The Interplay Among Risk Factors for Suicidal Ideation and Suicide: The Role of Depression, Poor Health, and Loved Ones' Messages of Support and Criticism

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When individuals who receive social support are in poor physical or mental health and are criticized or made to feel unwanted, they may perceive themselves as a burden. Poor physical health and depression were hypothesized to exacerbate the harmful effects on suicidal ideation of receiving critical negative messages and of receiving social support. These hypotheses were tested using secondary analyses of data from a sample of 533 unemployed married individuals who were assessed shortly after job loss, and 6 months later. The results of our analyses supported the hypotheses and demonstrated that for participants with poor health or high level of depressive symptoms an increase in critical messages and social support (from Time 1 to Time 2) predicted increased suicidal ideation. This relationship was not observed for non-depressed participants in good health. The results are discussed in terms of their implications for suicide prevention.

KEY WORDS: suicide; suicidal ideation; burden; social support; physical illness; depression.

INTRODUCTION

Suicide poses a serious health threat to Americans. The most recent mortality statistics indicate that, in 1996, suicide was responsible for nearly 31,000 deaths, occurring at a rate twice that of homicide (Peters, Kochanek, & Murphey, 1998). Recently, the U.S. Public Health Service (1999) outlined a number of risk factors that could be used to inform interventions aimed at reducing the incidence of suicide. Among these risk factors were depression, physical illness, financial and work loss, and social isolation.

On the basis of the adverse effects of social isolation, a number of researchers have suggested that the receipt of social support may serve a protective function for individuals who are distressed because of considerable loss (e.g., Hobfoll & Spielberger,

1992)—for example, those who suffer from a physical or mental illness, or who have lost their jobs. Indeed, numerous studies have demonstrated that social support promotes good mental health, including the reduction of suicidal thoughts and wishes (e.g., Bagley, 1975; Hovey, 2000; Ponizovsky & Ritsner, 1999). Across many definitions of *social support*, the benefits of social support extend well beyond reducing suicide risk to lower morbidity and mortality (e.g., Berkman & Syme, 1979; Blazer, 1982; House, Landis, & Umberson, 1988; House, Robbins, & Metzner, 1982). And, the numerous benefits of receiving social support have been well documented across a variety of settings and populations, including patients suffering from terminal illness. For example, among dialysis patients, higher social support predicts lower depression and anxiety (Burton, Lindsay, & Klines, 1983; Dimond, 1979; Mallard, 1977), improved health-related quality of life (Tell et al., 1995), improved compliance with the medical regimen (Hilbert, 1985; Hitchcock, Brantley, Jones, & Tipton-Mcknight, 1992), and decreased nonsuicidal mortality (Christensen, Weibe, Smith & Turner,

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1994; Kimmel et al., 1998; McClellan, Stanwyck, & Anson, 1993).

However, studies demonstrating that social support decreases suicidal ideation rarely control for other factors that may be related to suicide risk (de Man, 1999). The failure to control for these factors could be problematic if the benefits of social support are due to the effects of social support on either depression or health status. Indeed, de Man (1999) found that the inverse relationship between social support and suicidal ideation disappeared when the effect of depression was held constant. This finding raises the possibility that social support may not always serve a protective function for individuals who are at risk for suicide. Thus, despite the findings that are suggestive of the preventive effects of social support, it may be premature to conclude that suicide prevention efforts should be designed to increase the amount of social support that is available to individuals with an elevated risk for suicide.

When Receiving Support Places a Burden on Loved Ones

There may be circumstances in which receiving support from others is detrimental to health outcomes. Consider a chronically ill patient who is having all of his or her physical and emotional needs met by a supportive, caregiving spouse, but whose health status prevents reciprocation. This situation may make the patient feel that he or she is a burden on the spouse. Conceivably, the receipt of supportive messages from a spouse may be accompanied by the receipt of critical negative messages, possibly due to feelings of frustration, anger, and resentment on the part of the spouse whose caregiving support is not being reciprocated. In essence, messages of support and criticism could each remind the patient that help is being provided at great cost to the caregiver. If this is true, then, both messages of support and of criticism could make the patient feel worse about his or her condition, and possibly more suicidal.

