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REVIEW

Assessment of Methods for Measuring Social Support

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A rapidly expanding literature documents the effects of social support on physical and psychological well-being. Although definitions vary, most include both tangible components (e.g., financial assistance and physical aid) and intangible components (e.g., encouragement and guidance). Social support has been implicated in the mediation of stressful life events, recovery from illness, and increased program adherence. There are many inconsistent findings in the literature, however, and it is difficult to resolve discrepancies because measures of social support vary widely from study to study. To guide in the selection of measurement methods for research and applied work, 23 techniques for assessing social support are reviewed and evaluated. Criteria for favorable evaluation included reliability coefficients greater than .8 and documentation of validity. Correlations between various social support and criterion measures are simulated in order to demonstrate the consequences of choosing a measure with low reliability. Scale developers reported reliability data for 19 of the reviewed measures. Internal consistency coefficients ranged from .31 to .98. Test-retest coefficients ranged from .22 to .96. At least some validity documentation was available for 13 of the scales. Discriminant validity evidence, however, is almost universally absent. Despite psychometric weaknesses and variability among the scales, researchers have several instruments available to them.

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Over the last few years, health psychologists have devoted considerable effort to the study of social support. As the field has grown, a variety of different methods for measuring social support has become available. The purpose of this article is to consider the psychometric properties of a selected sample of social support measures. Numerous theoretical issues relevant to the concept of social support have been raised in important reviews by Heller (1979), House (1981), LaRocco, House, and French (1980), I. G. Sarason and B. R. Sarason (1985), and Thoits (1982). In addition, the relationship between social support and health has been discussed in a comprehensive article by Wallston, Alagna, B. M. DeVellis, and R. F. DeVellis (1983). Because several reviews of the conceptual issues are available, we provide only a brief overview before progressing to the specific task of evaluating measurement instruments.

CONCEPTUAL ISSUES

Social support and social resources appear to be significant buffers of stressful life events and moderators of psychological and physical well-being (Cobb, 1976; Dean & Lin, 1977; Turner, 1981). The study of social support has been difficult, however, because consensus on the definition of the construct has not been achieved. Authors and researchers have defined social support in idiosyncratic ways. Cobb (1976), for example, defined social support in informational terms, emphasizing that information, as opposed to goods and services, is the most central component. Other authors have stressed the importance of "tangible" support. Craven and Wellman (1973), proposed that support may be in the form of money or other types of assistance. B. H. Kaplan, Cassel, and Gore (1977) viewed social support as the "metness" or gratification of an individual's basic social needs (e.g., approval, esteem, succor, and belonging).

Social support has also been described in more simplistic ways. Enkenrode and Gore (1981) asserted that social support may be viewed as the number of friendships, relatives nearby, and organizational involvements. Finally, although a majority of the definitions of social support express the multidimensional aspect of the construct, there are also unidimensional definitions. For instance, Wilcox (1981) operationalized social support as being married or having a "confidant." Although availability of a confidant is easily measured, it may be misleading to weigh all support givers equally. A caring, supportive spouse or confidant may be

treated (in measurement) just as a spouse with whom there is frequent stressful conflict. Although most researchers seem to agree on the importance of social support, they do not agree on a definition. Consequently, many of the current definitions tend to be vague and difficult to operationalize.

Social Support and Stress

A large body of data suggests that social support may have impacts on physical and psychological health through its stress-mediating or stress-buffering role. Studies suggest that stressful life events in the personal, social, occupational, or marital realms may have important consequences. For example, Barrera (1981b) demonstrated that the course of adolescent pregnancy could be influenced positively by the presence of social support. Social support also seems to play a role in the reduction of stress during the first year of graduate school (Goplerud, 1980). Similarly, in a study of 100 male blue-collar workers then soon to be terminated from their jobs, social support proved to be a crucial determinant in favorable adjustment to unemployment (Gore, 1978). Finally, although marital disruption is a significantly stressful event for most individuals (Wilcox, 1981), support from sources outside the marriage (e.g., from friends or organizational involvements) appears to reduce the stressful consequences of divorce and separation.

Social Support and Health

Social support has also been presented as a crucial factor in coping with physical disability and illness (Wallston et al., 1983). Family, friends, and other social contacts aid in the reduction of emotional distress and problems resulting from injuries incurred in auto accidents (Porrit, 1979). The self-esteem and general life satisfaction of burn victims may also be related to support from friends and family (Davidson, Bowden, & Tholen, 1979).

Family cohesiveness in conjunction with spousal support resulted in higher morale and fewer changes in social functioning following the onset of hemodialysis among individuals with kidney disease (Dimond, 1979). Favorable outcomes following myocardial infarctions in men were shown to be a function of spouse support in a study of 76 couples by Finlayson (1976).

A final, yet critical, means by which social support may influence health outcomes is through its effect on program adherence. Certain chronic conditions (e.g., diabetes, hypertension) require long-term clinic attendance and a variety of life-style changes. Fulfillment of these requirements is

facilitated by the presence of supportive others in the patient's environment (Baekeland & Lundwall, 1975).

Methodological Considerations in Social Support Research

Methodological and theoretical problems have plagued social support research. Thoits (1982) asserted, "The direct effects of life events on social support and the interactive (buffering) effect of life events with support may be seriously confounded" (p. 150). The differences between social support as a buffer against life stress and social support as a main effect have been further explicated by Cohen and Wills (1985). Renne (1974) discussed the interplay between social health (of which social support is a part) and physical health. It may be that physical health is a prerequisite for social health, or it may be that socially healthy people enjoy better physical health. Enkenrode and Gore (1981) also noted the controversy over "causality" and the interdependence of support and stress; sources of support may not differ from sources of stress, perceptions of stress do not necessarily occur independently of perceptions of the availability of support, and stress may have an impact on support systems and vice versa. It is difficult to separate these two variables, and, as yet, no definitive research has addressed this question (Thoits, 1982).

Measurement of Social Support

Coincidental to the conceptual and definitional difficulties already mentioned, the measurement of social support has also been problematic. This is not to say, however, that measures of social support have not been devised. On the contrary, numerous scales, questionnaires, and other assessment tools purport to measure this construct. Many of these instruments, however, have less than the optimal psychometric properties. They also differ substantially in length, focus, approach, and the nature of support that is evaluated. In order to guide selection of a measurement strategy for use in a research setting, a review of current journals and psychological abstracts was undertaken. A recent article by Bruhn and Phillips (1984) represents an initial attempt to consolidate the available means of assessing social support. Although it provides useful information along these lines, there are some problems with the measurement techniques they chose to review. For example, the authors described the General Health Questionnaire (GHQ; Andrews, Tennant, Hewson, & Vaillant, 1978) as a technique to survey "physical, psychological, and social health in a community" (p. 161). In fact, the GHQ is a psychiatric symptom checklist that has been used as a "case detection instrument" in nonpsychotic psychiatric cases. Andrews

et al. did study social support, but they did so by evaluating variables they identified as crisis support, neighborhood interaction, and community participation.

