

THE PROVISIONS OF SOCIAL RELATIONSHIPS AND ADAPTATION TO STRESS

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Bumper stickers reading "Friends can be good medicine!" were distributed by the California Department of Mental Health in 1981 as part of a statewide health promotion initiative (California Department of Mental Health, 1981). The objectives of the initiative were to increase awareness of the health-promoting influence of supportive relationships and to encourage personal involvement providing support to others. Although the ultimate success of this project is unknown, its implementation reflects the degree to which a link between social support and health has become part of our belief system. Correlations between social support and health outcomes have been found in a range of contexts and using a variety of methods (for recent reviews, see Broadhead et al., 1983; Cohen & McKay, 1984; Cohen & Syme, 1985; Cohen & Wills, 1985; Sarason & Sarason, 1985; Thoits, 1982; Wallston et al., 1983; Wortman, 1984).

Although links between social support and health are consistently found, our understanding of the nature of this relation remains limited. A problem in past research was that social support was conceptualized unidimensionally, although it was operationalized in many different ways (e.g., marital status, community involvement, availability of confidants). More recent efforts have analyzed social support into component functions. Theorists differ somewhat with respect to the specific functions served by social support, but most conceptualizations include emotional sustenance, self-esteem building, provision of information and feedback, and tangible assistance (e.g., Cassel, 1976; Cobb, 1976, 1979; Cohen & McKay, 1984; Kahn, 1979; Kahn & Antonucci, 1980; Schaefer, Coyne, & Lazarus, 1981; Weiss, 1974). Once support is defined in terms of its functions, it is possible to generate hypotheses concerning the psychological processes through which social support has its effects.

Although clear theoretical formulations of the helping functions served by relationships are crucial in the generation of hypotheses, these predictions cannot be empirically tested without appropriate assessment instruments. As described in House and Kahn's (1985) recent review, a number of social support measures have been developed. The measures differ widely in their implicit models of social support, some assessing number of supporters, others tapping frequency of supportive acts, and still others measuring degree of satisfaction with support. A number of problems have plagued these measurement efforts. At the theoretical level, the authors of social support measures have rarely articulated the assumptions underlying their instruments. For example, if a measure assesses the number of supportive individuals, the assumption is that better outcomes are associated with the *quantity* of support sources. If a measure taps satisfaction with support, the assumption is that better outcomes are associated with the perception that support is adequate for one's needs, regardless of the number of supporters. Although these differences are rarely articulated, different research questions are posed and answered as a function of the manner in which social support is assessed. Inconsistencies in the literature may be related to differences in the aspects of social support that are assessed in different studies (see Cohen & Wills, 1985).

From a measurement perspective, few researchers have provided adequate evidence of the reliability or validity of their instruments. Regarding reliability over time, an issue that arises concerns whether or not social support can be viewed as an enduring characteristic associated with the person. Research indicates that many stressful life events involve the loss of a support figure (Thoits, 1983). Until we know more about the relative stability of social support over time, it is crucial that we strive for measures that possess both test-retest reliability and sensitivity to actual changes in available support.

The Provisions of Social Relationships and Adaptation to Stress

Another set of complex issues arises in regard to the factor structure of social support measures. As noted above, social support is currently viewed as a multi-dimensional construct. Measures with separate factors reflecting each dimension of support are therefore needed. Because of their personal attributes and/or environment, individuals who have access to one component of support often have access to several other kinds of support. Thus, although support components may differ in function, they may covary as a function of individuals, thereby obscuring their separateness in factor analyses. It is important not only to test the factor structure of multidimensional social support measures, but also to test for differential patterns of association with outcome measures. Otherwise, components of social support that are frequently available to the same population but which differ with respect to function and health implications may be mistakenly collapsed into a single category.

Finally, although some researchers have provided evidence of convergent and construct validity of their measures, few have addressed the issue of discriminant validity. It is crucial to assure that the assessment of social support is not confounded with other factors such as social desirability, depression, or neuroticism. Otherwise, the importance of supportive relationships per se in physical and mental health may be questioned.

Interest in social support arose in the context of research on the effect of life stress on health (Holmes & Rahe, 1967). It was proposed that individuals with high levels of social support would suffer fewer negative health consequences following stressful events than would those with low levels of support. A "buffering" role of support was thus hypothesized (Cassel, 1976; Cobb, 1976). To test this model required methods for assessing individuals' current levels of life stress. The method that has been used most often, checklists of stressful life events, has limited our understanding of the mechanisms through which social support maintains or enhances health. Different kinds of stressful events pose different challenges and discomforts to the person. As a result, different interpersonal helping behaviors are needed depending on the specific stress experienced (see discussion by Cohen & Wills, 1985). For example, following bereavement, emotional sustenance might be most important, whereas following an earthquake or a tornado, tangible assistance may be of most use. When life event checklists are used, only total number or severity of events are coded. Thus, it is impossible to test the contributions to health of those components of support that meet the needs posed by specific events. Instead, the association of social support with health is tested in the context of an amalgam of stressors, thereby obscuring both strong associations between well-matched stressors and supports, and zero or negative associations between poorly matched stressors and supports.

In this chapter, an ongoing program of research on the effects of social support and stress on psychological and physical health will be described. Mindful of the pitfalls described above, we have worked from a multidimensional model of the functions of interpersonal relationships, and devoted considerable effort to the development of a reliable and valid measure of support. A central goal has been to understand the processes through which interpersonal relationships enhance or sustain well-being in the context of stress. We have employed several different strategies to achieve this goal.

One strategy has been to study groups of individuals, all of whom have experienced the same stressful event, and to examine which components of support appear to show the greatest health-protective function for each group. Given our understanding of the strains posed by each stressor, it is then possible to make inferences about the cognitive and behavioral coping efforts that are stimulated by each component of support. The three stressors that we have studied in this fashion are the transition to parenthood (Cutrona, 1984), public school teaching (Russell, Altmaier, & Van Velzen 1987), and nursing (Constable & Russell, 1986).

A second strategy has been to study groups of individuals who share particular demographic characteristics that are associated with identifiable needs (e.g., the elderly) but who have experienced heterogeneous types and numbers of events (Cutrona, Russell, & Rose, 1986). Although combining across diverse events, we gain information on the most important functions of support given identifiable subject characteristics. Our third strategy has been to examine the actual behaviors that communicate support from one individual to another (Cutrona, 1986). Individuals were asked to keep detailed records of stressful life events, depressive mood, and their daily social interactions. This allowed us to determine which kinds of interpersonal transactions enabled individuals to avoid depressive reactions to stressful events in their lives.

Our final strategy has been to test hypotheses directly about specific mediators in the link between social support and health. Borrowing from the social learning literature, Bandura (1977, 1982) has proposed that cognitions concerning one's ability to complete a task are important determinants of actual task completion.

According to Bandura (1982), individuals who have high estimations of their own efficacy attempt more difficult tasks, persist longer at problem solution, and are less self-blaming for failure. This link between cognition

and behavior seems particularly relevant to the context of coping with stress. If the knowledge that one is supported by others increases self-efficacy, then effective coping may be one important consequence of social support. As will be described in a later section, this model was tested in the context of the stress of caring for a temperamentally difficult infant (Cutrona & Troutman, 1986). In addition, a series of experimental studies is planned to determine whether experimental manipulations of immediate social support affect self-efficacy cognitions and quality of performance.

This chapter will describe the conceptual framework that has guided our research, followed by a section on the development of our social support measure, the Social Provisions Scale (Russell & Cutrona, 1984, 1987). The remainder of the chapter will be devoted to a summary of our research findings concerning the mechanisms through which social support affects physical and mental health. As described above, the studies can be grouped on the basis of design strategy. In the first studies, social support-health relations were studied for groups of individuals, all of whom had experienced the same or similar stressful events. In the second group of studies, subject characteristics were held constant, but stress levels and types varied widely. The third approach was to pinpoint interpersonal behaviors that effectively buffer individuals from the effects of stress. Our final approach, which evolved based on the results of our previous research, was to test a model in which self-efficacy cognitions mediate the association between social support and effective coping with stress.