Research is consistent with this possibility. For example, social support has been shown to exert an adverse effect on health and well-being in elderly populations for whom a sense of burden may be especially high (Hays, Saunders, Flint, Kaplan, & Blazer, 1997; Seeman, Bruce, & McAvay, 1996). And, spousal criticism has been linked to depression (Thompson, Whiffen, & Aube, 2001), and to distress among cancer patients (Manne, 1999). The consequent feelings

of being criticized, unwanted, and/or like a burden are associated, in turn, with increased suicidal ideation (Brown, Dahlen, Mills, Rick, & Biblarz, 1999; de Catanzaro, 1984; Woznica & Shapiro, 1990). Moreover, the deleterious effects of feeling like a burden on suicidal tendencies (suicidal ideation and attempts) have been demonstrated across populations of adolescents, the elderly, and homosexuals (Brown et al., 1999; de Catanzaro, 1984, 1995). A prospective study of individuals hospitalized for exhibiting suicidal tendencies demonstrated that the extent to which individuals were considered to be a burden by their family predicted completed suicide within a 60-day period (Motto & Bostrom, 1990).

Poor Health, Depression, and Job Loss: A Predisposition for Becoming a Burden to Others

The possibility that being a burden to others triggers suicidal tendencies may help explain why risk factors for suicidal behavior include poor physical health (Jin & Zhang, 1998; Kel, Ravies, & Davies, 1991), depression (e.g., Beck, Steer, Beck, & Newman, 1993; Brubeck & Beer, 1992; de Man & Leduc, 1995; Jin & Zhang, 1998; Yang & Clum, 1994), and job loss (Brown, Beck, Steer, & Grisham, 2000; Dooley et al., 1994; Kessler, House, & Turner, 1987). Those who are physically ill, depressed, or who have lost their job may be more likely than those in good physical and mental health, or who are gainfully employed, to overextend family resources and consequently to feel like a burden.

Whether poor physical health, depression, or job loss causes individuals to become or feel like a burden to others may depend upon the kind of messages they receive from close family members. Messages that communicate to individuals that they are loved and cared about may make individuals feel regretful about the burden they place on their loved ones. Messages that criticize the individuals or leave individuals feeling unwanted may also make them feel like a burden. Hence, poor health, depression, and job loss are circumstances in which the receipt of both supportive and critical negative messages from a spouse may trigger suicidal tendencies.

This Study

The purpose of this study is to examine and disaggregate the effects of the various risk factors for

suicide on suicidal ideation. More specifically, we propose to examine the direct and moderating effects of poor physical health, depression, emotional support, and critical negative messages that underlie feelings of being a burden on suicidal ideation. To examine the study's hypotheses, we reasoned that it would be necessary to investigate individuals who are facing a loss of resources and consequently are likely to perceive themselves as a burden to close family members. We, therefore, examined the effects of poor health, depression, and loved ones' messages of support and criticism on suicidal ideation using data collected from a sample of workers who had lost their jobs.

We tested the following hypotheses:

1. *Critical negative messages, depression, and poor physical health have unique, direct, adverse effects on suicidal ideation.* Previous work demonstrates a robust association between depression, physical illness, and suicide (e.g., Jin & Zhang, 1998). Those who are depressed or physically ill are more likely to have suicidal thoughts and wishes, and more likely to attempt suicide. Similarly, the receipt of critical negative messages, including feeling unwanted, is associated with increased suicidal behavior (Woznica & Shapiro, 1990).
2. *When depression, physical health, and the receipt of critical negative messages are controlled for, the receipt of supportive messages increases, rather than decreases, suicidal ideation.* Although previous research demonstrates a protective effect of social support on suicidal ideation (Bagley, 1975; Hovey, 2000; Ponizovsky & Ritsner, 1999), much of this work is based on studying social support without controlling for other risk factors for suicidal behavior such as critical negative messages, poor health, or depression. Thus, when the adverse effects of other risk factors are removed, the receipt of supportive messages may increase suicidal ideation if it reminds individuals of the burden they place on their spouse.
3. *Poor physical health and depression exacerbate the adverse effects on suicidal ideation of (a) critical negative messages and (b) supportive messages.* If the adverse effects of messages of support and criticism are due to the sense of burden created, then these messages should be most harmful to individuals with the greatest predisposition to feel like a burden, because of either poor health or depression.

METHOD

Respondents, Design, and Procedure

This study is based on secondary analyses of the subsample of 533 married respondents who were included in a larger longitudinal study involving 2,005 recently unemployed job seekers. Detailed information about the larger study, including the characteristics of the sample, intervention process, and its assessment are reported by Vinokur, Price, and Schul (1995). A total of 31,560 job seekers were contacted and screened for eligibility in four offices of the Michigan Employment Security Commission in southeastern Michigan. Two thousand and five individuals met the eligibility criteria and were successfully recruited to participate in a study about stress, health, work, and unemployment. To be eligible for the study, participants had to be unemployed for less than 13 weeks, still seeking a job, and not expecting to retire or return to their previous job within the next 2 years.

