing a linear relationship between the number of protective factors endorsed and decreased risk for suicide attempts. Implications of these findings for community-based preventive intervention efforts and future research are discussed.

KEY WORDS: African American women; suicide attempts; intimate partner violence; protective factors; hope; social support; spirituality; self-efficacy.

Intimate partner violence (IPV) affects millions of women regardless of age, race, and income in the United States (Rennison & Planty, 2003). Low-income, African American women experience disproportionately high levels of IPV (Rennison & Planty, 2003) and psychosocial difficulties (West, 2002). One of the most negative sequelae of IPV among low-income African American women is an increased risk for suicidal behavior (Kaslow et al., 1998, 2000, 2002; Stark & Flitcraft, 1996; Thompson et al., 1999; Thompson, Kaslow, & Kingree, 2002). Women who report a history of IPV are more

likely to report a history of suicide attempts than are women who have not been abused (Abbott, Johnson, Koziol-McLain, & Lowenstein, 1995; Bergman & Brismar, 1991; Kaplan, Asnis, Lipshitz, & Chorney, 1995; Roberts, Lawrence, O'Toole, & Raphael, 1997; Stark & Flitcraft, 1996). Up to 80% of female suicide attempters cite an abusive relationship as at least one of the reasons they resorted to attempting suicide (Stark & Flitcraft, 1996). Individuals assaulted by a relative or intimate partner are more likely to report suicidal ideation or behavior than those assaulted by a stranger (Simon, Anderson, Thompson, Crosby, & Sacks, 2002). Most germane to the current study, IPV more than doubles the risk of suicide attempts in low-income, African American women (Kaslow et al., 1998).

Not all women who are in abusive relationships attempt suicide. The primary goal of this research is to ascertain those factors that serve a protective

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function against suicide attempts in abused, low-income, African American women. The question of whether or not having more protective factors, relative to having none, may lead to increased protection or resilience against suicide attempts was addressed. As such, a *resilient* individual is posited to be less vulnerable to the effects of traumatic events, in part by being better able to take advantage of existing resources than a nonresilient individual (Masten, 1999). All participants in the current study reported having been exposed to IPV. Particularly in the context in which these women live and work on a daily basis (e.g., often cut off from kinship networks, living below the poverty line), their resilience in the face of IPV is worthy of our study.

Because suicide has been conceptualized as an interaction of risk factors and a relative lack of protective factors (Moscicki, 2001), the study of specific protective factors is important in the understanding of suicide. On the basis of the theoretical and empirical literature, the protective factors selected for this study were hope, spirituality, self-efficacy, coping, social support from family, social support from friends, and effectiveness of obtaining resources.

Regarding hope, defined as positive expectations about the future and positive ways of assigning causality to events, several studies suggest a protective mechanism involved against suicide attempts. Hope has been posited to buffer the effects of life stress on mental, behavioral, and physical health (Goldsmith et al., 2002). However, there is a dearth of research examining the effects of hope in minority populations. One exception is a recent study of African American male and female suicide attempters and nonattempters, which revealed higher reported levels of hope among nonattempters than among attempters (Kaslow et al., 2004). Other representative studies include Taylor, Kemeny, Reed, Bower, and Gruenewald (2000) investigation of the role of psychological beliefs, including optimism, personal control, and a sense of meaning on health outcomes for men infected with HIV disease. Findings suggested that even unrealistically optimistic views about the future may serve a protective function with regards to health status. Further, in an interview study with breast cancer patients, Taylor, Lichtman, and Wood (1984) observed that many women expressed the belief that they could control the cancer and keep it from coming back. This hopeful “cognitive adaptation” appeared to buffer even further “bad news” concerning their prognosis. Range and Penton (1994) found that scores on coping beliefs and hope,

rather than those on hopelessness or other reasons for living, were most related to scores on suicidality. The study sample was male and female introductory psychology undergraduate students. The authors posited that facilitating hopefulness (especially as it relates to a sense of successfully meeting personal goals) may bolster an individual’s ability to cope, thus discouraging his/her tendency toward suicide. Furthermore, in a sample of highly educated, socially integrated gay men who had had an AIDS-defining opportunistic infection at least 3 years prior to study entry, survival was associated with a positive outlook and hope, even in the face of a poor prognosis and/or suicidal ideation (Rabkin & Remien, 1993).