CONCEPTUAL FRAMEWORK

It has been our goal to study the relation between social support and health across a variety of contexts, including both high and low levels of stress. Thus, we selected a theoretical model that encompassed a broad range of interpersonal functions, some of which are specifically relevant to the context of stressful life events, whereas others are more broadly relevant to sustaining life satisfaction, irrespective of stress level. Robert Weiss's (1974) model of the social provisions was chosen because of its breadth, despite the fact that it was originally conceived in the context of loneliness rather than social support research. Weiss's model incorporates the major elements of most current conceptualizations of social support (e.g., Caplan, 1974; Cobb, 1976, 1979; Cohen & Wills, 1985; Hirsch, 1980; House, 1981; Kahn, 1979; Schaefer, Coyne, & Lazarus, 1981). In addition, as discussed below, one unique component of interpersonal relationships is included in Weiss's model.

Weiss (1974) describes six different social functions or "provisions" that may be obtained from relationships with others. He contends that all six provisions are needed for individuals to feel adequately supported and to avoid loneliness, although different provisions may be most crucial in certain circumstances or at different stages of the life cycle. Each of the provisions is most often obtained from a particular kind of relationship, but multiple provisions may be obtained from the same person. Weiss's provisions may be divided conceptually into two broad categories: assistance-related and non-assistance-related. In the first category fall the functions most directly relevant to problem-solving in the context of stress: *guidance* (advice or information) and *reliable alliance* (the assurance that others can be counted upon for tangible assistance). According to Weiss, guidance is most often obtained from teachers, mentors, or parent figures, whereas reliable alliance is most often provided by family members.

The non-assistance-related provisions do not contribute directly to problem solving, and would seem to have beneficial effects under conditions of both high and low stress. Their effects are probably mediated by cognitive processes (e.g., enhancement of self-efficacy, effects on causal attribution processes). *Reassurance of worth* (recognition of one's competence, skills, and value by others) is one such provision. As described above, Bandura (1977, 1982) has provided considerable evidence that self-efficacy beliefs are predictive of actual coping behavior. Thus, the individual whose self-efficacy is bolstered through the input of supportive others would be expected to cope more effectively and suffer fewer deleterious effects of stress than one whose support system does not provide such bolstering. In the absence of major stress, the individual with abundant reassurance of worth would also be expected to function more effectively as a result of enhanced self-efficacy and self-esteem.

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Table 1. Comparison of Component Models of Social Support

Weiss (1974)	Cobb (1979)	Kahn (1979)	Schaefer et al. (1981)	Cohen et al. (1985)
Attachment	Emotional Support	Affect	Emotional Support	
Social Integration	Network Support			Belonging Support
Reassurance of Worth	Esteem Support	Affirmation		Self-esteem Support
Reliable Alliance	Material Support	Aid	Tangible Aid	Tangible Support
Guidance	Instrumental Support		Informational Support	Appraisal Support
Opportunity for Nurturance	Active Support ^a			

^a Cobb (1979) defines active support as reflecting the receipt of care or "mothering" by the target person, whereas Weiss (1974) views opportunity for nurturance as reflecting the target person providing care to others.

A second provision with implications for self-esteem is unique to Weiss's theoretical model. According to Weiss (1974), an important aspect of interpersonal relationships is feeling needed by others. Thus, he includes *opportunity for nurturance* (the sense that others rely upon one for their well-being) in his conceptual scheme. According to Weiss, the most frequent sources of opportunity for nurturance are one's offspring, although the spouse is another frequent source. Strictly speaking, this cannot be considered social support, in that the individual is the provider rather than the recipient of assistance. However, since our research has focused broadly on the effects of interpersonal relationships on health and how giving and receiving help may enhance health through some of the same cognitive mechanisms, we have retained this provision in our conceptual scheme.

The last two provisions concern the presence of affectional ties: *attachment* (emotional closeness from which one derives a sense of security) and *social integration* (a sense of belonging to a group that shares similar interests, concerns, and recreational activities). According to Weiss, attachment is most often provided by the spouse, but may also be derived from close friendship or family relationships. Social integration is acquired most often from friends. Such ties may provide comfort, security, pleasure, and a sense of identity. To the extent that such positive affects have an impact on health, attachment and social integration may promote well-being. However, as argued by Cohen and Wills (1985), these components of social support should not have any differential impact under conditions of high versus low stress, unless the stress involves a specific loss or threat to such affectional ties. Otherwise, their effects should be independent of stress level.

As noted earlier, Weiss's (1974) relational provisions encompass all of the components of social support proposed by theorists in this area, with the addition of opportunity for nurturance. The six social provisions are listed in Table 1, along with the dimensions of support that have been described by other authors in the literature. As can be seen, there are clear parallels in the dimensions of support that are described in these models. Weiss's social provisions appear to capture all of the different dimensions of support that have been identified in these models. Empirical support for drawing several of the parallels shown in Table 1 has been provided by Rose (1986). Extensive lists of behaviors that were found to be helpful in coping with a recent stress were elicited from a sample of elderly men and women. College students subsequently classified these helping behaviors into categories based on Weiss's (1974), Cobb's (1979), and Kahn's (1979) models of support. The conceptual overlap between these models shown in Table 1 was supported. For example, a helping behavior that reflected attachment in Weiss's model was also classified as representing emotional support as defined by Cobb and affect as defined by Kahn. We therefore conclude that these authors have converged on a similar set of social support dimensions, which are reflected in Weiss's model of the social provisions.

MEASUREMENT OF THE SOCIAL PROVISIONS

In 1978 our research group at UCLA developed the original version of the Social Provisions Scale. The measure consisted of 12 statements, with one positively worded and one negatively worded statement assessing each social provision. For example, the two statements assessing the attachment provision were, "I have close relationships (that provide me with a sense of emotional security and well-being)," and "I lack a feeling of intimacy with another person." Respondents were asked to indicate the extent to which each statement described their current social relationships.

Research using this instrument supported the validity of the measure in assessing important properties of interpersonal relationships. Cutrona (1982) found that scores on the six social provisions were predictive of

loneliness among new students at UCLA. The social integration ($\beta = -.438$), reassurance of worth ($\beta = -.289$), and guidance ($\beta = -.197$) provisions were all predictive of scores on the UCLA Loneliness Scale. In combination, scores on these three social provisions accounted for 66% of the variation in loneliness among these college students.

A study by Russell et al. (1984) provided support for the construct validity of the instrument. Weiss (1973, 1974) has described two distinct types of loneliness, labeled social and emotional loneliness, which he argues result from deficits in particular social provisions. Emotional loneliness occurs due to the lack of an intense and relatively enduring relationship with one other person, whereas social loneliness occurs due to the lack of relationships with a group of individuals with whom one can participate in social activities. Weiss predicts that emotional loneliness results from deficits in the attachment provision, whereas social loneliness results from deficits in the social integration provision. Consistent with Weiss's predictions, Russell et al. (1984) found that emotional loneliness was significantly predicted by scores on the attachment provision ($\beta = -.622$). However, scores on the social integration provision were only marginally related to social loneliness ($\beta = -.106$). Further analyses indicated that the results for the social integration provision may have been affected by colinearity among scores on the Social Provisions Scale, since the zero-order correlation between social integration and social loneliness was statistically significant ($r = -.27, p < .001$).

As discussed earlier, Weiss (1974) also hypothesizes that certain types of interpersonal relationships usually provide each of the social provisions. For example, attachment is typically provided by an intimate romantic/dating relationship, whereas friendships typically provide a sense of social integration. Reassurance of worth is provided by work relationships, whereas reliable alliance is usually provided by kin relationships. Relationships with mentors are often the source of guidance, whereas opportunity for nurturance is provided by relationships with children, spouse, or other people who are dependent on the individual.