Two hundred and four individuals who agreed to participate were identified as having high levels of depressive symptoms and excluded from the preventive intervention program. Nevertheless, these participants provided responses to the follow-up data collection instruments used in the study. The remaining participants were randomly assigned to either a control or an experimental condition. Respondents in the experimental condition participated in a job-search skill enhancement intervention to promote reemployment. This intervention consisted of five 4-hr sessions conducted over a 1-week period. Three pairs of male and female cotrainers conducted the intervention workshops in groups of 12–22 participants. A total of 671 participants received the intervention over a 22-week period between March and August 1991. Respondents in the control condition received a booklet of printed material on job-search strategies.

The data were collected using mailed self-administered questionnaires. The analyses reported in this investigation are based on the data collected at pretest (T1) and at 6-month follow-up (T2), when 66% of the respondents were reemployed. Of those who were found eligible and recruited to the study, 73% completed and returned the pretest (Time 1) mailed questionnaire, and, of those, 87% completed the 6-month follow-up questionnaire.

Of the total sample of respondents for this study, 533 were married unemployed job seekers. Fifty-five percent of the sample was male and 45% was female, 83.1% was White, 12.6% was Black, and 2.5% was other. The mean age was 37.69 years (ranging from 19 to 76). Educationally, only 5.9% did not complete high school, 33.5% had a high school education, 23.9% had some college, 14% had 4 years of college, and 13.6% had more than 4 years of college.

Measures

Pretest measures of depression, suicidal ideation, physical health, supportive messages, and critical negative messages were obtained at least 2 weeks prior to the intervention (Time 1), and a follow-up questionnaire consisting of the same items was mailed to respondents 6 months after the conclusion of the intervention (Time 2). Participants were paid $10 for returning the mailed questionnaire.

Demographic information such as age, marital status, gender, and educational background was assessed with standard survey questions. *Depression* was measured using a subscale of 10 items (Cronbach's $\alpha = .90$) from the Hopkins Symptom Checklist (Derogatis, Lipman, Rickles, Uhlenhuth, & Covi, 1974). Respondents were required to use a 5-point Likert-type scale to indicate how much ($1 = not\ at\ all, 5 = extremely$) they had been bothered or distressed in the past 2 weeks by depressive symptoms such as feeling blue, slowed down, or lonely.

Suicidal ideation was assessed with one item from the Hopkins Symptom Checklist (Derogatis et al., 1974). This item asked participants to indicate how much ($1 = not\ at\ all, 5 = extremely$) they thought of ending their own life in the past 2 weeks.

Poor physical health was assessed with the following four items: "Would you say your health is excellent, good, fair, or poor?"; "To what extent do you have any particular health problems?"; "Thinking about the past two months, how much of the time has your health kept you from doing the kind of things other people your age do?"; "To what extent do you feel healthy enough to carry out things you would like to do?" Participants indicated their responses to the last three questions, using a 5-point Likert-type scale with anchors at either (1) *never, no extent and* (5) *a very great extent*, or (1) *all of the time* and (5) *none of the time*. An index was created by taking the mean of these items (Cronbach's $\alpha = .71$).

To assess *critical negative messages*, two items from the Social Undermining Scale (Abbey, Abramis,

& Caplan, 1985) were used. Participants were asked to indicate, over the past 2 weeks, how much ($1 = not\ at\ all, 5 = a\ great\ deal$) their spouse made them feel unwanted or criticized them. The mean of these two items constituted the critical negative messages index (Cronbach's $-\alpha = .76$).

Finally, the caring aspect of supportive messages was measured with a subset of three items from Abbey et al.'s Social Support Scale (Abbey et al., 1985). The three items from this scale were chosen to represent an index of the extent to which participants felt cared for by their spouse. Specifically, participants were asked to indicate how much ($1 = not\ at\ all, 5 = a\ great\ deal$) their spouse made them feel cared for, listened to, and understood. The mean of these three items constituted the supportive messages index (Cronbach's $\alpha = .87$).

RESULTS

To test the first hypothesis that poor physical health, depression, and critical negative messages have unique, adverse effects on suicidal ideation, we conducted a least squares multiple regression analysis to predict suicidal ideation at Time 2. This analysis entailed the simultaneous entry of the experimental condition, pretest suicidal ideation score (T1), and Time 1 and 2 measures of poor health, depression, and critical negative messages. The results of this analysis are presented in Table I. As predicted, Time 2 measures of poor health and depression were each predictive of suicidal ideation at Time 2 (respectively for poor health and depression: $\beta = .20, p < .05; \beta = .38, p < .05$). These results suggest that increases in poor health and depression increase suicidal ideation. Consistent with these predictions, increases in critical

Table I. Regression Analysis of the Effects of Health, Depression, and Critical Negative Messages on Suicidal Ideation at Time 2