Regarding spirituality, empirical research into spiritual practices, spiritual beliefs, and spiritual experiencing is in its infancy (Miller & Thoresen, 1999, 2003). In a recent brief review of quantitative research into spirituality’s potential relevance to physical and emotional health, Larson and Larson (2001) reported that, for a large proportion of medically ill or mental health patients, spiritual/religious participation appeared to provide coping resources, protect against depression, and reduce the risk of substance abuse and suicide. Moreover, George, Ellison, and Larson (2002) posited that some, if not all, of the beneficial effects of attending religious services may be mediated by social support, as those who attend religious services are more likely to be in contact with other like-minded people who can offer them help and support, especially during times of stress. Several studies utilizing African American populations are noteworthy in this regard. Using data from the U.S. General Social Surveys, 1972–1990 (Davis, 1990), Stack and Wasserman (1995) explored the influence of marriage and family factors, including religiosity, on suicide beliefs or ideology in a large, full probability sample of African Americans. Results revealed that institutional ties to religion were significantly more important than marital ties in lowering pro-suicide ideology among African Americans. Second, in a study of inner-city African American male and female suicide attempters and nonattempters, nonattempters reported higher levels of religiosity/spirituality than did attempters (Kaslow et al., 2004). Finally, in a small qualitative study of African American female college students, participants identified spirituality as a major influence in their decision to terminate an abusive heterosexual relationship (Few & Bell-Scott, 2002).

Self-efficacy expectations were defined by Bandura (1982, 1986) as the beliefs or convictions

that an individual can produce certain behaviors (not an individual's actual ability or skill level). A positive assessment of one's abilities, or positive self-efficacy beliefs, appear to buffer individuals from suicidal behaviors (e.g., Linehan, Goodstein, Nielsen, & Chiles, 1983; Malone et al., 2000). In fact, Bandura (1982, 1986) posited that self-efficacy is the single greatest determinant of behavior. However, there is a paucity of studies that include ethnicity as a factor in the study of self-efficacy in adults. Bradley and Corwyn (2001) examined a sample of 100 European American and 72 African American families whose median household income was slightly higher than the median income reported by the U.S. Bureau of the Census (1996), each with a child between 10 and 15 years of age. Results revealed that positive self-efficacy beliefs mediated the relation between home environment and prosocial behavior in children in both ethnic groups (although the effect was more pronounced for the European American children; Bradley & Corwyn, 2001). In a study of abused African American women, findings revealed a positive association between self-efficacy and decreased suicide risk; this relation was partially accounted for by the mediating roles of perceived social support from friends and family, and by perceived effectiveness at obtaining resources (Thompson, Kaslow, Short, & Wyckoff, 2002).

In regards to coping skills, the Institute's of Medicine Committee on the Pathophysiology and Prevention of Adolescent and Adult Suicide (CPPAAS) identified coping skills as a protective factor against suicide (Goldsmith et al., 2002). Coping skills include how an individual manages a stressful problem (e.g., actively or passively) and how an individual regulates emotional and cognitive responses to stressful situations (Lazarus & Folkman, 1984). Range and Penton's (1994) study of introductory psychology undergraduate students revealed that facilitating hopefulness may bolster an individual's ability to cope, thus discouraging his/her tendency toward suicide. In another study of predominantly Caucasian undergraduate volunteers at a Canadian university, the interaction of measures of sense of coherence and emotion-oriented coping made a unique, significant contribution to the statistical predication of suicide ideation, prior suicide attempts, and self-reported likelihood of future suicidal behavior in women but not in men (i.e., the higher the scores were on emotion-oriented coping, the less likely that a woman's positive sense of coherence would preclude suicidal behav-

iors (Edwards & Holden, 2001). However, the majority of participants for the coping studies were Caucasian, or insufficient demographic data was provided for the samples. Larger samples that include African American participants and other ethnic minorities are needed. To this end, two separate studies of low-income, inner-city African American women suicide attempters and nonattempters revealed that higher scores on coping distinguished nonattempters from attempters (Kaslow et al., 1998; 2002).

Numerous studies support the contention that social support decreases the risk for attempting suicide in African American populations. Representative studies include a large, cross-sectional survey of women, aged 18–65 years (62% African American and 38% European American), recruited from family practice clinics, in which results revealed that among abused women, higher social support scores were associated with a reduced risk of suicide attempts (Coker et al., 2002). In a more recent study, male and female African American inpatients diagnosed with depression were divided into with versus without a history of suicide attempts (Palmer, 2001). Results showed a significant negative correlation between suicide risk and perceived social support, which accounted for 17% of the variance. Furthermore, in a study of African American college students, higher reported levels of communalism and family support were associated with lower levels of suicidal ideation and depression (Harris & Molock, 2000). In addition, findings from a study of African American male and female adult suicide attempters ages 18–64 revealed lower levels of family cohesion, family adaptability, and social support among male and female attempters than among their nonattempter male and female counterparts (Kaslow et al., submitted for publication). Furthermore, a study of African American women suicide attempters and nonattempters revealed that social support moderated the impact of IPV on suicide attempts (Kaslow et al., 1998). In another study of abused African American women, a positive association between self-efficacy and decreased risk for suicide was partially accounted for by the mediating role of perceived social support from friends and family (Thompson, Kaslow, Short, et al., 2002). Bender, Cook, and Kaslow (2003) explored the mediating effects of social support on the childhood maltreatment–IPV link in low-income, African American women. Social support fully mediated relations in which the form of childhood maltreatment was different than the form of adult IPV, but only

partially mediated relations in which the form of childhood maltreatment was similar to the form of adult IPV (Bender et al., 2003).