A technique by Myers, Lindenthal, and Pepper (1975) referred to by Bruhn and Phillips (1984) as "social and instrumental role performance" is simply a series of individual items treated as independent variables by Myers et al. These variables were then correlated with life events and psychiatric symptomatology. Myers et al. did not promote this collection of variables as a "scale" for measuring social support. In addition to these minor problems, many new methods have been reported since the Bruhn and Phillips publication. As a result of these developments, a further review of assessment methods in social support is warranted. Therefore, a sample of 23 instruments for assessing social support were identified, and each is reviewed in this article. These scales were identified through a search of current literature and *Psychological Abstracts*. Our review considered only scales and excluded ad hoc questionnaire items. Although important contributions have arisen from analyses of available questionnaire data from population studies (Berkman & Syme, 1979), we chose to focus on scales (see Donald & Ware, 1982) that may be utilized by health psychologists and that are specifically designed to measure social support.

Criteria for favorable evaluation in this review included documentation of reliability coefficients greater than .8 and evidence of significant validity coefficients. Measures were also viewed more favorably if they contained both an evaluation of social support networks and subjective assessments of support satisfaction. Although network measures tend to be more reliable (see Table 1), they are likely to be less valid than support-perception measures. For instance, Barrera (1981a) postulated that the actual number of supportive individuals in one's environment is not as relevant to well-being as are subjective appraisals of the adequacy of such supports. In other words, quality may be more pertinent than quantity.

More recently, B. R. Sarason, Shearin, Pierce, and I. G. Sarason (1987) stated that conceptualizing social support in purely functional terms (e.g., listing individuals who provide certain services) may not be as useful as viewing support as the respondents' perception that they are valued and loved and have available to them persons who will provide assistance if necessary. In other words, it is the perception of social support and not the actual receipt that is important. A measure of support satisfaction is more likely to tap this aspect of the construct than are evaluations of networks alone. A summary of the review is given in Table 1.

Before considering each scale, a comment on the validity of social support scales is in order. Validity defines the inferences that can be made on the basis of a score or test (R. M. Kaplan & Saccuzzo, 1982). The most common form of validity in psychological testing is the association between

TABLE 1
Summary of Social Support Measures and Their Reliability and Validity

Measure	*Description*	*Sample*	*Reliability*	*Validity*
Norbeck Social Support Questionnaire (NSSQ) Norbeck, Lindsey, and Carrieri (1981)	Self-administered Respondent lists 20 network members and answers 9 questions about each 6 questions on functional properties of social support 1 question on duration of relationships 1 question on frequency 1 question on "recent losses"	2 groups 1. 75 first-year nursing graduate students; mean age = 30.3 years. 2. 60 senior nursing graduate students; mean age = 27.3 years.	Test–retest = .85 to .92 Internal consistency = .69 to .98	Controlled for response bias Concurrent validity = -.03 to .56 with Schaefer et al. SSQ Discriminant validity = nonsignificant with Profile of Mood States
Social Support Questionnaire (SSQ) Schaefer, Coyne, and Lazarus (1981)	2 separate parts 1. 9 situations measuring tangible support. 2. List of network members and ratings for informational support and emotional support.	100 adults 48 to 64 years old; 48 men, 52 women	Test–retest = .56 (tangible) and .66 (emotional) after 9 months Internal consistency = .81 (informational), .95 (emotional), and .31 (tangible)	Not available
Personal Resource Questionnaire (PRQ) Brandt and Weinert (1981)	2 separate parts 1. Descriptive information about resources, satisfaction, and presence of a confidant. 2. 25-item Likert scale and 5-item Self-Help Ideology Scale (SHI).	149 White middle-class spouses of individuals with multiple sclerosis	Cronbach's alpha = .89 for Part 2	Part 1 = .21 to .23, and Part 2 = .30 to .44 with a measure of family integration Construct validity = -.25 to -.14 with the SHI

Social Support Satisfaction Scale (SSSS) Blaik and Gienser (1980)	Long and short forms Series of questions Respondent must draw a 200-mm line from "feel worst possible" to "feel best possible" for each question	Not available	Test-retest = .96 (long form) and .91 (short form) Internal consistency = .93 (long term) and .69 (short form) Interform substitutability = .85	Not available
Gore Social Support Index (GSSI) Gore (1978)	13 items covering individuals' perception of others as supportive, frequency of outside activities, and perceived opportunity to engage in satisfying social activities	54 rural and 46 urban unemployed blue-collar workers; mean age = 49 years	Not available	Not available
Inventory of Socially Supportive Behaviors (ISSB) Barrera (1981a)	40 items; respondents rate the frequency with which each item occurred in the preceding month using a 5-point scale	30 male and 41 female undergraduate psychology students	Test-retest = .88; individual items = .44 to .91 Internal consistency = .93 (first administration) and .94 (second administration)	Not available

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Measure	*Description*	*Sample*	*Reliability*	*Validity*
Arizona Social Support Interview Schedule (ASSIS) Barrera (1981a)	6 categories: material aid, physical assistance, intimate interaction, guidance, feedback, positive social interaction	45 undergraduate psychology students	Test-retest = .88 for total network size, .54 for conflicted network size, and .69 for support satisfaction Internal consistency = .33 for support satisfaction and .52 for support need measure	r = .42 with ISSB (available network size) r = .32 with ISSB (conflicted network size)
Interpersonal Support Evaluation List (ISEL) Cohen, Mermelstein, Kamarck, and Hoberman (1985)	40-item scale (48-item student version) 4 subscales: Tangible, Belonging, Self-Esteem, and Appraisal Measures perceptions of available support	7 undergraduate samples 5 general-population samples	Test-retest = .71 to .87 (student version) and .63 to .70 (general-population version) Internal consistency = .77 to .86 for total student ISEL and .88 to .90 for total general-population ISEL	Student version: r = .46 with ISSB, and r = −.32 to −.64 with measures of social anxiety; no correlation with Marlowe-Crowne Social Desirability Scale (MCSDS) General population version: r = .52 to −.60 with measures of psychiatric symptomatology, and r = −.19 to −.39 with measure of physical symptomatology
Social Relationship Scale (SRS) Mearlane, Neale, Norman, Roy, and Streiner (1981)	6 categories of potential life stress Respondents list individuals with whom they have discussed each area and rate the helpfulness of each individual on a 7-point scale Respondents also indicate whether the relationship is reciprocal and list to whom they would turn in a crisis	73 community college students	Test-retest for number of individuals = .91 Mean helpfulness = .78	Based on clinicians' reports