Analyses were conducted based on the data collected by Russell et al. (1984) to evaluate the association between measures of the individual's interpersonal relationships and each of the social provisions. Multiple regression analyses were conducted that employed measures of how satisfied students were with their relationships with friends, romantic/dating partners, and family to predict scores on each of the six social provisions. Consistent with Weiss's predictions, attachment was significantly related to how satisfied individuals were with their romantic/dating relationships ($\beta = .547, p < .001$), whereas social integration was significantly related to how satisfied they were with their friendships ($\beta = .317, p < .001$). Reliable alliance was related to the perceived quality of both family ($\beta = .244, p < .001$) and friend ($\beta = .253, p < .001$) relationships. Finally, opportunity for nurturance was most strongly related to satisfaction with romantic/dating relationships ($\beta = .381, p < .001$) and secondarily to satisfaction with family relationships ($\beta = .139, p < .01$).

These early findings provided support for the validity of the Social Provisions Scale. One problem that was apparent with the scale concerned the assessment of individual social provisions. Since only two items were employed in assessing each provision, the reliability of these scores was low. We therefore added 12 new items to the instrument, two items (one positively worded and one negatively worded) for each of the six social provisions. The response format was also simplified to a four-point rating scale, to facilitate using the instrument with non-college populations.

The revised Social Provisions Scale appears to yield reliable assessments of each social provision, particularly given the short length of each subscale (four items, with two positively worded and two negatively worded). To evaluate the reliability of the instrument, analyses were conducted on a sample of 1792 respondents, which included 1183 students from introductory psychology courses (Russell & Cutrona, 1987), 303 public school teachers (Russell et al., 1987), and 306 nurses from a military hospital (Constable & Russell, 1986). Table 2 reports the results of these analyses, along with descriptive statistics for each social provision and a total score computed across the six provisions. As can be seen, the reliabilities of the individual social provision subscales are adequate for use of the instrument in research contexts, with coefficient alphas ranging from .653 to .760. Reliability of the total Social Provisions score (.915) was estimated based on the formula for the reliability of a linear combination of scores given by Nunnally (1978, p. 248).

Further analyses of these data were conducted to evaluate the extent to which there were age and sex differences in social provision scores. Statistically significant differences between the college student and adult samples were found for the social integration, reassurance of worth, and opportunity for nurturance provisions, as well as for the total social provisions score. College students reported higher levels of social integration, whereas the teachers and nurses reported higher levels of reassurance of worth, opportunity for nurturance, and total support. Although these differences between the college student and adult samples were statistically significant, it should be noted that only .4% to 6.9% of the variation in social provision scores was accounted for by these differences. Parallel analyses

were conducted comparing males and females on each of the six social provision scores as well as the total social support score. As might be expected, females reported receiving higher levels of each social provision as well as greater overall levels of support than males. Once again, although these differences between the sexes were statistically significant, it should be emphasized that the differences between men and women only accounted for .2% to 3.7% of the variation in social provision scores. Finally, none of the age by sex interaction terms were statistically significant.

In summary, these findings indicate that the Social Provisions Scale is a reliable and valid measure of the social provisions described by Weiss (1974). Reliabilities of the individual subscales assessing each of the six social provisions appear to be adequate for use of the instrument in research contexts. Construct validity of the instrument is supported by findings concerning the relationship between the social provisions and measures of loneliness and interpersonal relationships. Age and sex differences in scores on the Social Provisions Scale were found, although it appears that these differences are relatively small in magnitude.

Table 2. Descriptive Statistics and Reliabilities for the Social Provisions Scale

<i>Provision</i>	<i>M</i>	<i>s.d.</i>	<i>α</i>	<i>Average r^a</i>
Attachment	13.72	2.42	.747	.441
Social Integration	14.01	1.90	.673	.346
Reassurance of Worth		13.29	2.02	.665 .336
Reliable Alliance	14.43	1.91	.653	.324
Guidance	14.18	2.23	.760	.451
Opportunity for Nurturance	12.82	2.28	.655	.320
Total Social Provision Score	82.45	9.89	.915	.293

^aThese are the average inter-item correlations.

Other studies addressing the role of the social provisions in adaptation to stressful experiences provide further validity evidence for the instrument. Prior to discussing that research, however, two additional validity issues will be addressed that are particularly relevant to component measures of social support. These issues concern the factor structure and discriminant validity of the Social Provisions Scale.

Factor Structure of the Social Provisions Scale

In their review of social support measures, House and Kahn (1985) describe a number of component measures of social support. One problem that characterizes these measures of social support concerns the extent to which the dimensions of support are independent of one another. Very high intercorrelations among the components of support have been found for all of these instruments. In some cases, these correlations are nearly as high as the reliabilities of the individual scales, suggesting that the component measures may not be assessing distinct constructs.

In order to ensure that such instruments are assessing separate dimensions of social support, it is therefore important to evaluate their factor structure. If two or more of the support components that are being assessed are redundant with one another, then we should find that the respective items load on a single factor. However, even if we find that the different component measures do separate into distinct factors, it appears from the measures

reviewed by House and Kahn (1985) that the factors will be highly intercorrelated. This suggests the possibility of a second-order or general social support factor that underlies the different components of support. Such a factor would reflect general differences between individuals in their overall levels of social support, which translate into pervasive differences across the dimensions of support.

To evaluate the factor structure of the Social Provisions Scale, a confirmatory factor analysis was conducted on responses to the instrument (Russell & Cutrona, 1987). The sample of 1792 college students, public school teachers, and nurses that was described earlier provided data for the analyses. A covariance matrix was computed based on the responses of these subjects to the instrument, and input to the LISREL VI computer program (Jöreskog & Sörbom, 1984). An initial analysis evaluated the fit of a six-factor oblique model to these data, with a factor being hypothesized for each social provision. The fit of this model appeared to be quite good, $\chi^2 (237, N = 1792) = 1690.91$, given the large number of subjects employed in the analysis. To provide an evaluation of model fit that was independent of sample size, Δ was computed by comparing the fit of this model to a null model that hypothesized no relationships among the items from the Social Provisions Scale (see Bender & Bonett, 1980). The value of Δ was .885, which indicates that this model provides a very good fit to the data.

Table 3. Intercorrelations among the Factors Representing the Social Provisions

	<i>Attachment</i>	<i>Social Integration</i>	<i>Reassurance of Worth</i>	<i>Reliable Alliance</i>	<i>Guidance</i>	<i>Opportunity for Nurturance</i>
Attachment	1.0					
Social Integration	.801	1.0				
Reassurance of Worth	.750	.789	1.0			
Reliable Alliance	.836	.911	.771	1.0		
Guidance	.931	.890	.777	.990	1.0	
Opportunity for Nurturance	.630	.593	.627	.549	.568	1.0

All of the item loadings on the respective factors were statistically significant and sizeable in magnitude (ranging from .387 to .791), indicating that each item adequately represents the construct that it was designed to assess. Correlations among the factors are presented in Table 3. As expected, these inter-factor correlations were sizeable in magnitude, ranging from .549 to .990. It should be noted that since these are correlations among the latent variables or factors from the LISREL analysis, they are unattenuated by measurement error. Thus, we can interpret these relationships as reflecting the true association between the constructs that are being assessed by each set of measures.

The size and general pattern of the correlations shown in Table 3 suggests the presence of a second-order general social support factor that underlies responses to the Social Provisions Scale. To evaluate this possibility, a confirmatory factor analysis was conducted that hypothesized six first-order factors (representing each of the social provisions) and a single second-order factor. This model was found to provide a very good fit to the data, $\chi^2 (246, N = 1792) = 1824.92, p < .001, \Delta = .875$. Marsh and Hocevar (1985) have described a target coefficient, T , that reflects the fit of a second-order factor model relative to a first-order factor model that allows correlations among the factors. The value of T for the present model was .926, which indicates that the single second-order factor provides a good description of the relations among the first-order factors shown in Table 3.