An individual's effectiveness in obtaining resources may be as salient as the availability of the resources themselves. Following interventions for battered women, women showed increases in their perceived effectiveness in gaining resources (Sullivan & Bybee, 1999; Sullivan & Rumpitz, 1994). Using data from the National Institute of Mental Health Epidemiologic Catchment Area (ECA) Project, Nisbet (1996) found that seeking and obtaining emotional and psychological support appeared to bolster African American women's protection against suicidal behaviors. Nisbet's (1996) finding that seeking support from friendship and familial resources is negatively related to suicide attempts in African American women, whereas seeking support from professional resources is positively associated with suicide attempts, may be a reflection of how easily these types of resources are obtained (or how easily they are "perceived" as being obtainable). Further, data from a study of economically disadvantaged, African American young adults revealed that those who reported a history of at least one suicide attempt rarely, if ever, sought help from a mental health professional either in their lifetime or at the time of their most recent attempt (Ialongo et al., 2002). In a more recent study of abused African American women, the positive association between self-efficacy and decreased suicide risk was partially accounted for by the mediating roles of perceived social support from friends and family, and by perceived effectiveness in obtaining resources (Thompson, Kaslow, Short, et al., 2002). Further, findings from a study of African American male and female suicide attempters, revealed that nonattempters reported being more effective at obtaining resources than were their male and female attempter counterparts (Kaslow et al., submitted for publication).

On the basis of the theoretical and empirical work cited above, it was hypothesized that (1) significant positive associations would be found between all possible pairs of proposed protective factors; (2) compared to women who did not endorse a particular protective factor, women who did endorse that protective factor would be less likely to attempt suicide; (3) while controlling for all other protective factors, those women who did endorse a particular protective factor, compared to those women who did not endorse that protective factor, would be less likely to attempt suicide. The predictive value of

the multivariate model was tested to ascertain if suicide attempt status could be predicted and with what degree of accuracy, given a woman's scores on the protective factors. Finally, a cumulative protective model was tested to examine if abused, low-income, African American women's likelihood of making a suicide attempt decreased as the number of protective factors they endorsed increased.

METHOD

Sample

Participants were recruited from a large, Level 1 trauma center, public urban hospital that serves a predominantly indigent and African American population. Given that women who attempt suicide often reside in economically, socially, and educationally disadvantaged environments (Canetto & Lester, 1995) and that African Americans are disproportionately represented in low-income groups (www.census.gov/hhes/poverty/poverty02), the site was optimal for studying suicidal behavior in low-income, African American women. The sample consisted of two groups of abused, African American women aged 18–59: (1) women who presented to the hospital following a nonfatal suicide attempt (attempters, $n = 100$) and (2) women with no history of suicidal behavior who presented to one of the hospital's walk-in clinics for nonemergency medical problems (controls, $n = 100$).

Exclusionary Criteria

Women were excluded from participating on the basis of the following criteria: (1) they refused to participate ("refusers"); (2) they did not have an intimate partner in the previous year; (3) they did not report any physical or nonphysical IPV in the previous year; (4) they reported a life-threatening medical condition in which death was imminent; (5) they demonstrated significant cognitive impairment, in combination with literacy levels, or they were unable to complete the protocol (e.g., were acutely psychotic or delirious). Women were excluded from participating in the control condition if (1) they refused to participate ("refusers"), or (2) they reported one or more prior suicide attempts. Twenty-nine percent of the attempters ($n = 41$) approached to be in the study did not meet eligibility criteria, and 69% of the controls ($n = 221$) approached to be in the study did

not meet eligibility criteria. No significant age differences were found between refusers and participants in either the attempter or the control groups ($p < .05$). Other demographic information was not obtained, or was not available, for refusers.

Procedure

The Principal Investigator (PI; or her designee) of the larger investigation was available by pager to be contacted 24 hr per day, 7 days per week to ensure that all abused African American women who presented to the hospital following a suicide attempt were referred immediately to the study (see Kaslow et al., 2002, for details). After determining if the woman's behavior met study criteria for a suicide attempt (i.e., self-injurious act that required medical attention and/or in which there was serious intent), the PI then contacted a research team member (i.e., undergraduate and graduate students, postdoctoral fellows), trained in interviewing and supervised weekly. The team member then went to the hospital and, once the woman was deemed medically stable, recruited her for participation in the study. For control participants, team members approached women seeking nonemergency medical care at one of three medical walk-in clinics, explained the purpose of the study, and answered questions. Team members rotated through these clinics at various times of the day and week for the study duration. This control condition recruitment was designed to augment the demographic comparability of the women in the attempter and control groups.