Predictors	β
Experimental condition	−.05
Time 1 predictors	
Suicidal ideation	.17**
Poor health	−.11
Depression	−.04
Critical negative messages	−.03
Time 2 predictors	
Poor health	.20*
Depression	.38**
Burden message	.10†

†$p < .10.$ *$p < .05.$ **$p < .01.$ ***$p < .001.$

Table II. Hierarchical Regression Analysis of the Effects of Social Support, Health, Depression, and Critical Negative Messages on Suicidal Ideation at Time 2

Predictors	Step 1 (β)	Step 2 (β)	Step 3 (β)
Experimental condition	−.05	−.06	−.05
Time 1 predictors			
Suicidal ideation	.25***	.18**	.17***
Social support	−.00	.02	.02
Depression		−.04	−.04
Poor health		−.11*	−.11
Critical negative Messages			.00
Time 2 predictors			
Social support	−.12†	.03	.15*
Depression		.42***	.39***
Poor health		.19**	.21***
Critical negative Messages			.19**

$^\dagger p < .10.$ $^* p < .05.$ $^{**} p < .01.$ $^{***} p < .001.$

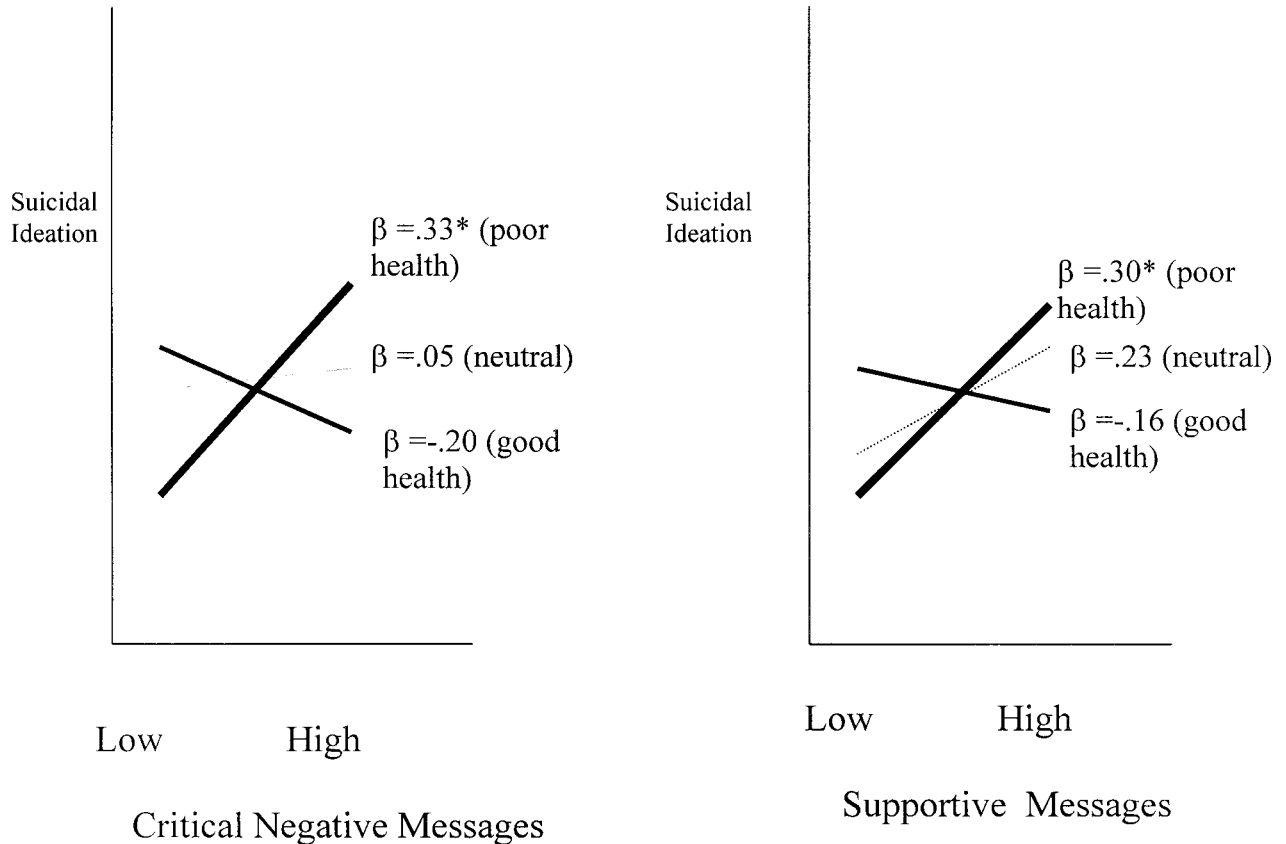negative messages at Time 2 predicted a trend for increased suicidal ideation at Time 2 ($\beta = .10$, *ns*). As will be shown later, critical negative message produce a more clearly significant effect on suicide when additional variables are controlled.