Second-order factor loadings for the six first-order factors are presented in Table 4. As would be expected, opportunity for nurturance was found to reflect this global support factor the least, whereas guidance and reliable alliance were very strongly related to the second-order factor. Although these second-order factor loadings are large in magnitude, these results also indicate that, for most of the individual provisions, sizeable proportions of the variation in scores is not accounted for by this global social support factor.

These factor analysis results therefore suggest that the measures of individual social provisions form separate and highly correlated factors. The correlations among the social provisions appear to represent the influence of a general or global social support factor. However, the individual provisions also appear to reflect distinct aspects of support. We therefore conclude that the Social Provisions Scale assesses both specific components of social support in addition to the overall level of support available to the person.

Table 4. Second-Order Factor Loadings
for the Social Provisions

<i>Provision</i>	<i>Loading</i>
Attachment	.914
Social Integration	.909
Reassurance of Worth	.913
Reliable Alliance	.967
Guidance	.997
Opportunity for Nurturance	.621

Discriminant Validity of the Social Provisions Scale

An issue that arises in validating social support measures concerns their discriminant validity. Assessments of the social supports available to the person may be biased by social desirability (Gottlieb, 1984) or the level of psychological distress experienced by the person (Dohrewend et al., 1984). Interpretation of the effects of social support on health may also be confounded by personality or social skill factors. For example, Henderson, Byrne, and Duncan-Jones (1982) found that social support was related to both psychological distress and neuroticism in a community sample. Further analyses of their data indicated that after statistically controlling for the association between social support and neuroticism, no significant relation between social support and psychological illness was found. These results indicated that the effects they were attributing to social support in their original analyses were, in fact, due to the confounding of social support by neuroticism. It is therefore important to demonstrate that measures of social support have an impact upon health independent of the influence of other relevant personality or social skill factors.

In order to evaluate the discriminant validity of the Social Provisions Scale, an extensive set of measures was completed by a sample of 242 college students enrolled in introductory psychology at the University of Iowa (Russell & Cutrona, 1987). In addition to the Social Provisions Scale, students completed several widely used social support measures, which included the Social Support Questionnaire (Sarason et al., 1983), the Index of Socially Supportive Behaviors (Barrera, Sandier, & Ramsay, 1981), and a measure of attitudes toward use of social support (Eckenrode, 1983). A number of other relevant measures were also completed by students, which included the Marlowe & Crowne Social Desirability Inventory (Crowne & Marlowe, 1964), the Beck Depression Inventory (Beck et al., 1961), and the introversion-extraversion and neuroticism scales from the Eysenck Personality Inventory (Eysenck & Eysenck, 1975). Finally, the students indicated the number of stressful life events (they had experienced during the previous six-month period, using a stressful life events measure that is specific to college student populations.

One method for assessing the discriminant validity of the Social Provisions Scale involves evaluating convergent and divergent validity. Specifically, we would expect that scores on the Social Provisions Scale would be more highly correlated with other measures of social support (convergent validity) than they would with measures of conceptually distinct constructs (divergent validity). Table 5 presents correlations between scores on the Social Provisions Scale and each of the other measures that were administered. As can be seen, the correlations between scores on the Social Provisions Scale and the other measures of social support were generally much higher than they were with measures of the other variables.

Although these results indicate that the zero-order correlations between the Social Provisions Scale and the other support measures are greater than the comparable zero-order correlations with the remaining variables, it is still possible that these other variables may in combination account for scores on the Social Provisions Scale. For example, assume that social provision scores are a function of social desirability, depression, extraversion, and neuroticism in combination with one another. This would indicate that the Social Provisions Scale is not assessing a construct that is distinct from the combination of these factors, and would question the utility of assessing the social provisions. If, however, we found that scores on the Social Provisions Scale were related to the other social support

measures after controlling for the combined relationship with these other measures, then we could conclude that the Social Provisions Scale appears to be assessing a construct that is distinct from these other related measures.

To examine this issue, a hierarchical multiple regression analysis was conducted. The first set of variables to be entered into the regression equation were the measures of social desirability, depression, introversion-extraversion, neuroticism, and stress. These variables accounted for 14.3% of the variance in social provision scores, $F(5,226) = 7.57, p < .001$. After the influence of these factors upon total social provision scores had been statistically controlled, the four social support measures were entered into the equation as a block of variables. An additional 18.1% of the variation in social provision scores was accounted for by these support measures, $F(4,222) = 14.88, p < .001$. These results therefore indicate that scores on the Social Provisions Scale are related to the other measures of social support over and above the influence of these other relevant variables.³

Table 5. Correlations Between the Social Provisions Score and Measures of Support and Related Variables

<i>Support Measures</i>	<i>Correlation</i>
Satisfaction with Support	.352***
Number of Supportive Persons	.400***
Number of Helping Behaviors	.350***
Attitudes Toward Support	.458***
<i>Other Measures</i>	
Social Desirability	.124*
Depression	-.278***
Introversion-extraversion	.289***
Neuroticism	-.199**
Number of Stressful Events	.030

* $p < .05$.

** $p < .01$.

*** $p < .001$.

The next issue to be addressed concerned whether or not the associations that have been found between health outcomes and the Social Provisions Scale were an artifact of the relation between social provision scores and social desirability, introversion-extraversion, or neuroticism. To examine this issue, a hierarchical regression analysis was conducted. The measures of social desirability, introversion-extraversion, and neuroticism were entered first into the regression equation predicting depression. As might be expected, these three variables were found to be significant predictors of depression, $R^2 = .239, F(3,228) = 23.80, p < .001$. After statistically controlling for the influence of these variables, however, the effects of stress (beta = .152, $p < .01$), social provision scores (beta = -.153, $p < .05$), and the stress by social provisions interaction (beta = -.157, $p < .01$) remained statistically significant.

To summarize, the evidence from this study clearly supports the discriminant validity of the Social Provisions Scale. Although the measure does appear to be related to measures of social desirability, introversion-extraversion, and neuroticism, our results indicate that the measure assesses a construct that is distinct from these latter measures. Most importantly, however, the Social Provisions Scale appears to add to the explanation of psychological distress over and above the influence of these related variables.

The remainder of the chapter will describe a series of studies that have used the Social Provisions Scale to investigate relations between social support and both psychological and physical health outcomes. As stated earlier, a number of different approaches have been used to gain insight into the specific mechanisms through which social support may have its effects on health.

POPULATIONS FACING SPECIFIC STRESSFUL CIRCUMSTANCES

As discussed earlier, one difficulty in identifying the processes through which social support promotes successful coping with stress is that most investigators have studied populations that are heterogeneous with respect to the kinds of stressful events they have encountered. Different components of support are probably involved depending on the nature of the stressful event experienced. However, such differences are obscured in heterogeneous stress designs. We have studied three different Populations (new mothers, public school teachers, and military nurses), each of whom has faced different types of stressors. Each of these groups consists of individuals who are coping with chronic stresses, but the nature of the difficulties encountered differ considerably. For first-time mothers, challenges include the acquisition of new skills and knowledge, and the disruption of accustomed routines (Cutrona, 1984). Public school teachers often face unresponsive administrators, unmotivated students, and uninvolved or highly critical parents (Russell et al., 1987). Nurses must cope with sick and dying patients, and with a lack of recognition from a health care system that is oriented toward physicians (Constable & Russell, 1986). Because the strains and frustrations of each population differ, the nature of their needs for social support should also differ. By identifying the social provisions that are most strongly linked with positive outcomes for each group, it is possible to make inferences about the cognitive and behavioral coping efforts that are facilitated by supportive relationships in specific contexts.

New Mothers Study

A sample of 85 primiparous women was recruited to participate in a prospective study of the role of social support in the transition to parenthood (Cutrona, 1984). Participants were assessed at three time points: during the third trimester of pregnancy, two weeks postpartum, and eight weeks postpartum. At the pregnancy assessment, women completed the Social Provisions Scale, the Beck Depression Inventory (BDI; Beck et al., 1961), and a semi-structured diagnostic interview, the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960, 1967). A depression index was formed for each woman based on the BDI and HRSD. Both depression measures were readministered at the two-week and eight-week postpartum assessments. Although all of the women experienced the stress of pregnancy and childbearing, it was recognized that women's stress levels would vary as a function of a variety of factors, including health, infant temperament, and adequacy of financial resources. Thus, a measure of childcare-related stress (Childcare Stress Inventory; Cutrona, 1984) was administered at each postpartum assessment.