Social Support Index (SSI) Wilcox (1981)	18 items tapping emotional, tangible, and informational support (6 items)	Subsample of 320 community residents	Test-retest = .89 Internal consistency = .92	SSI found to be a buffer of stress, yet no specific validity data are given
Social Support Questionnaire (SSQ) Wilcox (1981)	Questions concerning number of supporters, their relationship to the respondent, proximity, and number of voluntary organizations to which the respondent belongs		Not available	Not available
Kaplan's social support vignettes (SSV) A. Kaplan (1977)	16 "story identification" vignettes (data based on only 7) For each item, the respondent must choose which of 3 fictitious people he or she most closely resembles	293 family volunteers, 65 maladaptive parents, 420 hearing-impaired adults, and 100 mentally ill individuals	Internal consistency = .79 for family volunteers, .82 for maladaptive parents, .83 for hearing-impaired adults, and .83 for mentally ill individuals	Not available

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Measure	*Description*	*Sample*	*Reliability*	*Validity*
Quantitative Social Support Index (QSSI) Holahan and R. H. Moos (1982)	Items include number of visits with friends and relatives, number of club memberships, and availability of significant others with whom to talk, and so forth	267 families (2 adults from each) from the San Francisco area; median age = 44 years for men and 42 years for women	Not available	Not available
Social Stress and Support Interview (SSSI) Jenkins, Mann, and Belsey (1981)	Brief interview assessing stress and support in occupation, finance, housing, social life, marriage, and family Given to a respondent and an informant	100 individuals with "minor psychiatric morbidity"	Interrater agreement = 75% to 95%; interrespondent agreement = .62 to .72 (Kendall's tau)	Not available
Interview Schedule for Social Interaction (ISSI) Henderson, Duncan-Jones, Byrne, and Scott (1980)	4 variables tapping social support Takes approximately 45 min to complete	156 individuals from the voting register	Test-retest = .75 to .79 Internal consistency = .67 to .81	Based on modest correlations with the Eysenck Personality Inventory (EPI) and with reports of significant others in the respondents' lives

Social Support Scales (Dean et al. SSS) Dean, Lin, and Ensel (1981)	4 separate parts 1. 11 items dealing with confidant characteristics (Lowenthal & Haven, 1968). 2. 4 items dealing with family problems (Medalie & Goldbourt, 1976). 3. 2 items dealing with community/neighborhood support. 4. 26 items dealing with instrumental or expressive support.	99 adults from New York state; based on census data; age 20 years and older	Internal consistency 1. .28 to .82. 2. .59 to .76. 3. r = .67. 4. Factor analysis resulting in 5 items; .54 to .83.	Not available
Social Support Questionnaire (SSQ) I. G. Sarason, Levine, Basham, and B. R. Sarason (1983)	2 separate parts 1. List of individuals in network. 2. Overall level of satisfaction with support received for each item (27 items).	602 undergraduates	Test-retest = .90 for SSQ-Number (N) and .83 for SSQ-Satisfaction (S) after 4-week interval Internal consistency = .97 (N) and .94 (S)	r = -.22 between SSQ-N and Multiple Affect Adjective Check List (MAACL) r = -.43 between SSQ-S and MAACL. r = -.22 with Lack of Protection Scale (based on 277 respondents) r = .35 between SSQ-N and EPI and -.37 between SSQ-S and EPI (for women only) 0 correlation between SSQ and MCSDS

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Measure	*Description*	*Sample*	*Reliability*	*Validity*
Social Support Scale (Lin et al. SSS) Lin, Simeone, Ensel, and Kuo (1979)	9-item scale concerning interaction and involvement with friends, neighbors, people nearby, and the subcultural community Also asked about social adjustment	121 male and 49 female Chinese-Americans living in the District of Columbia; 76% were foreign born	Internal consistency alpha = .52 Item-total correlations ranged from .36 to .74	r = .364 with number of psychiatric symptoms
Perceived Social Support From Friends (PSS-Fr) and Perceived Social Support From Family (PSS-Fa) Procidano and Heller (1983)	Two 20-item scales tapping perceived receipt of support, information, and feedback from friends and family, respectively	222 undergraduates	Test-retest = .83 Internal consistency = .88 for PSS-Fr and .90 for PSS-Fa	Correlations with measures of psychiatric symptomatology, self-statements, and observed interactions
Social Network List (SNL) Stokes (1983)	Asks respondent to list up to 20 individuals who might provide support Characteristics of the network (e.g., size and density) are explored	82 respondents (38 men and 44 women) identified by students in an undergraduate psychology class	Not available	Not available

Satisfaction With Social Network Scale (SSNS) Stokes (1983)	8-item scale that asks respondents to rate their networks on 4 dimensions		Internal consistency = .92	Not available
Work Relationship Index (WRI) Billings and R. H. Moos (1982)	3 components 1. Involvement-concern with and commitment to job. 2. Peer cohesion-support from co-workers. 3. Support to and from supervisors.	185 employed 94 employed women from community sample	Internal consistency alpha = .88 Test-retest over 12 to 15 months = .59 for men and .53 for women	*r* with personal functioning range = -.20 to -.33 for men and -.10 to -.15 for working women
Diabetes Family Behavior Checklist (DFBC) Schafer, McCaul, and Glasgow (1984)	16 items designed to assess the frequency of supportive and nonsupportive behaviors that may influence the adherence of a diabetic family member to the prescribed regimen; scored separately for positive and negative behaviors	54 adults and 18 adolescents with insulin-dependent diabetes mellitus	Internal consistency alpha = .73 for adult positive score, .43 for adult negative score, .63 for adolescent positive score, .60 for adolescent negative score Test-retest over 6-month range = .58 to .72 for positive scores and .22 to .27 for negative scores	*r* betweeen positive and negative scores = .27 to .68 for adults and .10 to .26 for adolescents Significant negative correlations between negative DFBC scores and changes (over 6 months) in 3 categories of adherence to the diabetic regimen

(Continued)