Women who agreed to participate were asked to provide written informed consent. Once consent was obtained, the screening measures detailed below were administered to assess the eligibility of the participant. Face-to-face interviews for women who met inclusion and screening criterion lasted 2–3 hr and were conducted in private designated hospital areas. After completing the protocol, participants were compensated \$25.00 for their participation and were provided with referrals to appropriate community agencies.

Measures

Background and Screening Questionnaires

Demographic Data Form. Key sociodemographic data were obtained for each participant:

age, level of education, number of children, marital status, employment status, and monthly household income.

Universal Violence Prevention Screening Protocol (UVPSP). A revised version of the Universal Violence Prevention Screening Protocol (UVPSP; Dutton, Mitchell, & Haywood, 1996) was used to screen for a woman's experience of physical, sexual, and/or emotional abuse from a significant other within the past year. Women were asked if a significant other had, in the past year, "slapped, grabbed, pushed, choked, kicked, or punched you," "forced or coerced you to have sex," "threatened you with or actually used a knife or gun to scare or hurt you," "made you afraid that you could be physically hurt or repeatedly used words, yelled, or screamed in a way that frightened you, threatened you, put you down, or made you feel rejected." Women who answered affirmatively to at least one of these five questions were eligible to participate in the study. In this sample, the measure had good positive predictive value and sensitivity (Heron, Thompson, Jackson, & Kaslow, 2003).

Index of Spouse Abuse (ISA) (Hudson & McIntosh, 1981). The ISA, a 30-item measure, assessed for the severity of physical and nonphysical abuse a woman experienced by an intimate partner. Items were rated on a 5-point Likert scale ranging from *never* to *very frequently*. The ISA has excellent internal consistency reliability, good discriminant validity, very good convergent validity (Hudson & McIntosh, 1981), and excellent construct validity (Heron et al., 2003). It has good psychometric properties with other samples of African American women (Campbell, Campbell, King, Parker, & Ryan, 1994; Cook, Conrad, Bender, & Kaslow, in press; Tolman, 2001). Coefficient alphas for the current sample were .93 for the nonphysical abuse subscale and .89 for the physical abuse subscale.

Mini-Mental State Exam (MMSE). The commonly used MMSE (Folstein, Folstein, McHugh, & Fanjiang, 1975), was used to assess cognitive functioning. Scores $\leq 24/30$ indicate diffuse cognitive dysfunction. Participants with scores $\leq 24/30$ were excluded from the study if literate, and ≤ 22 if low in literacy (as measured by the Rapid Estimate of Adult Literacy in Medicine (REALM)).

Rapid Estimate of Adult Literacy in Medicine (REALM). The REALM (Williams et al., 1995) was used to determine grade equivalent literacy levels. Scores ≤ 18 were indicative of functional illiteracy, and this information was used to determine if a

participant was excluded from the study on the basis of her performance on the MMSE. The REALM has excellent criterion-related validity, as well as test-retest and interrater reliability.

Dependent Variable

Suicide Attempt Status (SAS). Participants were assigned a score of 1 if they met criteria for the suicide attempter group and a 0 if they met criteria for the nonattempter group.

Independent Variables (Protective Factors)

Hope. Hope was assessed using the Herth Hope Index (HHI; Herth, 1992), a 12-item scale with items answered using a 4-point Likert-type scale ranging from *strongly disagree* to *strongly agree*. The HHI has good criterion-related validity, divergent validity, and test-retest reliability. Coefficient alpha for the current sample was .90.

Spiritual Well-Being. Spiritual well-being was examined with the Spiritual Well-Being Scale (SWBS) (Paloutzian & Ellison, 1982), a 20-item scale that measures both religious well-being and existential well-being. Responses were made on a 6-point Likert scale ranging from *strongly agree* to *strongly disagree*. The scale has good test-retest reliability and convergent validity (Paloutzian & Ellison, 1982). Coefficient alpha for the current sample was .93.

Self-Efficacy. The 12-item Self-Efficacy Scale for Battered Women (SESFBW; Varvaro & Palmer, 1993) focuses on a woman's belief that she can engage in behaviors that indicate positive help-seeking actions and/or adaptive living skills. Values for each item were ranked on a scale ranging from 0 (couldn't do it at all) to 100 (completely sure I could do it). The scale has good construct validity and internal reliability. Coefficient alpha for the current sample was .88.

Coping Strategies. The Preliminary Strategic Approach to Coping Scale (P-SACS; Hobfoll, Dunahoo, Ben-Porath, & Monnier, 1994) is a 34-item measure of prosocial, antisocial, active, and passive coping abilities. Items were measured using a 5-point Likert scale ranging from *not at all what I would do* to *very much what I would do*. The P-SACS has good internal consistency reliability and is valid and reliable with inner-city populations. Coefficient alpha for the current sample was .76.