Of primary interest was the relative contribution of each of the six social provisions (assessed during pregnancy) to women's levels of depressive symptomatology two and eight weeks after delivery. To this end, a series of hierarchical multiple regression analyses was conducted. In each analysis, pregnancy depression and current childcare stress scores were entered before the social support measure, thereby testing the contribution of social support to postpartum depression after removing the variance due to initial depression and level of stress. The final term in each regression equation was the interaction between the social support and stress variables.

Results were somewhat different for the two- and eight-week postpartum assessments. Two weeks postpartum, only the interaction between guidance and stress predicted level of depression (R^2 change = .05, $F(1,81) = 7.37$, $p < .01$). This interaction indicated that the relation between guidance and depression varied depending on the level of stress experienced. However, contrary to the buffering hypothesis, higher levels of childcare-related stress were associated with a weaker association between guidance and depression. For women with exceptionally high levels of stress, guidance was not effective in preventing depression. In contrast, for women who had undergone the stress of childbirth but had relatively few additional problems, guidance was an effective deterrent to depressive symptoms. This result suggests that a stress threshold exists, which when exceeded, rendered social support relatively ineffective as an aid to coping. It should be noted that the same pattern of results was found in a second independent sample of childbearing women (Cutrona & Troutman, 1986). Regarding the mechanisms through which guidance reduced depression, it was also found that women with higher levels of guidance during pregnancy reported fewer childcare-related stresses two weeks postpartum. Thus, receiving advice appeared to facilitate behaviors that prevented the occurrence of negative events. A second interpretation is that women who had accessible sources of information about childbearing did not perceive mishaps as sufficiently serious to record on the stress inventory. For example, a woman who knew that most newborns are unpredictable in their patterns of

waking and sleeping might not have reported that she was having "trouble" establishing waking and sleeping schedules.

At eight weeks postpartum the total Social Provisions Scale score was a significant predictor of depressive symptoms. Women who reported high levels of support across provisions during pregnancy were less depressed two months after their baby's birth (R^2 change = .09, $F(1,81) = 14.27, p < .001$). The only provision that was a significant predictor of postpartum symptoms was social integration (R^2 change = .09, $F(1,81) = 14.64, p < .001$). Regarding the mechanisms through which social integration may have fostered adjustment, one aspect of social integration is having others with whom to engage in social activities. Lewinsohn (1975) has described depression as a deficit in positively reinforcing events. Women who engaged in social activities with others after the birth of their child probably received a higher rate of positive reinforcement than those who did not have available companions. Cognitive mechanisms may also have played a role in the relation between social integration and depression. A second component of social integration is having friends who share one's interests and concerns. Women who knew other mothers with whom they could compare experiences may have felt less unique in their problems and frustrations. Access to this normative information may have served to decrease the intensity of their affective reactions to childcare difficulties (Storms & McCaul, 1976).

To summarize, women who have recently given birth to their first child are faced with a range of challenges and strain. A number of new skills must be acquired, new routines must be established, and a new identity must be formed. The relational provisions of guidance and social integration emerged as the strongest deterrents to depression following childbirth. Both guidance and social integration may have contributed to skill acquisition. Direct advice from experienced parents and informal sharing of information with other young parents may speed up the learning process, which would otherwise depend on trial and error.

The appraisal process, in which young mothers evaluate the severity of child-related stresses, may also be affected by information from experienced parents and by the normative information provided by peers. Regarding the loss of routines and prior identity, social integration may ease the transition through exposure to models who have recently made this transition themselves and through contact with others who share the values and priorities associated with motherhood. Finally, the pleasure or reinforcement derived from social contacts may serve as a direct antidote to depression.

Public School Teachers

The strains faced by public school teachers are different from those of new mothers in that for most teachers the situation is not a new one. Thus, skill acquisition and identity formation are not the central challenges. Systematic information on the stresses encountered by teachers was collected as part of an investigation of social support and teacher burnout conducted by Russell et al. (1987). A mail survey of a random sample of 303 public school teachers in Iowa was conducted. On the basis of a pilot study, a list of 47 stressful events experienced by teachers at work was generated and developed into a measure of teaching-related stress. Respondents to the mail survey rated as most aversive events involving school administrators (e.g., administration does not support you in a conflict with a parent). Events involving other teachers (e.g., another teacher does not behave professionally) and parents (e.g., parent blames you for a student's dislike of school) were next most stressful. The most frequent stressors involved students (e.g., failure to complete assignments), and were rated as somewhat less severe than those involving other adults.

One consequence of such stressors is a syndrome of emotional exhaustion, alienation, and feelings of futility, commonly termed "burnout." To determine whether one or more components of social support may serve a protective function against burnout, the teachers were assessed with respect to burnout Symptoms (Maslach Burnout Inventory; Maslach & Jackson, 1981), job-related stress (using the inventory described above), and social support. In addition to the Social Provision Scale, teachers completed a measure developed by House and Wells (1978) to assess *sources* of support in the context of job-related stress.

After statistically controlling for demographic characteristics (e.g., age, years of teaching experience) and number of stressful events, reassurance of worth was the social provision that was most strongly related to burnout. All three subscales (emotional exhaustion, depersonalization, and personal accomplishment) of the Maslach Burnout Inventory were significantly related to this provision. Teachers who indicated that other people respected their skills and abilities showed significantly less emotional exhaustion, depersonalization, and a greater sense of personal accomplishment than did teachers who lacked this feeling of respect. For the depersonalization scale, a significant interaction was also found between reassurance of worth and stress level. The nature of the interaction was

consistent with the buffering hypothesis, in that high levels of reassurance of worth lessened the effect of stress on depersonalization.

With regard to sources of support, social support received from supervisors was found to be the only significant predictor of burnout. Teachers with supportive supervisors reported less emotional exhaustion, less depersonalization, and a greater sense of personal accomplishment. Having a supportive supervisor also buffered the impact of stress on depersonalization.

To summarize, public school teachers frequently must cope with events and interactions that signal a devaluation of their efforts. Unsympathetic administrators, unappreciative parents, and unmotivated students all contribute to this sense of devaluation. Furthermore, the low salaries received by school teachers may be interpreted its evidence that our society does not value their profession. It is therefore not surprising that reassurance of worth was the single provision that served as a deterrent against burnout. Reassurance of worth, especially from supervisors, apparently allows teachers to keep sight of the importance of their contribution. Most individuals choose the teaching profession because they believe in the importance of education. Reinforcement of this belief and praise for the quality of their work may allow them to maintain a value system that is compatible with the energy they devote to their profession. Cognitions concerning the value of their work may also sustain them through daily encounters that would otherwise diminish their motivation and commitment. Thus, in this context, social support appears to have its greatest impact on the appraisal process in which individuals weigh the relative costs versus benefits of tolerating the stress that they face. If the stress-producing situation is rendered meaningful, then it leads to fewer deleterious effects (Wortman & Brehm, 1976).

Nursing Burnout Study

The work environment of hospital-based nurses can be extremely stressful. Nurses are faced with human suffering and both physical and emotional demands from patients. Research has indicated that nurses are particularly vulnerable to burnout (Genry, Foster, & Froehling, 1972). A study of burnout among hospital nurses, similar in design to the teacher burnout study, was conducted by Constable and Russell (1986). A survey of 306 nurses was conducted at an army medical center. As in the teacher study, respondents completed the Maslach Burnout Inventory, the Social Provisions Scale, and the questionnaire developed by House and Wells (1978) to assess sources of support. Work stress was assessed with seven subscales (autonomy, task orientation, clarity, innovation, physical comfort, work pressure, and control) from the Work Environment Scale (WES; Moos, 1981). Based on a factor analysis of scores on the Subscales (Constable & Russell, 1986), three dimensions were identified. The first dimension, job enhancement, reflected positive aspects of the work environment (autonomy, task orientation, clarity, innovation, and physical comfort). Work pressure (e.g., urgency about getting things done) and control (e.g., strict emphasis on policies and regulations) were each found to reflect separate dimensions.