To test the second hypothesis that supportive messages increase suicidal ideation when physical health, depression, and critical negative messages are controlled, a hierarchical regression procedure was conducted. (The results of this analysis are presented in Table II.) In Step 1 of the analysis we controlled for the experimental condition and Time 1 measures of suicidal ideation and supportive messages. Results at this step indicated that, consistent with the social support literature (e.g., Bagley, 1975; Hovey, 2000; Ponizovsky & Ritsner, 1999), increased social support at Time 2—feeling cared for—decreased suicidal ideation, however this effect was not statistically significant ($\beta = -.12$, $p = .06$). The results of the second step of this procedure indicated that the inverse relationship between social support and suicidal ideation disappeared when Time 1 and Time 2 measures of physical health and depression were entered into the model ($\beta = .03$, *ns*). This result is consistent with de Man's finding that by holding depression constant, an inverse relationship between social support and suicidal ideation no longer emerges (de Man, 1999). Finally, upon entering the effects of Time 1 and Time 2 critical negative messages on the third step, increases in social support increased suicidal ideation ($\beta = .15$, $p < .05$), which is consistent with our prediction. In addition, the effect of critical negative messages on suicidal ideation was also statistically significant at this

step ($\beta = .19$, $p < .05$), thus supporting our first hypothesis that critical negative messages have a unique, direct adverse effect on suicidal ideation.

To test the third hypothesis that poor health exacerbates the adverse effects of critical negative messages and supportive messages on suicidal ideation, a hierarchical regression procedure was conducted in which Time 2 measures of suicidal ideation were regressed on the interactions of (a) Time 2 measures of poor health and critical negative messages and (b) Time 2 measures of poor health and supportive messages. This analysis controlled for Time 1 measures of suicidal ideation, and Time 1 and Time 2 measures of poor health, depression, critical negative messages, and supportive messages. As predicted, poor health at Time 2 intensified the effect of Time 2 critical negative messages ($\beta = .25$, $p < .05$) on Time 2 suicidal ideation. In the same vein, poor health at Time 2 also exacerbated the effects of Time 2 supportive messages ($\beta = .12$, $p < .05$) on suicidal ideation at Time 2.

To determine whether the nature of these interactions was in the predicted direction, both interactions were examined according to the guidelines suggested by Aiken and West (1991) for interactions between predictors assessed using continuous scales. Thus, we examined the simple slopes of critical negative messages at Time 2 and supportive messages at Time 2 as a function of different levels of health at Time 2. A tertiary split was used to obtain values of Time 2 health ranging from poor to good health. A simultaneous regression procedure, in which Time 1 suicidal ideation and poor health, and Time 1 and 2 measures of depression, critical negative messages, and supportive messages were used to predict suicidal ideation at Time 2 for each value of health at Time 2. Results of the regression procedure conducted on the poor health subsample indicated that, as predicted, both critical negative messages and supportive messages increased suicidal ideation for this subsample (respectively for critical negative messages and supportive messages: $\beta = .33$, $\beta = .30$, both $ps < .05$). The same procedure conducted on the good health subsample indicated that there was no effect of either critical negative messages ($\beta = -.20$, *ns*) or supportive messages ($\beta = -.16$, *ns*) on suicidal ideation. Similarly, for the moderately healthy subsample, there was no effect on suicidal ideation of either critical negative messages ($\beta = -.05$, *ns*) or supportive messages ($\beta = .23$, *ns*). The effects of critical and supportive messages as a function of health status are displayed in Fig. 1.

Suicidal
Ideation

β =.33* (poor
health)

β =.05 (neutral)

β =-.20 (good
health)

Low   High

Critical Negative Messages

Suicidal
Ideation

β =.30* (poor
health)

β =.23 (neutral)

β =-.16 (good
health)

Low   High

Supportive Messages

Fig. 1. The effect of messages of support and criticism on suicidal ideation as a function of health status.

To test the hypothesis that depression intensifies the effect of critical negative messages and supportive messages on suicidal ideation, another hierarchical regression procedure was conducted on Time 2 measures of suicidal ideation. Thus, the interactions of (a) depression and critical negative messages at Time 2 and (b) depression and supportive messages at Time 2 were tested in a model that controlled for the effects of Time 1 measures of suicidal ideation, and Time 1 and 2 measures of poor health, depression, critical negative messages, and supportive messages. As predicted, the results of this analysis indicated that the interactions of depression with critical negative messages and with supportive messages were significant (respectively for critical negative messages and supportive messages: $\beta = .25$, $\beta = .15$, both $ps < .05$). These results suggest that depression exacerbated the effects of critical messages and supportive messages to predict increased suicidal ideation.