Measure	*Description*	*Sample*	*Reliability*	*Validity*
Family Relationship Index (FRI) Billings and R. H. Moos (1982)	3 components 1. Cohesion: the degree to which family members are helpful and supportive of one another. 2. Expressiveness: encouragement for open expression of feelings among family members. 3. Conflict: the extent to which families fight and express anger.	185 men and 248 women in a community sample (154 of the women were unemployed)	Internal consistency alpha = .89 Test-retest over 12 to 15 months = .62 for men, .64 for employed women, and .69 for unemployed women	*r* with personal functioning range = −.07 to −.27 for working men, −.16 to −.44 for working women, and −.31 to −.38 for unemployed women

a score and some well-defined criterion that the investigator hopes to forecast or approximate. However, there are many situations in which no clearly defined criterion is available. Social support falls within this category. For situations in which there is no obvious definition of what the investigator hopes to measure, a strategy of construct validation is more appropriate. With construct validation, the investigator simultaneously defines a construct and develops the instrumentation to measure it. The meaning of a measure of social support may come to be defined by its correlations with other defined scales or measures in a series of studies. By developing measures of a hypothetical entity, such as social support, we may also learn more about the construct. Documenting construct validity requires several types of evidence. First, a scale developer must show that the measure adequately represents the domain of content. There should also be evidence that the scale correlates with other defined measures that are hypothetically similar (convergent evidence). Finally, there should be evidence that the scale is different from other measures purporting to assess the same construct (discriminant evidence). Discriminant evidence for construct validity may be particularly important in social support assessment because many different tools are promoted as assessing the same construct.

Review of the Scales

The Norbeck Social Support Questionnaire (NSSQ; Norbeck, Lindsey, & Carrieri, 1981) is a self-administered measure that asks respondents to list 20 social network members and to then answer nine questions about each. Six of these questions are concerned with functional properties of social support (e.g., affect, affirmation, and aid). There is one question about the duration of each relationship, one question on frequency of contact, and a final question on "recent losses" of social support. Psychometric properties were assessed in a study of two groups of graduate nursing students (N = 75 and N = 60). Test-retest reliabilities were .85 and .92, and internal consistency coefficients were estimated to be .69 and .98, for the two groups respectively. Concurrent validity for this measure was based on poor to modest positive correlation (−.03 to .56) with another social support measure, the Schaefer, Coyne, and Lazarus (1981) Social Support Questionnaire (SSQ), and discriminant validity was evidenced by a lack of correlation between the NSSQ and the portions of the Profile of Mood States (POMS) that measure psychiatric symptomatology and negative mood. However, no mention of the scale's independence from other social measures was offered. The authors also suggested that the NSSQ is relatively free, based on the absence of a correlation between their measure and the Marlowe-Crowne Social Desirability Scale (MCSDS), from the

of feelings among family members.
3. Conflict: the extent to which families fight and express anger.

influence of social desirability bias. In summary, this scale seems to be reliable, although validity data are weak and the number of items employed may be too few to adequately cover the content (content validity) of social support.

The Schaefer et al. SSQ is composed of two separate parts. Part 1 presents nine situations intended to measure tangible support. For instance, the respondent is asked whether there is someone they could go to for help in different situations—from borrowing a cup of sugar to receiving care following an injury. Part 2 requires a list of the respondents' social network members and a rating of each on informational support and on four questions dealing with emotional support. An example of an emotional support question is "How much does this person make you feel he/she cares about you?" In a sample of 100 community-based adults, test-retest coefficients were .56 for tangible support and .66 for emotional support over a 9-month period. Internal consistency was .81 for informational support, .95 for emotional support, and .31 for tangible support. Validity evidence was not specifically reported. Again, it is difficult to assess an instrument with so few items, and psychometric data based on a single item (informational support) must be viewed cautiously.

The Personal Resource Questionnaire (PRQ; Brandt & Weinert, 1981) is also made up of two distinct sections. Part 1 lists eight life situations in which one might need assistance and yields descriptive information regarding support resources, satisfaction, and the presence of a confidant. Part 2 consists of a 25-item Likert-type scale (ranging from *strongly agree* to *strongly disagree*) that includes five questions tapping each of the five dimensions of Weiss's (1974) conceptualization of social support: intimacy, social integration, nurturance, worth, and assistance. The 5-item Self-Help Ideology Scale (SHI) is also included in Part 2. Reliability and validity estimates were obtained in a study of 149 White, middle-class spouses of individuals with multiple sclerosis. Cronbach's alpha for Part 2 was .89. No internal consistency data were given for Part 1; no test-retest data were given for either section. Family integration was correlated .21 to .23 with Part 1 and .30 to .44 with Part 2, suggesting convergent validity. Part 2 was negatively correlated with the SHI ($-.25$ to $-.14$) indicating that individuals who tend to rely more on themselves for support have lower scores on the PRQ. The properties of this instrument seem promising. However, more psychometric data are required. Future studies might benefit from more representative respondent samples.

A novel approach to the measurement of social support is seen in the Social Support Satisfaction Scale (SSSS; Blaik & Genser, 1980). This scale has both a long and a short form. The respondent is asked a series of questions concerning potential support resources. In response to a question such as "When you go with need X to significant other Y, how do they make

you feel?" the respondent is asked to draw a 200-mm line from "feel worst possible" to "feel best possible." Test–retest correlations are reported to be .91 for the short form and .96 for the long form. Cronbach's alphas were .69 for the short form and .93 for the long form. The interform substitutability was calculated to be .85. However, the samples for these studies were not clearly defined, and validity data were not reported. Although this technique is interesting and possibly very useful, its evaluation must await additional data.

Another measure for which few psychometric data are available is the Gore Social Support Index (GSSI; Gore, 1978). The GSSI is comprised of 13 items covering individuals' perceptions of others as supportive, frequency of outside activity, and perceived opportunity to engage in satisfying social activities. It was administered to a sample of 54 rural and 46 urban unemployed blue-collar workers to assess their sources of social support; however, no psychometric data from the study were reported.

The Inventory of Socially Supportive Behaviors (ISSB; Barrera, 1981a) is a collection of 40 behaviorally oriented items. The respondent uses a 5-point scale to rate the frequency with which other people did the activities for him or her, to him or her, or with him or her during the preceding month. Examples of the helping behaviors include "Taught you how to do something, loaned you over $25.00, and comforted you by showing physical affection." Psychometric properties were evaluated in a sample of 30 male and 41 female undergraduate psychology students. Test–retest reliability was .88, with a range of .44 to .91 for individual items. However, the interval between administration was only 2 days. Coefficient alpha was .93 for the first administration and .94 for the second administration. In terms of validity, the ISSB correlates .36 with the Cohesion subscale of the Family Environment Questionnaire, which purports to measure perceived family support. The inventory has a slightly higher correlation (.42) with the Arizona Social Support Interview Schedule (ASSIS), developed by the same researcher (Barrera, 1981a).