Results showed that after controlling for demographic (age, gender, number of children, education) and work-related variables (work area, contact with oncology patients, hours, supervisory responsibility), both job enhancement and work pressure were significantly related to burnout. Individuals who perceived their work assignments as high in job enhancement experienced less emotional exhaustion and depersonalization and a greater sense of personal achievement. Those who rated their positions as entailing a high degree of pressure experienced more emotional exhaustion. In predicting total burnout scores, these two variables together accounted for 20.3% of the explained variance.

Concerning social support, the six subscales of the Social Provisions Scale accounted for 6.6% of the variance in total burnout scores ($p < .001$). Of the three burnout subscales, only personal achievement was significantly predicted by the social provisions (R^2 change = .105, $p < .001$). Concerning individual provisions, as with the public school teachers, reassurance of worth made the only significant unique contribution (beta = .193, $p < .05$) in accounting for feelings of personal accomplishment.

Concerning sources of work-related support, results were once again consistent with those from the teacher study. Only support from supervisors significantly predicted any component of nurse burnout (for emotional exhaustion, beta = -.31, $p < .001$).

Summary

Both teaching and nursing are underpaid, undervalued professions in our society. Most individuals who select these careers are motivated by the desire to make a meaningful contribution to others. Daily contact with people who do not reinforce the value of their contribution, but who ask for ever increasing efforts may quickly erode a

sense of value. Thus, for both teachers and nurses, reassurance of worth appears to be a crucial element in preventing burnout. Supervisors, who are the most effective sources of work-related support, presumably share the individual's vision of the value of the profession and, from a position of high status, can reinforce both the quality and importance of the individual's contribution. This reinforcement is clearly crucial in maintaining morale. As stated previously, it is likely that reassurance of worth from supervisors facilitates cognitions that enable the individual to cope with interactions that would otherwise erode his or her motivation and commitment (e.g., "I am helping this patient regain his health, even though his pain prevents him from appreciating what I am doing").

For new mothers, skill acquisition and role adjustment are most salient, rather than role devaluation. Thus, guidance and social integration are most crucial. However, after the first few months of parenthood, the new mother receives much less dotting attention from others, and the value of her contribution may also become a major issue. It is therefore important to consider not only the nature but also the phase of the stressful transaction in assessing the most salient social needs.

A very limited sampling of stressful situations has been achieved in our work to date. Only chronic family and work-related situations have been studied. These results may or may not have relevance for more acute stressful situations that involve loss or threat of loss (e.g., bereavement or illness). Clearly, much more research is needed on homogeneous samples before we can develop a comprehensive picture of the different coping mechanisms that are activated or facilitated by social support.

SOCIAL SUPPORT AND STRESS AMONG THE ELDERLY

According to Weiss (1974), needs for specific relational provisions may differ as a function of several factors. One such factor, discussed above, is the nature of the stressors that the individual has recently experienced. A second factor discussed by Weiss is the individual's stage in the life cycle. One aspect of differing social needs is the association between age and certain stressful events that occur with heightened probability during particular times of life (e.g., bereavement during old age). A second aspect may be psychological. Although few developmental theories span the entire life course, a number of theorists (e.g., Freud, Erickson, Sullivan) have hypothesized different social needs at different ages. Thus, it seems important to consider not only the specific circumstances of the individual, but also his or her phase in the life cycle.

Our research group has undertaken a series of studies on the social support needs of the elderly (Cutrona, 1986; Cutrona, Russell, & Rose, 1986; Rose, 1986). The results of one such study will be reported here. The study to be described (Cutrona, Russell, & Rose, 1986) served as a pilot for a much larger project that is currently in progress. In the pilot study, 50 men and women aged 60 and older were recruited from a senior citizens center. As part of a more extensive interview protocol, measures of stressful life events, social support, and physical and mental health were included. These measures were administered at the initial interview and at a six-month follow-up interview. The Geriatric Social Readjustment Rating Scale (Amster & Krauss, 1974) was used to assess the occurrence of stressful life events over the previous six months. Perceived social support was assessed with the Social Provisions Scale. To assess physical health, four measures (a symptom checklist, a functional abilities measure, subjective self-ratings of health, and the number of illnesses that the individual had experienced in the previous six months) were administered. Three measures of psychological well-being (life satisfaction, the UCLA Loneliness Scale, and the Zung Self-Rating Depression Scale) were included in the study. A factor analysis of scores on the physical and psychological health measures revealed two correlated factors ($r = .45$), one reflecting physical and the other reflecting psychological health. Scores that loaded at .50 or greater were standardized and summed to compute overall indices of physical and psychological health. These indices were used in all analyses.

To examine the effects of stress and social support on physical and mental health, longitudinal regression analyses were conducted to predict physical and mental health from the stress and social support variables that were assessed in the initial interviews. In all analyses, initial level of health was statistically controlled. Results showed that number of negative life events reported in the first interview did predict physical health status six months later, as did total scores on the Social Provisions Scale. Concerning individual provisions, both reassurance of worth and opportunity for nurturance were significant predictors of physical health. For psychological health, neither the stress or social support variables were found to be predictive of mental health six months later. However, a statistically significant interaction was found between stress and total social provision scores in predicting subsequent mental health. Analyses that examined the impact of the individual social provisions indicated that the provisions of reliable alliance and guidance interacted with stress in predicting mental health six months later. Results were

consistent with the buffering hypothesis, in that social support was found to be positively related to mental health only under conditions of high life stress.

Thus, for the elderly, four different social provisions were related to health outcomes. Reassurance of worth and nurturance showed direct associations with physical health. Reassurance of worth reflects a sense of respect from one's peers, whereas nurturance represents the belief that others need or rely on one. Aging is often accompanied by a sense of role loss, as children leave the home and employment terminates through retirement. Thus, it makes sense that older persons would benefit from relationships in their lives that give them a sense of purpose and worth. Perhaps individuals whose self-worth is bolstered by others take better care of themselves, and therefore are able to prevent certain illnesses. Alternatively, it may be that maintaining a high level of self-esteem has beneficial effects on the immune system (e.g., Kiecolt-Glaser et al., 1984).

Social support was related to mental health only among elderly persons who experienced high levels of life stress. In particular, reliable alliance and guidance were valuable in preventing a deterioration of psychological well-being. Reliable alliance and guidance are both assistance-related provisions, concerning the availability of tangible aid and advice. For many, aging entails diminished resources, which may lead to particular strains in times of stress. Thus, the availability of additional interpersonal resources may greatly reduce the burden of negative life events. Guidance may be important for several reasons. Some elderly persons must face problems alone for the first time after the death of their spouse. Others may feel that the world has changed sufficiently since their younger adulthood that they lack adequate information to make independent decisions.

These results suggest a range of interpersonal needs among the elderly, some of which are most salient in times of stress, and others which are unrelated to stress level. It should be noted that the elderly are unique among the populations we have studied in their apparent need of opportunities for nurturance (i.e., to *provide* social support to others). We have recently completed data collection for a longitudinal study of 300 elderly men and women that will allow us to test the replicability of these pilot results.

INTERPERSONAL BEHAVIORS THAT COMMUNICATE SUPPORT

A somewhat different strategy that we have employed to gain insight into the process of social support is to study the actual interpersonal behaviors that communicate support from one person to another. Understanding the means through which support is effectively communicated may further our understanding of the mechanisms through which support enhances health outcomes in the context of stress.