Social Support. The Social Support Behaviors Scale (SSB; Vaux, Riedel, & Stewart, 1987), a

45-item questionnaire, taps supportive behavior from family and from friends. Responses were recorded separately for family and for friends and were measured on a 5-point Likert scale ranging from *no one would do this* to *most of them would certainly do this*. The scale has good convergent, divergent, and concurrent validity (Vaux & Harrison, 1985; Vaux, Burda, & Stewart, 1986; Vaux et al., 1987). Coefficient alphas for the current sample were as follows: for family, .99; for friends, .99.

Effectiveness of Obtaining Resources. The Effectiveness of Obtaining Resources Scale (EOR; Sullivan, Tan, Basta, Rumptz, & Davidson, 1992) is an 11-item questionnaire that assessed how successful a woman perceived she had been in obtaining resources in 11 domains: education, material goods, employment, resources for children, health care, legal resources, transportation, housing, finances, childcare, and social support. Items were measured on a 4-point Likert scale ranging from *not very effective/successful* to *very effective/successful*. Coefficient alpha for the current sample was .86.

DATA ANALYSES AND RESULTS

Differences Between Attempters and Controls

Previously computed for this data set (Kaslow et al., 2002), descriptive data on key demographic variables and IPV severity were reported for the total sample and separately for attempters and controls (see Table I). Chi-square analyses were used to test for differences when the variable was coded dichotomously; *F* tests were used when the variable was coded continuously. No differences were found between the two groups on these key demographic variables or on level of IPV severity as measured by the ISA; therefore, there was no need to statistically control for them in the current study in any of the subsequent analyses.

Correlations Among Protective Factors

Significant positive intercorrelations were found between all possible pairs of the protective factors (i.e., hope, spiritual well-being, self-efficacy, coping, social support from family, social support from friends, and effectiveness of obtaining resources). Correlations ranged from .37 (between self-efficacy and social support from family members, and between coping and social support from friends) to

Table I. Demographic Characteristics of the Total Sample and Subsamples

Total	Group status			Statistical test
	Suicide attempters	Nonattempters		
Age				
<i>M</i>	32.0	31.1	32.8	$F(1, 200) = 1.59$
<i>SD</i>	9.7	9.6	9.8	
Education				
<i>M</i>	11.4	11.2	11.7	$F(1, 200) = 3.12$
<i>SD</i>	1.7	1.9	1.5	
No. of children	2.1	2.3	1.9	$F(1, 200) = 3.05$
Marital status (% married/cohabitating)	28.3	31.0	25.5	$\chi^2(1, N = 198) = 0.74$
Employment status (% employed)	41.0	35.0	46.5	$\chi^2(1, N = 199) = 2.71$
Monthly household income				$\chi^2(3, N = 191) = 4.12$
\$0–\$249	17.4	22.3	12.4	
\$250–\$259	25.7	24.5	26.8	
\$500–\$999	29.8	25.5	34.0	
\$1,000–\$1,999	20.4	20.2	20.6	
Literacy level (% at grade equivalent)				$\chi^2(3, N = 199) = 2.66$
3rd or below	2.0	3.0	1.0	
4th–6th	12.1	9.0	15.2	
7th–8th	35.7	37.0	34.3	
12th and above	50.3	51.0	49.5	
Index of spouse abuse—nonphysical	41.5	43.4	39.4	$F(1, 200) = 1.52$
Index of spouse abuse—physical	29.3	29.7	28.9	$F(1, 200) = 0.76$

Note. Sample sizes vary because of missing data.

.77 (between hope and spirituality). All correlations were significant at the $p < .01$ level and are reported in Table II.

Bivariate Logistic Regression Models

Because the outcome variable (SAS) was dichotomous, logistic regression was used for both the bivariate and multivariate regression analyses to determine the predictive relationship between each protective factors and SAS. Protective factors were dichotomized to yield results that are more intuitive and readily understood from a logistic regression print-out. Because there were no published cut-points for the protective factors, these variables were dichotomized using the top quartile of positive re-

sponses to indicate whether or not a woman endorsed that factor. Using the top quartile is a more conservative approach for measuring the existence of a significant effect relative than using a median split. Although either approach is somewhat arbitrary, the use of the top quartile is less so, as the top quartile was more likely to “catch” higher levels (i.e., a good “dose”) of each factor.