The ASSIS contains items related to six categories of social support: material aid, physical assistance, intimate interaction, guidance, feedback, and positive social interaction. It was designed to examine characteristics of both "available" and "actual" networks. After assessment sessions of only 2 days apart (with a sample of 45 undergraduate students), the ASSIS had a test–retest reliability of .88 for total network size, .54 for conflicted network size (i.e., network members who were both a source of support and a source of stress), and .69 for support satisfaction. Coefficient alpha was .33 for support satisfaction and .52 for need satisfaction. As mentioned previously, the validity of the ASSIS is based on a .42 correlation with the ISSB for "available" network size and on a .32 correlation with the ISSB for "actual" network size. Although both these measures look promising, they

require validation against other criteria. As the author himself suggests, both instruments should be evaluated on other respondent populations.

The ISSB was used for comparative purposes in the development of another social support scale, the Interpersonal Support Evaluation List (ISEL; Cohen, Mermelstein, Kamarck, & Hoberman, 1985). Cohen suggested elsewhere (Cohen & Wills, 1985) that a buffering effect for social support will only be detected if the measure of support assesses the resources that are relevant to the needs elicited by the stressful event. Accordingly, the four ISEL subscales should relate to outcome variables on the basis of how much each subscale taps the resources that are relevant to the experienced stressor. Studies utilizing the ISEL provide some support for this hypothesis. The four ISEL subscales are Tangible, Belonging, Self-Esteem, and Appraisal. Intercorrelation among these indices ranges from .19 to .56. There is a total of 40 items in the ISEL (48 in the student version) that concern the perception of available support. The psychometric properties of the ISEL were evaluated using seven student samples and five general-population samples. Test-retest coefficients ranged from .87 for the entire scale to .71 for Self-Esteem on the student version over a 4-week period. These figures are somewhat lower for the general-population sample over a 6-week interval: They ranged from .70 for the entire scale to .63 for Appraisal. Internal consistency was estimated to be from .77 to .86 for the total student ISEL and from .88 to .90 for the total general-population ISEL. The validity of the ISEL is based on its correlations with several other measures. For example, the student ISEL correlated .46 with the ISSB (construct validity) and $-.52$ to $-.64$ with measures of social anxiety (discriminant validity). The ISEL was also shown to be free of social desirability bias. Further, increases in the ISEL total score are consistently associated with decreases in psychological symptomatology ($-.52$ to $-.60$ for the general-population version). Correlations between the ISEL and physical symptomatology are less impressive ($-.19$ to $-.39$) and less consistent.

Clearly Cohen et al. (1985) gave evidence for a reliable and valid measure of social support. However, there are some questions about the discriminant validity of the four separate subscales of the ISEL. In one study, the ISEL was highly correlated with other measures of support, suggesting that it is the general core of social support that is health-protective and not the specific functions (B. R. Sarason et al., 1987). On the other hand, each ISEL subscale does tap some unique aspect of variance.

Although some of the aforementioned methods for measuring social support rely heavily on actual tangible and physical assistance as well as emotional support, the Social Relationship Scale (SRS; McFarlane, Neale, Norman, Roy, & Streiner, 1981) assesses "verbal support." The SRS groups sources of stress into six categories (work, money and finances, home and family, personal and social, personal health, and issues related to society in

general), and respondents are asked to list individuals with whom they have discussed each content area and to rate, on a 7-point scale, the helpfulness of these discussions. Respondents are also to indicate whether the relationship is reciprocal and to list individuals to whom they feel they would turn in a crisis. A study of 73 community college students provided test-retest reliability coefficients of .91 for the number of individuals in the network and .78 for the average degree of helpfulness of these potential supports. The validity data were based primarily on clinical judgment.

Two other instruments are the Social Support Index (SSI) and the Social Support Questionnaire (SSQ), both developed by Wilcox. The SSI consists of 18 items—6 items from each of three categories of support: emotional, tangible, and informational. The items were generated by polling a sample of 320 community residents regarding "the type of supportive interactions they had with others during periods of stress" (p. 376). Reliability figures are based on a "subsample" (sample number unknown) of the polled population. The test-retest coefficient was .89 over a 4-week period, and Cronbach's alpha was .92. Although this measure seems to be stable over time, internally consistent, and derived in a meaningful way, no specific validity data were provided. However, the scale was used in a study that demonstrated the stress-buffering effect of social support. Psychometric data on the Wilcox SSQ were not presented. Whereas the SSI was designed by Wilcox to "gather information about the respondents' perceptions of the types of supportive acts potentially provided by their supporters" (p. 376), the Wilcox SSQ was intended to "gather descriptive information about the sources of the respondents' social support" (p. 376). Questions on this SSQ concern the number of supporters, their relation to the respondent, proximity, and the number of voluntary organizations in which the respondent participates. A. Kaplan (1977) proposed a unique approach to the assessment of social support. She constructed 16 "story-identification" vignettes, with three examples within each, from which the respondents must choose the fictitious individual they most closely resemble. For example:

> "Debbie: People are devoted to Debbie and love her. They always support her, listen to her, and sympathize with her. They care about her a lot."
>
> "Leslie: People are usually fond of Leslie. They can be sympathetic, but do not always listen to her or support her."
>
> "Robin: People are not devoted to Robin. They do not support her, listen to her, or sympathize with her. They do not care about her or love her."

The respondent is then asked to check one of the following choices: "I'm like Debbie," "I'm halfway between Debbie and Leslie," "I'm like Leslie,"

"I'm halfway between Leslie and Robin," or "I'm like Robin." Four groups of individuals completed this task: 293 individuals in a family volunteer group (Cronbach's alpha = .79), 65 individuals in a maladaptive parent group (Cronbach's alpha = .82), 420 hearing-impaired adults (Cronbach's alpha = .83), and 100 individuals described as "mentally ill" (Cronbach's alpha = .83). Although the internal consistency demonstrated by each administration was moderately high, no other psychometric data were presented. The technique, however, is interesting and merits further investigation.

The Quantitative Social Support Index (QSSI; Holahan & Moos, 1982), as its name implies, was designed to elicit "a quantitative measure of social support in the areas of family and relatives, friends, job, and community involvements" (p. 406). Items include "number of visits with relatives and friends during the previous month, number of friends, number of club and organizational memberships, frequency of attendance at religious services, and number of individuals available to discuss a problem" (p. 406). Religious attendance was scored on a 6-point scale, and scores for the remaining items were derived by summing the number of contacts. The QSSI was administered to 267 families (two adults from each), yet no psychometric information is available. The measure deals only with the number of supports and not with satisfaction levels or quality. Several different authors have argued that these are crucial aspects of social support; these authors may take a less favorable view of the QSSI (Barrera, 1981a; Cassel, 1974; Henderson, 1977; I. G. Sarason, Levine, Basham, & B. R. Sarason, 1983; Turk, 1979).