To determine whether the nature of these interactions was in the predicted direction, the guidelines developed by Aiken and West (1991) for examining

interactions were once again followed. Thus, we examined the simple slopes of critical negative messages at Time 2 and supportive messages at Time 2 as a function of different levels of depression at Time 2. A tertiary split was used to obtain values of depression ranging from a low level of depressive symptoms to a high level of depressive symptoms. A simultaneous regression procedure was run in which Time 1 suicidal ideation, poor health, and Time 1 and 2 measures of depression, critical negative messages, and supportive messages were used to predict suicidal ideation at Time 2 for each value of depression. Results of the regression procedure conducted on the subsample with the highest level of depressive symptoms indicated that, as predicted, both critical negative messages and supportive messages increased suicidal ideation for this subsample (respectively for critical negative messages and supportive messages: $\beta = .36$, $p < .05$; $\beta = .26$, $p = .06$). The same procedure conducted on the subsample with the lowest levels of depressive symptoms indicated that there was no effect of either critical negative messages ($\beta = .03$, ns) or supportive
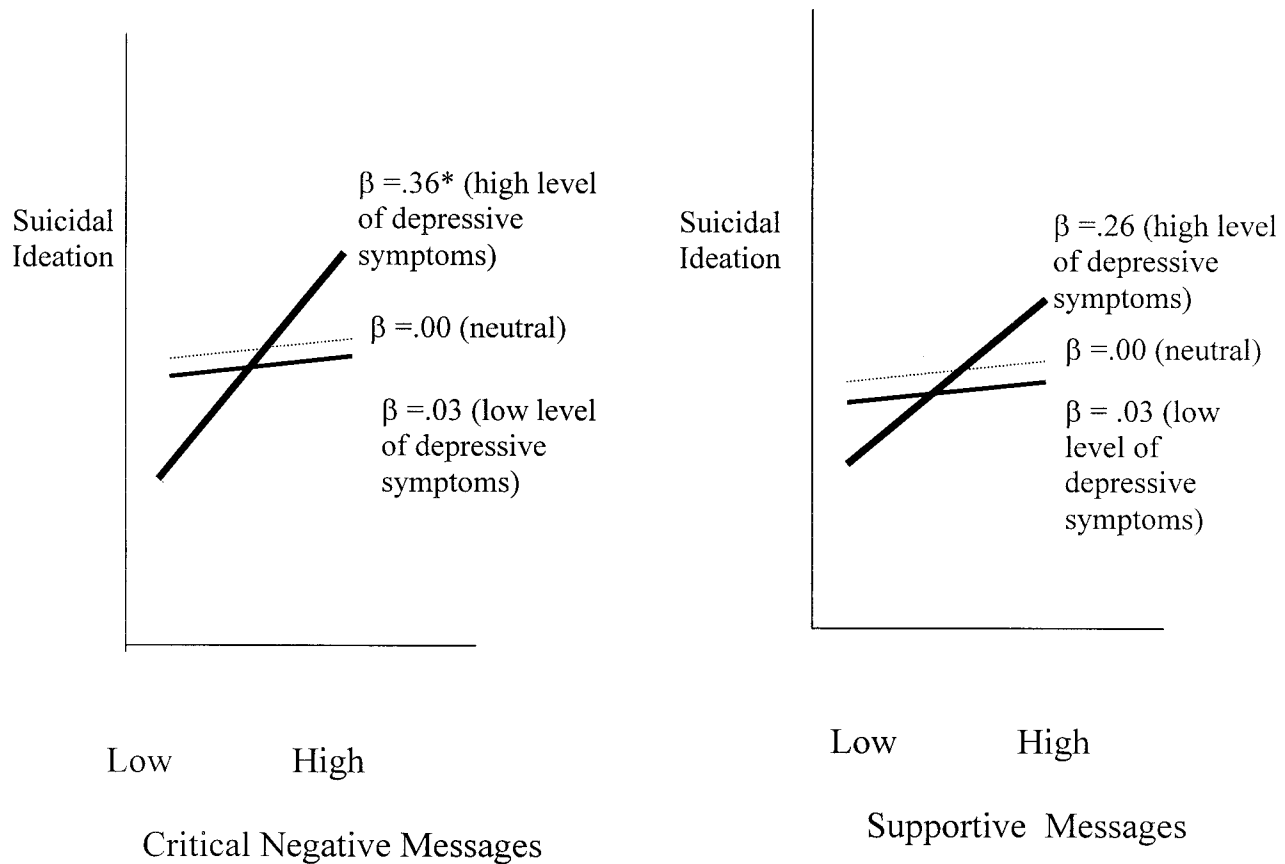
Fig. 2. The effect of messages of support and criticism on suicidal ideation as A function of depressive symptoms.