After dichotomizing the protective factor variables, bivariate logistic regressions were conducted for each of the seven protective factors. Findings revealed that, consistent with predictions, scores on each of the seven protective factors predicted nonattempter status (see Table III). Specifically, women with high levels of hopefulness were only 16% [95% Confidence Interval (CI) = 0.08, 0.31] as likely to

Table II. Intercorrelations Between Protective Factors

Factor	1	2	3	4	5	6	7
1. Hopefulness	C	.77**	.54**	.55**	.39**	.44**	.42**
2. Spiritual well-being		C	.52**	.57**	.44**	.46**	.42**
3. Self-efficacy			C	.44**	.37**	.39**	.44**
4. Coping				C	.40**	.37**	.40**
5. Social support, family					C	.46**	.47**
6. Social support, friends						C	.48**
7. Effectiveness of obtaining resources							C

** $p < .01$.

Table III. Crude Odds Ratios and 95% Confidence Intervals for Decreasing Suicide Attempts by Protective Factor Variables in Bivariate Logistic Regression Equations

Protective factor variables	Percent of attempting suicide	Cruded odds ratio	95% CI ^a
Hopefulness			
No	86	1.00	
Yes	14	0.16	0.08, 0.31
Spiritual well-being			
No	90	1.00	
Yes	10	0.19	0.09, 0.41
Self-efficacy			
No	86	1.00	
Yes	14	0.30	0.15, 0.61
Coping			
No	81	1.00	
Yes	19	0.50	0.26, 0.96
Social support, family			
No	90	1.00	
Yes	10	0.17	0.08, 0.36
Social support, friends			
No	85	1.00	
Yes	15	0.33	0.17, 0.65
Obtaining resources			
No	83	1.00	
Yes	17	0.38	0.20, 0.74

Note. CI: confidence interval.

^aNinety-five percent confidence interval does not include 1.

have attempted suicide as women with lower levels of hopefulness. Similarly, for high levels of spiritual well-being, women were only 19% (CI = 0.09, 0.41) as likely; for high levels of self-efficacy, only 30% as likely (CI = 0.15, 0.61); for high levels of coping, only 50% (CI = 0.26, 0.96) as likely; for high levels of social support from family, only 17% (CI = 0.08, 0.36) as likely; for high levels of social support from friends, only 33% (CI = 0.17, 0.65) as likely; and for high levels of effectiveness in obtaining resources, women were only 38% (CI = 0.20, 0.74) as likely to have attempted suicide than were women with lower levels of these factors, respectively.

Multivariate Logistic Regression Model

Next, SAS was regressed on all seven protective factors simultaneously to determine the unique contribution of each protective factor in predicting SAS. Results of the multivariate logistic regression revealed that two of the seven protective factors (i.e., hope and social support–family) remained uniquely associated with nonattempter status after controlling for all other protective factors (see Table IV). Specifically, women who endorsed high

Table IV. Adjusted Odds Ratios and 95% Confidence Intervals for Decreasing Suicide Attempts by Protective Factor Variables in Multivariate Logistic Regression Equations

Protective factor variables	Adjusted odds ratio	95% CI
Hopefulness		
No	1.00	
Yes	0.25	0.11, 0.57 ^a
Spiritual well-being		
No	1.00	
Yes	0.71	0.25, 1.98
Self-efficacy		
No	1.00	
Yes	0.75	0.31, 1.82
Coping		
No	1.00	
Yes	1.16	0.51, 2.62
Social support, family		
No	1.00	
Yes	0.27	0.11, 0.68 ^a
Social support, friends		
No	1.00	
Yes	1.11	0.43, 2.85
Obtaining resources		
No	1.00	
Yes	0.81	0.35, 1.88

Note. CI: confidence interval.

^aNinety-five percent confidence interval does not include 1.

levels of hopefulness were only 25% (CI = 0.11, 0.57) as likely to have attempted suicide as women with lower levels of hopefulness; women who endorsed high levels of social support from family were only 27% (CI = 0.11, 0.68) as likely to have attempted suicide as were women with lower levels of social support from family. Additionally, the multivariate logistic regression model had very good predictive value. A woman's suicide attempt status could be predicted accurately 69.5% of the time, assuming knowledge of her scores on the protective factor variables in the model.

Cumulative Protection Model

To test the cumulative protective factor model, groups were formed on the basis of the number of protective factors a woman endorsed to represent a woman's level of protection from the likelihood of making a suicide attempt. Because a much smaller percentage of participants endorsed three, four, five, six, or seven factors, these categories were collapsed into one category (i.e., Category 4 = three or more protective factors). The following groups were formed: (1) zero protective factors, $n = 66$; (2) one protective factor, $n = 54$; (3) two protective

factors, $n = 28$; and (4) three B 7 protective factors, $n = 52$. The group with zero risk factors served as the reference category to which the other groups were compared. Dummy coding was used to compare the groups, and all dummy variables were simultaneously entered into a logistic regression model predicting SAS. Women who endorsed one protective factor, adjusted odds ratio (AOR) = 0.79, 95% CI = 0.37, 1.67, or two protective factors, AOR = 0.50, CI = 0.20, 1.23, were less likely to have attempted suicide than women with no protective factors, but because the 95% confidence interval included 1, these findings were not statistically significant. Women who endorsed three to seven protective factors, AOR = 0.11, CI = 0.04, 0.25, were significantly less likely to have attempted suicide than women endorsing no protective factors. Compared to women who endorsed zero protective factors, women who endorsed three to seven protective factors were only 11% as likely to have attempted suicide.