Aside from paper-and-pencil methods for measuring social support are several interview methods for assessing this construct. The Social Stress and Support Interview (SSSI; Jenkins, Mann, & Belsey, 1981) is a brief and easy-to-administer tool designed to assess both stress and support in major life domains. The domains are occupation, finance, housing, social life, marriage, and family: "Each area is explored by the interviewer in a semi-structured way in order to establish the material position, the subject's view of how the circumstances he/she describes affect him/her, and their major advantages and disadvantages" (p. 196). The SSSI was administered to a group of 100 men and women with "minor psychiatric morbidity." Reliability for this instrument was based on interrater agreement (75% to 95%) and on agreement with an informant (someone who had known the respondent for "many years"; Kendall's tau = .62 to .72). Validity estimates were based solely on "reason" and a review of the literature on social support and stress. The SSSI is provocative, yet its validity remains to be convincingly demonstrated.

Another interview procedure, the Interview Schedule for Social Interaction (ISSI; Henderson, Duncan-Jones, Byrne, & Scott, 1980), takes approx-

imately 45 min to complete. Items are scored in a dichotomous fashion (0 or 1), and four scores are obtained from each interview: Availability of Attachment, Perceived Adequacy of Attachment, Availability of Social Integration, and Adequacy of Social Integration. The ISSI was administered to a sample of 756 registered voters representing an age range of 18 to over 65 years. Internal consistency coefficients were found to be .67 to .81 for the four primary scales. A subsample of 231 respondents completed the ISSI a second time, with an average interval of 18 days. Test–retest coefficients were estimated to be between .75 and .79. Despite acceptable reliability and documentation, evidence for the validity of the instrument is less adequate. The authors stated that the ISSI is face valid because it taps the aspects of social support most important in adulthood. Unfortunately, face validity, although implying that the interview items are related to the purported purpose of the test, does not provide a basis for inference. Further, the authors asserted, "If it could be demonstrated that the interview questions are answered truthfully, the argument for validity would be complete" (p. 730). It is unclear why this would be the case. Although truthfulness is desirable, validity requires an empirical foundation. Construct validity for the ISSI is based on very modest correlations between this instrument (and the Eysenck Personality Inventory or EPI) and reports of the significant other. The ISSI shows some promise as an interview measure of social support. It addresses the perception of social support, which, as discussed earlier, is a crucial component of any assessment of this construct. However, further validity documentation is needed before this instrument can be considered psychometrically adequate.

Both the SSSI and the ISSI may have some utility for the assessment of social support. Because they are interview methods, however, they are likely to be much less efficient than paper-and-pencil measures due to the increases in cost and time necessary for their administration. A recent series of studies has shown that interview methods are highly correlated with questionnaire methods and do not appear to yield qualitatively different results (B. R. Sarason et al., 1987).

Perhaps the most complex of the social support measurement devices is the group of items compiled by Dean, Lin, and Ensel (1981), collectively called the "Social Support Scales" (SSS). Dean et al. sought to bring together items developed by other researchers that had been shown to be related to depression or other disorders, items that appeared promising but as of yet were untested, and items of their own design. The result was 11 items dealing with characteristics of a confidant (B. H. Kaplan, 1975; Lowenthal & Haven, 1968), 4 items concerning family problems—for example, "Have you had any problems (conflicts) with your family at present?" (Medalie & Goldbourt, 1976), 2 items referring to community/neighborhood support, and 26 items dealing with available instrumental

and expressive support. The latter two groups of items were based on the authors' own conceptualizations of instrumental and expressive support. This combination scale was administered to a group of 99 community-based adults solicited on the basis of New York State census information. Psychometric characteristics were presented independently for each subscale. Internal consistency coefficients for each set of items are as follows: Item-total correlations among the Lowenthal-Haven-B. H. Kaplan confidant items ranged from .28 to .82; item-total correlations among the Medalie-Goldbourt items ranged from .59 to .76; the zero-order correlation between the community satisfaction item and the neighborhood satisfaction item was .67. The 26 instrumental-expressive support items were factor-analyzed to obtain five orthogonal factors (Monetary Problems, Lack of Companionship, Demands, Communication Problems, and Not Having Children) with factor loadings ranging from .54 to .83. The result of the factor analysis must be interpreted cautiously because the ratio of items to respondents would not yield reliable factors. Validity data for the overall scale rest on work previously reported by the individual formulators of each set of items. The Dean et al. SSS, by tapping a variety of critical components of social support, provides a multifaceted approach to the measurement of a multifaceted construct. However, the discriminant validity of the different components remains to be demonstrated.

Another social support measure to be reviewed is the I. G. Sarason et al. (1983) SSQ. This SSQ began with a pool of 61 items and was narrowed to 27 items by deleting those questions deviating from a criterion of high interitem correlation. Each of the 27 items requires a two-part response. Respondents must (a) list the people they can count on for support in a given set of circumstances and (b) indicate their overall level of satisfaction with these supports. This SSQ yields two scores: the number (N) score for each item is the number of support persons listed, which is summed across all items and is then divided by the total number of items (27) to obtain a mean N score; the satisfaction (S) score ranges from 1 (*very dissatisfied*) to 6 (*very satisfied*) for each item, and again these figures are summoned and divided by the total number of items to obtain the mean S score.

I. G. Sarason et al. conducted a series of studies to determine the reliability and validity of their measure. Based on a normative sample of 602 undergraduate college students, coefficient alpha was .94 for S and .97 for N. Test-retest correlations over a 4-week period were .90 for N and .83 for S. These results over a 4-week period were .90 for N and .83 for S, suggesting that this SSQ is a very stable instrument with high internal consistency. Validity data were based on several comparisons between this SSQ and other measurement techniques. A sample of 277 undergraduate students was given this SSQ, the Multiple Affect Adjective Check List (MAACL), and the Lack of Protection Scale (LP). There were significant

negative correlations between the SSQ-N and the SSQ-S and measures of emotional discomfort (anxiety, depression, and hostility) as tapped by the MAACL (−.22 and −.43, respectively). Likewise, items on the LP dealing with recollections of separation anxiety in childhood also correlated negatively (−.22 to −.32) with this SSQ.