messages ($\beta = .03$, ns) on suicidal ideation. Similarly, for the subsample with moderate levels of depressive symptoms, there was no effect of either critical negative messages ($\beta = -.00$, ns) or supportive messages ($\beta = -.00$, ns) on suicidal ideation (see Fig. 2 for a depiction of these simple effects of critical negative messages and supportive messages as a function of depressive symptoms).

DISCUSSION

The results of this investigation demonstrated that for unemployed workers the receipt of critical negative messages as well as supportive messages increased suicidal ideation. In addition, unemployed workers who were in poor health or who suffered from high levels of depressive symptoms also reported higher levels of suicidal ideation.

Although there are numerous investigations of the effects of poor health, depression, and social support on suicidal ideation, many investigations have examined these risk factors independently of one another (e.g., Bagley, 1975; Hovey, 2000; Ponizovsky & Ritsner, 1999). In contrast, the present study examined the unique contribution of each of these risk factors to suicidal ideation when all factors were considered together. By considering all factors simultaneously, we were able to reveal the distinct contributions of both positive and negative social messages. For example, supportive messages increased suicidal ideation once the effects of negative messages, depression, and poor health were held constant. Although few studies, if any, have suggested that there are conditions in which receiving support may be a risk factor for suicide, some have noted that social support is not always beneficial (e.g., Tilden & Galyen, 1987). Support that occurs in the context of a conflicted relationship is associated with increased negative psychological symptoms, and a stronger relationship between stress and symptoms (Sandler & Barrera, 1984). Support that is received but not reciprocated is hypothesized to reduce its protective effects (e.g., Bruhn & Philips, 1984). Thus, the results

of the present study add to a growing body of literature that delineates the conditions in which the receipt of social support may have adverse effects on the recipient.

In addition, this study demonstrated the exacerbating effects on suicidal ideation of both supportive and negative messages in the presence of poor health and depression. That is, the effects on suicidal ideation of receiving supportive or negative messages from a spouse differ as a function of the health and mental health status of the recipient. It was shown that loved ones' messages of support and criticism intensified suicidal ideation for individuals who were already in relatively poor physical health and/or who suffered from relatively high levels of depressive symptoms. With few exceptions (e.g., Schneider et al., 1991), the moderating effects of physical health and depression on risk factors for suicidal behavior have not been studied. Our findings suggest that it may be misleading to assume that risk factors for suicide are independent from one another as may be implied in the U.S. Public Health Service report (1999).

Limitations and Directions for Future Research

We hypothesized that feeling supported or criticized by a spouse would cause unemployed workers in poor health or with high levels of depressive symptoms to feel like a burden, and consequently experience suicidal ideation. Although our results supported the hypotheses we had no direct measure of burden. Hence, conclusions regarding a possible mediational role of burden would be premature. Nevertheless, the results of this study suggest that circumstances in which one is considerably dependent on another who also provides emotional support and/or communicates critical negative messages constitute risk for suicidal ideation. Whether or not a sense of burden mediates this effect, the findings demonstrate that this particular confluence of factors places individuals at risk for becoming self-destructive.

Placed in a broader context, our results are consistent with de Catanzaro's theory of self-destructive motivation (de Catanzaro, 1986, 1991). One of the central components of de Catanzaro's theory is that individuals will engage in suicidal ideation and behavior if they become a burden to their families to prioritize the needs of the family. A similar view of suicide was originally advanced by Durkheim (1897, 1951), who suggested that some individuals will commit "altruistic" suicide to benefit others. In this context, risk factors such as physical illness, depression,

and job loss may be associated with suicidal tendencies because they are also associated with circumstances in which individuals desire to relieve the burden placed on family members.

Alternatively, risk factors for suicide that involve considerable loss may trigger suicidal ideation not because of being a burden, but because of the trauma associated with facing multiple losses (Harvey & Weber, 1998). In fact, research suggests that the effect of cumulative loss on distress is nonlinear: Previous loss can accelerate the effects of future loss (Wells, Hobfoll, & Lavin, 1999). Indeed, our results are consistent with the possibility that losses such as physical illness and depression exacerbate the harmful effect of the loss of social resources, potentially conveyed by the receipt of critical negative messages. On the other hand, our results also demonstrated that poor health and depression exacerbate the harmful effects on unemployed individuals of receiving emotional support from a spouse. Some loss researchers consider social support to be a buffer against the deleterious effects of loss (e.g., Hobfoll & Spielberger, 1992). Thus, the tendency of supportive messages to intensify suicidal ideation for individuals facing loss may be somewhat inconsistent with current approaches to the psychology of loss.