Although it would be preferable to observe individuals in their daily social encounters, a self-monitoring or diary study was conducted in which individuals were asked to keep daily records of their social interactions, stressful events, and depressive mood (Cutrona, 1986). Participants in the diary study were 43 undergraduate students enrolled in an introductory psychology class. Participants were first asked to complete the Social Provisions Scale. Next, they were given a binder that contained multiple copies of three different forms and asked to complete the forms daily for a period of 14 days. The forms included a daily event record, on which individuals were asked to record any stressful events that happened during the day, a brief measure of depressive mood (Dépression Adjective Checklist [DACL]; Lubin, 1981), and a social contact record that was modeled after the Rochester Interaction Record (Reis, Senchak, & Solomon, 1985; Wheeler, Reis, & Nezlek, 1983). For every social interaction that lasted 10 minutes or more, individuals completed a series of checklists concerning the content of the interaction on the social contact record. The checklists included both help-oriented and nonhelp-oriented exchanges. The help-oriented exchanges listed on the social contact record were selected to reflect four of Weiss's six provisions: attachment (e.g., expressed caring or concern); reassurance of worth (e.g., complimented you or told you that you did something well); guidance (e.g., gave you advice on something); and reliable alliance (e.g., did something to help you solve a problem).

Several interesting findings emerged from this study. First, overall scores on the Social Provisions Scale significantly predicted the number of help-oriented behaviors received by subjects on days when they experienced at least one stress. By contrast, nonhelp-oriented behaviors (e.g., purely recreational activities) were not predicted by the Social Provisions Scale. Second, the nature of the person's social interactions differed for all subjects depending on whether or not they had recently experienced a stressful event. More help-oriented behaviors were reported on days following the occurrence of a negative event. Although these findings are as expected, it is reassuring to know that actual behaviors can be identified that discriminate between individuals who score high versus low on measures of perceived social support, and that a distinctive pattern of social interactions accompanies the occurrence of stressful life events. Both of these assumptions are implicit in the buffering hypothesis of social support but, to our knowledge, have never been explicitly tested.

Analyses were also conducted to determine which of the specific helping behaviors predicted depression following stressful events. The only behavior that was significantly associated with lower levels of depression was the helping behavior associated with reassurance of worth: "complimented you or told you that you did something well." Thus, once again the central importance of self-esteem maintenance was suggested.

TEST OF A MEDIATIONAL MODEL

A theme that has recurred in our studies of social support processes is the importance of interpersonal transactions that enhance self-esteem. As described above, reassurance of worth was associated with positive outcomes among public school teachers (Russell et al., 1987), nurses (Constable & Russell, 1986), the elderly (Cutrona et al., 1986), and college undergraduates (Russell & Cutrona, 1987). Furthermore, even when other provisions emerge as predictors of health and well-being, their mode of effect often seems to involve self-evaluation processes. Cobb (1979) hypothesizes that emotional support (comparable to Weiss's attachment) and network support (comparable to Weiss's social integration) result in self-confidence and a sense of control. In turn, these experiences facilitate effective coping behavior. The parallels between Cobb's (1979) ideas and those of Bandura (1977, 1982) are striking. Bandura's concept of self-efficacy centers around the link between the belief that one will cope effectively and actual coping behavior. According to Bandura (1977, 1982), judgments of self-efficacy affect willingness to take on difficult tasks, degree of effort expended, and duration of persistence in the face of adversity. Thus, if social support can enhance peoples' belief in their abilities, it may facilitate effective coping behavior through the mediation of self-efficacy.

This mediational model was tested in a second study of the transition to parenthood (Cutrona & Troutman, 1986). Participants were 55 women who were recruited from a university obstetrics clinic, lamaze classes, and prenatal exercise classes. Assessments were conducted during the second or third trimester of pregnancy (time 1) and again when the infants were three months old (time 2). At the pregnancy assessment, women completed the Social Provisions Scale and a short version of the Beck Depression Inventory (Beck et al., 1961). At time 2, they completed the entire Beck Depression Inventory and a measure of self-efficacy in the parenting role (Parenting Sense of Competence Scale; Gibaud-Wallston, 1977). In addition, the temperamental difficulty of the infant was assessed using a questionnaire, a crying duration diary completed by the mother, and a one-hour observation procedure.

Social support was examined as a protective resource against the stress of daily responsibility for infants of varying degrees of temperamental difficulty. It was hypothesized that women with more temperamentally difficult infants (i.e., those characterized by frequent intense crying, negative mood, unpredictability, and low adaptability) would feel less competent in the parenting role and experience more depressive symptoms, but that high levels of social support would counteract this process through bolstering women's belief in their self-efficacy as parents. We also expected prepartum levels of depression to predict depression following birth of the child.

Using structural equation analysis (LISREL VI; Jöreskog & Sörbom, 1985), the model shown in Figure 1 was tested. All of the hypothesized paths in the model were statistically significant, with 22.7% of the variance in parenting self-efficacy and 45.5% of the variance in postpartum depression accounted for. In addition, the overall fit to the data of the model was very good ($\chi^2 [3, N = 51] = 6.18, p = .103, \Delta = .904$). Because only direct effects of one variable on another are tested using this technique, a regression analysis was conducted to test for possible interactions between infant temperament and social support in the prediction of self-efficacy and depression. In each regression, time 1 depression was entered first, followed by temperamental difficulty, social support, and, to test for interactions, the product of temperamental difficulty and social support. The interaction term (did not attain significance in either analysis, indicating that for both temperamentally difficult and easy babies, mothers with high levels of social support experienced higher levels of parenting self-efficacy and lower levels of depression. Furthermore, when self-efficacy was partialled out of the correlation between social support and depression, the association was no longer significant, indicating that self-efficacy did indeed serve to mediate between social support and postpartum depression.

Several follow-up studies concerning the mediational role of self-efficacy in the relation between social support and health are currently in progress. A longitudinal study of pregnant adolescents is being conducted that will examine social support as a predictor of both parenting self-efficacy and competent parenting behavior. In addition to field research, a series of laboratory studies are in progress to test whether experimental manipulations of social support can be devised that will allow specific tests of hypothesized causal links. Clearly, actual social support cannot be manipulated, but the immediate saliency or availability of support can perhaps be altered. In this context,

we plan to test the effects of social support on self-efficacy, task performance, persistence, and emotional arousal in the context of stressful laboratory tasks. If such effects can be documented, considerable strength will be added to the argument that social support enhances health through its facilitation of self-efficacy and effective coping behavior in times of stress.

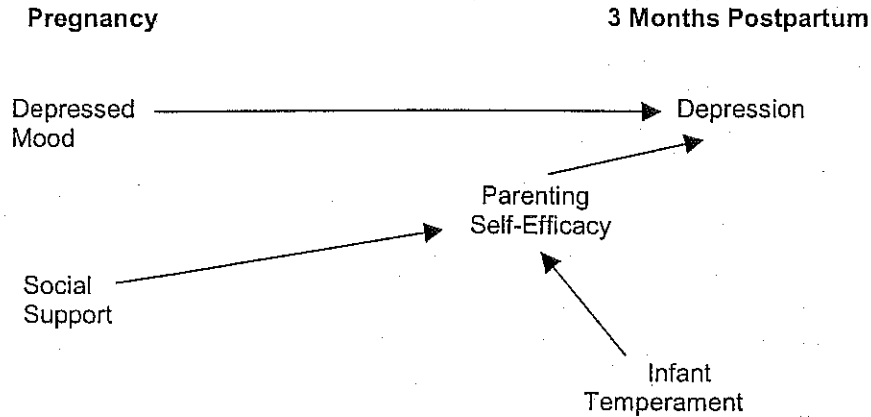


Figure 1. Mediation model of social support.

CONCLUSIONS

In this chapter, a program of research to investigate how the provisions of social relationships described by Weiss (1974) aid in adapting to stress has been described. As part of this research, the reliability and validity of a component measure of social support (the Social Provisions Scale) and the mechanisms through which social support affects health have been examined. The results of these studies converge on the following conclusions.

First, it is possible to assess perceived social support in a manner that is not unduly biased by social desirability or psychological distress. Other relevant personality variables also do not appear to account for the impact of social support on health. These findings support the discriminant validity of the Social Provisions Scale and indicate that social support makes an important contribution to the explanation of health and illness beyond that of other related variables.