In addition, a subsample from this study group (28 men, 38 women) was given the Extraversion and Neurotocism scales of the EPI and the MCSDS. The EPI Extraversion measure for women was positively correlated (.35) with the SSQ-N, and the EPI Neurotocism scale was negatively correlated (−.37) with the SSQ-S for women only. These results are in the same direction for men; however, the relationships were not statistically significant. These results suggest that "people who have fewer social supports and are dissatisfied with that state of affairs are more likely than others to be anxious and experience periods of emotional arousal" (I. G. Sarason et al., 1983, p. 133). Also, the MCSDS did not correlate with the SSQ-N or with S scores for either sex, indicating that the I. G. Sarason et al. SSQ is relatively free from a social desirability response bias. This SSQ has been compared to numerous other measures such as the Life Experiences Survey, the Rosenberg Self-Esteem Scale, and the Locus of Control Scale, to provide additional validity information. The results are not discussed in detail here (see I. G. Sarason et al., 1983), but suffice to say that they give more credence to the usefulness of this instrument. The only major problem with the available psychometric data on this SSQ is that it has been validated most often against other paper-and-pencil measures. Prospective studies involving interactions between support and observable behaviors in experimental programs would add convincing evidence for validity. Recently, a brief, 6-item version of this SSQ has been made available (I. G. Sarason, B. R. Sarason, Shearin, & Pierce, in press).

Another social support scale was developed by Lin, Simeone, Ensel, and Kuo (1979). The Lin et al. Social Support Scale (SSS) is a 9-item scale that characterizes involvement with friends, neighbors, and members of the subculture. It was developed for a study investigating the relationship between social support, stressful life events, and illness in a Chinese-American community. The item-total correlations varied from .36 to .74, suggesting that this scale may be composed of separate subfactors. As a result, the internal consistency was relatively low (r = .52). However, validity data suggested that the associations between the Lin et al. SSS and psychiatric symptoms were significant and in the predicted direction.

Procidano and Heller (1983) developed two Perceived Social Support (PSS) measures. The PSS-Fr measures perceived social support from friends, whereas the PSS-Fa measures perceived social support from family. These instruments were designed to assess "the extent to which an individual perceives that his/her needs for support, information, and

feedback are fulfilled by friends . . . and by family" (p. 2). Each questionnaire contains 20 items chosen due to their relatively high correlations with the total score. Both the PSS-Fr and PSS-Fa proved to be homogeneous measures with internal consistency coefficients (Cronbach's alpha) of .88 and .90, respectively. Test-retest reliability, over a 1-month period, was estimated to be .83. Reliability estimates were based on a sample of 222 undergraduate students. The PSS-Fr and PSS-Fa were shown to be better predictors of psychiatric symptomatology than life events or structural characteristics of support networks, providing evidence for construct validity. These two measures appear to be quite adequate psychometrically. In addition, they assess the perception of social support, which, again, is the most crucial aspect of this construct (B. R. Sarason et al., 1987). A possible limitation of this method of measuring social support is its dichotomous response (*yes–no*) format. The PSS-Fr and PSS-Fa may be sensitive only to the lower and middle ranges of social support, with less discrimination in the upper levels (B. R. Sarason et al., 1987). Although the PSS-Fa and PSS-Fr may still be very appropriate in several settings, they may not be the instruments of choice when a highly sensitive assessment of social support is needed.

The nature of the relationship between network structure and support satisfaction was explored in a study that also described two measures of social support: the Social Network List (SNL) and the Satisfaction With Social Network Scale (SSNS; Stokes, 1983). The SNL asks respondents to list up to 20 people who are a part of their lives and requires them to indicate which people are relatives and which are people they could "confide in or turn to for help in an emergency." Several network characteristics are obtained from the SNL, including size, number of relatives versus number of friends, and various density estimates. No psychometric properties are reported for the SNL. This instrument was used to predict perceived social support satisfaction scores on the SSNS, which served as the criterion variable. The SSNS is an 8-item scale that asks respondents to rate aspects of their networks (as measured by the SNL) on four dimensions: general satisfaction, amount of desired change in the network, satisfaction with assistance in daily activities, and satisfaction with emotional support. Although test-retest data were not reported for this instrument, internal consistency was estimated to be .92. No other reliability or validity data are provided, as it appears that the author's primary concern was in assessing the relationship between network structure and satisfaction. Stokes asserted that the greatest predictor of satisfaction with social networks is the number of confidants—up to about seven persons; after seven, increases in the number of network members do not reflect increases in support satisfaction.

One of the more recent trends in social support measurement has been to

develop measures that can be used in more specific situations. In the tradition of social learning theory (Bandura, 1977), general measures may be less valuable than techniques specifically tailored to particular situations. According to social learning theory, a supportive social environment may enhance the expectation of reinforcement for specific activities. Social learning approaches emphasize the relationship between specific environments and specific behaviors. In this tradition, scales are developed to describe support in specific situations or for specific behaviors.

Three social support scales based on social learning are considered in this review. First, the Work Relationship Index (WRI) is a three-component scale designed to evaluate the quality of social relationships in the work environment. The three subscales are all taken from another measure known as the Work Environment Scale (R. H. Moos, 1981). The three components include (a) involvement (the extent to which employees are involved and committed to their jobs), (b) peer cohesion (which evaluates how friendly and supportive other employees are on the job), and (c) supervisor support (which taps support and encouragement from management). In a study of employed men and women, the scale was shown to have substantial internal consistency and moderate test–retest reliability over a 1-year to 15-month period. Low but statistically significant negative correlations were shown between the WRI and personal functioning. These relationships tended to be weaker for women than they were for men. In addition, the scale has been shown to be correlated with depression in both community and alcoholic populations (Billings & R. H. Moos, 1982). A related scale developed by the same authors is the Family Relationship Index (FRI). This index was created from the Family Environment Scale (FES; R. H. Moos & B. S. Moos, 1981) and consists of three subscales: (a) Cohesion (a measure of family member helpfulness and support), (b) Expressiveness (a measure of encouragement to act openly and express feelings), and (c) Conflict (a measure of the extent to which family members express anger and aggression as well as resolve conflict). As with the WRI, the authors do not report how many items compose each scale. The FRI was given to 285 men and 248 women in a community sample as well as to smaller samples from clinical populations. The internal consistency and test–retest reliability are quite adequate. Correlational studies suggest low to moderate correlations between the FRI and measures of personal functioning and depression. These associations tend to be somewhat higher for women than for men.

The final instrument summarized in Table 1 is the Diabetes Family Behavior Checklist (DFBC). This is a 16-item scale designed to help the investigators understand compliance to the complex regimen required of people afflicted with insulin-dependent diabetes mellitus (IDDM). The scale evaluates the supportive and nonsupportive behaviors of family members

that may influence adherence to the diabetic regimen. Separate scores for positive and negative behaviors are obtained. In a field test with 54 adult and 18 adolescent IDDM patients, the internal consistency coefficients for the scale ranged from .43 to .73. Over a 6-month interval, the test-retest reliabilities were adequate for the positive scores. Interestingly, however, the test-retest correlations for the negative scores were considerably lower (.22 to .27). However, validity evidence suggests that it is the negative items that are correlated with changes in adherence to the diabetic regimen. The more negative social influences within the family, the lower was the prospective (6-month) adherence to glucose testing, diet, and regular insulin injection. The DFBC is an example of a scale derived from social learning theory principles. It asks about specific supportive influences for a specific respondent population.