DISCUSSION

Findings support the contention that all seven protective factors against suicide attempts (i.e., hope, spiritual well-being, self-efficacy, coping, social support from family members, social support from friends, effectiveness of obtaining resources) are positively related to one another in a sample of low-income, African American women. As expected, women who endorsed high levels of these protective factors were less likely to attempt suicide. However, only two protective factors, hope and social support from family, were able to distinguish uniquely African American women who had not made a suicide attempt from those who had made one or more suicide attempts. Although only two protective factors were uniquely associated with nonattempter status in the multivariate model, the model had very good predictive value; suicide attempt status was predicted correctly 69.5% of the time if one had knowledge of a woman's scores on the protective factors in the model. Interestingly, women who endorsed one or two protective factors were not significantly less likely to attempt suicide than were women who did not endorse any protective factor. However, women who endorsed three or more protective factors were only 11% as likely to attempt suicide, suggesting partial support for a linear association between the number of protective factors and a lower likelihood of suicide attempt.

The high, positive correlations between pairs of the seven protective factors are consistent with both the theoretical and empirical literature that shows considerable overlap in the conceptualization and measurement of these factors. For example, the positive association between self-efficacy and decreased suicide risk was shown to be partially mediated by social support from family and friends and by effectiveness of obtaining resources (Thompson, Kaslow, Short, et al., 2002). Furthermore, the "positive illusions" generated by the active process of hoping can be compared to a kind of faith, or spiritual belief (Taylor et al., 2000). These high protective factor associations also are consistent with other studies that show positive relations among self-transcendent spiritual states, cognitive and emotional well-being, sense of coherence, hope, and/or self-esteem (e.g., Coward, 1996; Few & Bell-Scott, 2002; George et al., 2002; Masten & Coatsworth, 1998; Range & Penton, 1994). The results of the bivariate regressions also are in keeping with findings from previous research showing that hope, spiritual well-being, self-efficacy, coping, social support from family and friends, and effectiveness of obtaining resources are protective factors against suicidal behavior.

The unique predictive value of hope is consistent with the theory and burgeoning empirical data from the field of mental health nursing, in which engaging and inspiring hope has led to advances in the treatment of suicidal inpatients (e.g., Collins & Cutcliffe, 2003), and with Beck's contention that the loss of hope may be the single greatest predictor of suicidal behaviors (Beck, 1986; Beck, Brown, Berchick, Stewart, & Steer, 1990; Beck, Weissman, Lester, & Trexler, 1974). A new perspective is needed, however, to extend the definition of hope beyond the negative definition in much of the literature as the absence of hopelessness (Hanna, 1991), as positive and negative affective and cognitive psychological states are negatively correlated but not at levels so high as to suggest redundancy (Taylor et al., 2000).

The finding that social support from family members also was a unique predictor of nonattempter status is consistent with Hyman and Williams' (2001) finding that social support is a strong protective factor among resilient African American survivors of childhood sexual abuse, particularly support from someone significant in the woman's life. Further, researchers posited that social support may be one of the most important protective factors in suicide interventions (Blumenthal & Kupfer, 1990; Canetto & Lester, 1995). Perhaps

more importantly, this finding is consistent with theories of the sociocultural context in which the lives of African American women are shaped. Throughout the twentieth century, African Americans have survived (and sometimes thrived) in the face of overwhelming poverty, racial segregation and deprivation, limited education, and denial of basic human rights (Gary, Yarandi, & Scruggs, 2003). Adaptive strategies for surviving these stresses on a daily basis have included a strong reliance on families and kinship networks (often including members of one's church) to provide support (Early, 1992; Gary et al., 2003; Gibbs, 1997; Heron, Twomey, Jacobs, & Kaslow, 1997; Hurd, Moore, & Rogers, 1995). Thus, views of resilience in this population must keep this historical and cultural context at the forefront. Further, African American kinship networks may include nonblood relatives, and the concept of family support is likely broader in scope for African Americans than for European Americans. Thus, the African American women in this study may have categorized close, emotionally supportive friends as family.

The finding from the cumulative protective factor model lends support to the idea that the number of protective factors experienced by abused, African American women may be as important as the specific protective factors experienced. Clearly, the process of explicating who is most resilient and protected from making a suicide attempt should include the absolute amount of protection a woman endorsed. Because many low-income, abused African American women bear the daily burden of racism, sexism, social stratification, and lack of education, it may be that one or two protective factors are simply not enough to offer a decreased likelihood for suicide attempts. Furthermore, other salient protective factors may exist that should be added to this model, perhaps resulting in a stronger linear association.