Second, the particular components of social support that impact on health and illness vary depending upon the types of stressors being confronted by the person. For individuals facing life events that entail the acquisition of new skills and roles (e.g., the transition to parenthood), the provisions of guidance and reliable alliance appear to play a particularly important role in adjustment. For individuals who must expend high levels of effort to attain a valued goal in the absence of adequate recognition or reward, reassurance of worth appears to aid adjustment. For individuals facing the loss of valued roles (e.g., the elderly), opportunity for nurturance appears to be important in maintaining self-esteem and health.

Third, specific patterns of interpersonal interactions appear to accompany the occurrence of stressful events. As predicted by the buffering model of social support, individuals who report higher levels of social support more frequently receive supportive behaviors from others in the context of stressful experiences. The specific type of assistance that was identified as most helpful in preventing depression following stressful experiences was receiving positive feedback from others, which serves to provide the person experiencing the stressor with reassurance of worth.

Fourth, considerable evidence converges to suggest that several components of social support enhance health through their impact on self-efficacy beliefs. Self-efficacy beliefs have been linked to effective coping behavior and less negative affect during times of stress. Thus, problem situations may be more competently resolved and may provoke less anxiety and depression when they occur in the context of interpersonal relationships that enhance positive self-evaluation on the part of the person.

Our results suggest that, indeed, "friends can be good medicine." We have found links between social support and good psychological and physical health among diverse groups of people, facing a variety of taxing situations. Our goal has been to refine techniques for measuring health-promoting aspects of relationships, and to use these techniques to "diagnose" the specific interpersonal needs of individuals who face different life situations. Continued progress in this area requires that we systemically investigate both the processes through which stress leads to the disintegration of health, and the processes through which such disintegration can be prevented or reversed. We must understand the dimensions of stress as well as the dimensions of social support and individual coping responses. Discovering connections and synergistic relations among these dimensions may lead to considerable progress in the enhancement of health.

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NOTES

1. Anne Peplau and Mary Lund also participated in the original development of the Social Provisions Scale.
2. A copy of the Social Provisions Scale can be obtained from the authors.
3. An additional analysis also addressed the reverse question: Would these measures of other relevant variables be related to scores on the Social Provisions Scale after controlling for the influence of the other social support measures? The answer is no. After controlling for the relation between the other support measures and social provision scores, entering the social desirability, introversion-extraversion, and neuroticism measures into the multiple regression equation did not significantly increase the explained variance in social provision scores.

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Social Provisions Scale

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Instructions: In answering the following questions, think about your current relationships with friends, family members, co-workers, community members, and so on. Please indicate to what extent each statement describes your current relationships with other people. Use the following scale to indicate your opinion.

STRONGLY DISAGREE DISAGREE AGREE STRONGLY AGREE
1 2 3 4

So, for example, if you feel a statement is very true of your current relationships, you would respond with a 4 (strongly agree). If you feel a statement clearly does not describe your relationships, you would respond with a 1 (strongly disagree).

- | | <u>Rating</u> |
|---|---------------|
| 1. There are people I can depend on to help me if I really need it. | _____ |
| 2. I feel that I do not have close personal relationships with other people. | _____ |
| 3. There is no one I can turn to for guidance in times of stress. | _____ |
| 4. There are people who depend on me for help. | _____ |
| 5. There are people who enjoy the same social activities I do. | _____ |
| 6. Other people do not view me as competent. | _____ |
| 7. I feel personally responsible for the well-being of another person. | _____ |
| 8. I feel part of a group of people who share my attitudes and beliefs. | _____ |
| 9. I do not think other people respect my skills and abilities. | _____ |
| 10. If something went wrong, no one would come to my assistance. | _____ |
| 11. I have close relationships that provide me with a sense of emotional security and well-being. | _____ |
| 12. There is someone I could talk to about important decisions in my life. | _____ |
| 13. I have relationships where my competence and skill are recognized. | _____ |
| 14. There is no one who shares my interests and concerns. | _____ |

Rating

- | | | |
|-----|---|-------|
| 15. | There is no one who really relies on me for their well-being. | _____ |
| 16. | There is a trustworthy person I could turn to for advice if I were having problems. | _____ |
| 17. | I feel a strong emotional bond with at least one other person. | _____ |
| 18. | There is no one I can depend on for aid if I really need it. | _____ |
| 19. | There is no one I feel comfortable talking about problems with. | _____ |
| 20. | There are people who admire my talents and abilities. | _____ |
| 21. | I lack a feeling of intimacy with another person. | _____ |
| 22. | There is no one who likes to do the things I do. | _____ |
| 23. | There are people who I can count on in an emergency. | _____ |
| 24. | No one needs me to care for them. | _____ |

Scoring:

A score for each social provision is derived such that a high score indicates that the individual is receiving that provision. Items that are asterisked should be reversed before scoring (i.e., 4=1, 3=2, 2=3, 1=4).

1. Guidance: 3*, 12, 16, 19*
2. Reassurance of Worth: 6*, 9*, 13, 20
3. Social Integration: 5, 8, 14*, 22*
4. Attachment: 2*, 11, 17, 21 *
5. Nurturance: 4, 7, 15*, 24*
6. Reliable Alliance: 1, 10*, 18*, 23

Procedure

As part of the study, each participant received a consent form and a questionnaire. The first section of the questionnaire solicited background information. This included age, marital status, information about diagnosis and treatment, education, household income level, whether the subject was currently working outside the home, work history, and any other health problems. The introductory section was followed by the measures described below.

Measures

Social support The Social Provisions Scale (Cutrona and Russell, 1987) was used to measure perceived social support. This scale assesses the six relational provisions identified by Weiss (1974). These are: guidance (advice or information), reliable alliance (the assurance that others can be counted on for assistance), reassurance of worth (recognition of one's value by others), opportunity for nurturance (sense that one is needed by others), attachment (emotional closeness providing a sense of security), and social integration (the sense of belonging to a group similar to oneself). Respondents rated their level of agreement that their social relationships currently supplied each of the six provisions. Each provision was assessed by four items; two items describe the presence, while two describe the absence of the provision. Responses were scored on a four-point scale, ranging from (1) strongly disagree to (4) strongly agree. Negative items were reverse-scored and summed with the positive items to form a score for each social provision. A total social support score was computed by adding all six of the individual provision scores.

The internal consistency for the total score ranges from 0.85 to 0.92 across varying populations. Alpha coefficients for the individual subscales range from 0.64 to 0.76. A six-factor structure that corresponds to the six social provision has been confirmed by factor analysis. The validity of the Social Provisions Scale has been supported by several studies (Cutrona *et al.*, 1986; Russell and Cutrona, 1991).

Coping strategies The revised Ways of Coping Scales (Folkman *et al.*, 1986) measured eight coping strategies. This measure has 66-items with a 4-point Likert-format scale. In the present study, the participants were asked to indicate the extent to which they have used each strategy in coping with breast cancer. Responses were scored on a four-point scale ranging from (0) not used to (3) used a great deal. The coping strategy scales are confrontive coping, seeking social support, planful problem solving, positive reappraisal, distancing, self-controlling, escape-avoidance and accepting responsibility. The coping strategy scales vary in numbers of items. Confrontive coping, seeking social support, and planful problem-solving each contain six items, and positive reappraisal contains seven items. Accepting responsibility contains four items, distancing contains six items, self-controlling contains seven items, and escape-avoidance contains eight items. In a factor analytic study (Folkman *et al.*, 1986), the internal consistency ranged from 0.66 to 0.79 for the eight factors. Evidence for good criterion and construct validity of the scale was reported with a community sample.

For the present study, the individual coping scales were assigned to either an Approach Coping Strategies composite or an Avoidance Coping Strategies composite. The scales assigned to the Approach Coping Strategies composite were: positive reappraisal, confrontive coping, planful problem-solving, and seeking social support.