Nevertheless, our study is not a definitive test of de Catanzaro's theory of self-destructive motivation, so conclusions regarding the veracity of a loss versus burden framework for understanding suicide would be premature. Moreover, loss and burden need not be mutually exclusive frameworks for understanding suicide. It may be, for example, that a burden circumstance triggers suicidal ideation precisely because it alerts individuals to the extent to which their condition results in secondary loss, perhaps by draining emotional resources from their family. Future research should investigate this possibility and examine whether a sense of burden intensifies the experience of vicarious loss on behalf of the family, or altruistic motivation directed towards family members.

Note that our results were obtained with measures of suicidal ideation rather than suicide attempts or completions. The low base rate of suicidal behavior makes it difficult to study suicide directly. Caution, therefore, should be used when generalizing findings from this investigation to predictors of completed suicide in the population at large: Completed suicide and suicidal ideation are not the same thing, and may, therefore, be a product of different sets of circumstances. Nevertheless, the research that investigates the link between suicidal ideation

and completed suicide suggests that suicidal ideation typically precedes suicidal behavior (e.g., Stillion & McDowell, 1991). And, research linking suicidal ideation to suicide attempts demonstrates that attempts are a powerful predictor of completed suicide (e.g., Maris, 1992). For this reason, Ponizovsky and Ritsner (1999) suggested that "the most suitable candidate for the investigation of suicide risk is suicide ideation..." (p. 377).

Implications for Suicide Prevention

The fact that poor health and depression messages exacerbated the adverse effects of spousal communication on suicidal ideation suggests avenues for the effective pursuit of suicide prevention. For example, the results of the present investigation may be used to help practitioners determine whether negative spousal interactions are likely to put a patient at risk for suicide. Our results suggest that individuals who feel criticized and/or unwanted may not be at risk for suicide unless they are also dependent on others in some way, because of either being unemployed, being in poor health, or suffering from depression. Moreover, our results suggest that it may be a mistake to assume that suicidal individuals will necessarily benefit from increased social support, especially if they are unemployed, depressed, or in poor health. Treatment and prevention efforts may be more effective if they are designed, instead, to help these individuals to reciprocate the support they receive.

In addition to alerting practitioners to the circumstances in which support and criticism are likely to have adverse effects on suicidal tendencies, our results also suggest that caution be used when assuming that treatments for depression will, by themselves, also reduce suicide risk. The fact that positive and negative spousal interactions and poor health increased suicidal ideation, after controlling for extent of depressive symptoms, raises the possibility that, at least in part, what triggers depression may be different than what triggers and sustains suicidal ideation and eventual suicide. Currently, the prevailing tendency is to assume that treatments for depression will also reduce the incidence of suicide (e.g., Katz, Streim, & Parmelee, 1994). Even the most recent U.S. Public Health Service report (1999) advocates treatment for depression as a means to control suicidal behavior. However, the results of the present investigation indicate that risk factors for suicide, such as poor health and critical negative messages, are predictive of suicidal ideation, whether or not an individual is already depressed. We have shown that the experience of depressive symptoms did not fully mediate the effect of poor health and critical negative messages on suicidal ideation. Therefore, the results of the present investigation strongly suggest that preventive efforts for suicidal behavior should not be solely designed as, or completely dependent upon, efforts to prevent depression.

One promising target for suicide prevention programs may be the reduction in perceived burden, advanced by de Catanzaro (1986, 1991). Whereas it may be difficult to help individuals recover from substantial loss or depression, the burden circumstance that accompanies loss may be more malleable. Efforts to eliminate an individual's belief that he or she is a burden to loved ones could include attempts to (a) help a suicidal individual recognize his or her contributions to family members, (b) help a suicidal individual reframe the burden circumstance as temporary, or (c) improve the communication of family members with the individual at risk to reduce critical negative messages that may lead to suicidal tendencies.

CONCLUSION

This study demonstrated that suicide risk may be understood by considering a confluence of factors that are indicative of a burden circumstance. For unemployed individuals, these factors appear to be poor health, depression, and messages of support and criticism. Future research should attempt to determine whether these factors lead to suicidal behavior in other at-risk populations, and whether these factors do so because they create a sense of burden. If a sense of burden mediates the deleterious combination of job loss, poor health, and/or depression, with social messages of support and criticism, then promising avenues for suicide prevention may be attempts to limit, counteract, or reduce individual perceptions of being a burden to others.

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