This study focused purposefully on protective, or resilience, factors and did not include risk factors. A similar data analytic strategy was used to examine risk factors contributing to suicide attempts among African American women experiencing IPV (Thompson, Kaslow, & Kingree, 2002). Thus, a limitation of this study is that it did not examine the interaction of risk and resilience factors. Future studies should seek to disentangle the additive or interactive effects of both risk and resilience factors in this population (e.g., Are risk and resilience factors just flip sides of the same coin, or are they distinct constructs? How might they combine to predict suicidal

behavior?). It is noteworthy in this regard that the linear protection model against suicide risk was not a mirror image of the linear risk factor model (see Thompson, Kaslow, & Kingree, 2002) for suicide attempts, thus lending support to the notion that a protective factor does not necessarily equal the opposite, or the absence, of a risk factor. Clearly, there is something more dynamic going on with the protective factors than we currently know. For example, hope and social support may be particularly strong antidotes for a number of distinct risk factors in this sample.

Several other study limitations should be noted. First, the results may not be generalizable to other populations. Second, because the data were cross-sectional it was not possible to imply causation or to test the direction of the effects. Third, there may be other psychosocial protective factors that are important to examine. Fourth, this study relied on self-report and retrospective data, which may have affected the validity of the women's responses. Fifth, this study used a broad definition of suicide attempt that included women with low potential for lethality, and this may have resulted in a heterogeneous group of attempters who differed on degree of suicide lethality and suicide intent. Finally, the study did not include women who did not seek medical help for injuries sustained after a suicide attempt. Thus, although the sample was representative of those presenting to the hospital, it may not be representative of suicide attempters that reside in the community. Thus, future studies may include groups of women from different social classes and ethnic backgrounds; use prospective and longitudinal designs; incorporate other potential protective factors (e.g., attributional style, physical health, positive ethnic identity, problem-solving skills); use mediating and moderating models (and structural equation modeling) to explicate the relations among the protective factors, risk factors, IPV, and suicide attempts; include designs that group together women who more closely match one another on degree of suicide attempt lethality and intent; and increase the representativeness of the sample.

In spite of these limitations, several strengths should be noted. The study adds to the literature by further examining the association between selected protective factors and suicide risk in abused African American women, an understudied and underrepresented population. There is a relative paucity of research on IPV and suicide attempts in this population (Canetto & Lester, 1995; Kanuha, 1994; Kaslow et al., 1998). The use of suicide attempts as a marker

for suicidal risk is more robust than the use of suicidal ideation; attempts represent a more reliable and valid measure of suicidal behavior (Kachur et al., 1995; Maris et al., 1992). There has been no previous use of a cumulative model to test for a linear protective factor model (vs. a linear risk factor model) for modeling lower suicide attempt risk. In this regard, this study extended the use of the cumulative model, which has been used to successfully to test for a linear relation between the number of risk factors endorsed by abused, African American women and suicide attempt risk (Thompson, Kaslow, & Kingree, 2002), a linear relation between child maltreatment and suicide attempt risk (Anderson, Tiro, Price, Bender, & Kaslow, 2002), and a graded relation between breadth of exposure to abuse or household dysfunction during childhood and multiple risk factors for several leading causes of death (including suicide) in adults (Felitti et al., 1998). The fact that only partial support for the model was found may reflect the strong intercorrelations among the seven protective factors or that the specific protective factors experienced (in this case, hope and social support from family) are more important than the absolute number of protective factors experienced. Either way, this study represents an effort to understand the importance of the amount of protection endorsed and its relation to decreased risk.

Study results can inform and augment community based preventive interventions and ensure the cultural competence of such interventions (Heron et al., 1997; Jackson, 2000). Persons conducting preventive interventions with abused women must assess these women for suicidality and programs designed to decrease suicidal risk must include in their assessment protocols questions about IPV. Further, bolstering the protective factors examined in this study in high-risk samples of abused women (e.g., women residing in domestic violence shelters) will empower these women away from "victim" status and toward active coping. The programs should be designed and implemented to strengthen spirituality, self-efficacy, adaptive coping, and social support from friends. Women should be helped to access resources for child care, health care, employment, and education; as women feel more empowered to access these resources, their self-efficacy should benefit in the process (Heron et al., 1997; Thompson, Kaslow, & Kingree, 2002). Some of the best community-based programs have as their major focus helping abused women secure needed resources (Bybee & Sullivan, 2002; Sullivan & Bybee, 1999; Sullivan &

Rumptz, 1994). Also, interventions should aim to increase the *number* of protective factors African American women experience to decrease their suicide risk. In the area of social support, it is important for people conducting community-based interventions, to understand the historical trend of African Americans to rely less on professional help and more on naturally occurring resources (i.e., family systems) (Heron et al., 1997; Jackson, 2000; Kanuha, 1994) and thus to work with the women to strengthen their engagement with such resources. As importantly, findings highlight the need to strengthen or instill hope. A concerted effort should be made to use the traditional strengths of African American families and kinship networks to protect women from suicide in the aftermath of IPV.

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