CONSEQUENCES OF LOW RELIABILITY

In order to demonstrate the effects of reliability between social support and other outcome variables, we simulated correlations using a variety of social support and outcome measures. The effect of low reliability on correlations has been well documented in the psychometric literature. Observed correlations between two variables are attenuated when either or both variables are measured with error. Formulas that describe this relationship are available (R. M. Kaplan & Saccuzzo, 1982).

In our simulations, we made the following assumptions. First, we assumed that the maximum true correlation between social support and various outcome measures would not exceed .5. This seems reasonable because most health outcome variables are affected by multiple sources of variability. For example, one of the variables in our simulation is blood pressure. We would not expect the true correlation between social support and blood pressure to exceed .5 because blood pressure is affected by hereditary factors, age, weight, diet, and so forth. The outcome variables selected for the simulation were chosen because they were used in a wide variety of studies and may reasonably be expected to correlate with social support. With these exceptions, five outcome variables were chosen somewhat arbitrarily to represent different observed levels of reliability. In a similar fashion, four social support questionnaires were chosen to represent different levels of reliability.

Because this simulation is for illustrative purposes only, the outcome variables chosen may or may not in actuality bear a significant relationship to social support. However, because social support has been shown to affect both physical health (e.g., DiMatteo & Hays, 1981; Lowenthal & Haven, 1968; Nuckolls, Cassel, & H. Kaplan, 1972; etc.) and psychological health

(e.g., Dean et al., 1981; Miller, Ingham, & Davidson, 1976; etc.) and may serve as a buffer against life stress (Barrera, 1981b; Dean & Lin, 1977; Goplerud, 1980; etc.), it seems reasonable to select outcome variables associated with health concerns.

The first outcome variable used in the simulation was the Mental Health Questionnaire of the Older American Research and Service Center Instrument (OARS). The OARS is a multipurpose assessment questionnaire for evaluating the elderly. It was developed at Duke University and has been used in a wide variety of studies. Although the psychometric data for the OARS are generally good, the test–retest coefficient for the 15-item mental health screening tool was only .32. This measure was chosen for use in the simulation due to this relatively low coefficient (Fillenbaum, 1978).

Social scientists often attempt to correlate their measures with ratings by trained medical practitioners. However, clinical ratings are known to be fallible and are often measured with considerable error. To demonstrate this point, we chose clinical ratings of dysfunction provided by active medical practitioners for use in the simulation. The reliability of these ratings of dysfunction obtained in a careful study by Bergner, Bobbit, Carter, and Gilson (1981; see their Table 5) was .41.

Our next range of reliability was taken from a measure of life stress. Although the Schedule of Recent Events (SRE) has been used successfully in many studies, early reports suggested that it had a test–retest reliability of only .55 (Holmes & Rahe, 1967). A measure of life change was chosen because many investigators hope to demonstrate a relationship between life events and social support.

Some investigators believe "hard" physical measures provide better criteria against which to evaluate social variables. To simulate one physical outcome measure, we chose blood pressure. A variety of different studies have demonstrated that blood pressure, even when measured under the most rigorous Hypertension Detection and Follow-Up Program criteria, has a reported reliability of approximately .65 (Hypertension Detection and Follow-Up Program Cooperative Group, 1979). Finally, we used the Sickness Impact Profile (SIP), a widely used general health outcome measure that has a reported reliability for an interviewer-administered form of .97 (Bergner et al., 1981).

The social support measures were the Dean et al. (1981) SSS. This was chosen for its low reliability level of .28. It should be noted that this was only for illustrative purposes because various studies have shown a range of reliability coefficients for this measure. The .28 value was chosen because it was the lowest observed reliability coefficient. The second social support measure used for the simulation was the support need measure from Barrera's (1981a) ASSIS. The reliability coefficient for that measure was .52. The SSSS (Blaik & Genser, 1980) has an internal consistency reliability of

.69 for the short form. It was also used in this simulation. Finally, a portion of the I. G. Sarason et al. SSQ enumerating the number of people in the network was chosen because of its very high (.97) level of reliability.

The expected observed correlation between each social support measure and each outcome measure was estimated using the formula

$$R = \sqrt{.5 r_{11} r_{22}}$$

in which R is the expected observed correlation, r_{11} is the reliability of the social support questionnaire, r_{22} is the reliability of the outcome measure, and .5 is the expected true correlation of .5.

The simulation is summarized in Table 2. The entries in Table 2 represent the expected observed correlation between each social support and outcome measure given that the true correlation between each social support and outcome measure would be .5. Asterisks are also used to identify those that would be statistically significant at the .05 level in a study with 50 respondents.

As the table demonstrates, the expected observed correlation between measures is affected by their reliability. If the true correlation between variables were .5, the SSQ-N would still find a statistically significant correlation when used with all outcome measures except the OARS Mental Health Questionnaire. Conversely, the Dean et al. SSS, with a reliability of .28, would not be able to detect a .5 correlation with any of the chosen outcome measures. In other words, it would not be a reasonable effort to employ the Dean et al. SSS and to expect to obtain any significant correlations under our assumptions. The other social support questionnaires represent intermediate capabilities to detect correlations. For exam-

TABLE 2
Correlations Between Selected Social Support and Criterion Measures

Scale	*OARS Mental Health Questionnaire (.32)*	*Clinical Ratings (.41)*	*Schedule of Recent Events (.55)*	*Blood Pressure (.65)*	*Sickness Impact Profile (.97)*
I. G. Sarason et al. SSQ-N (.97)	.278	.32*	.37*	.40*	.48*
SSSS short form (.69)	.24	.27	.31*	.33*	.41*
ASSIS support need measure (.52)	.20	.23	.27	.29*	.36*
Dean et al. SSS Lowenthal and Haven (1968) items (.28)	.15	.17	.20	.21	.26

*If $r \geq .2818$, then $p < .05$.

ple, the ASSIS might be expected to detect a correlation with blood pressure or the SIP, but not with the SRE, the OARS measure, or clinical judgments. Again, this simulation assumes that the true correlation would be .50. Many of the relationships between social support and health outcomes might be expected to be even weaker. Thus, it may be difficult to detect relationships between social support and health outcomes with measures having less than optimal reliability.

Despite this, a researcher may select a measure with moderate or even low reliability due to the instrument's ease of administration, simplicity in scoring, or appropriateness to the variable being examined. Although determining the reliability of scales is a well-established standard in terms of assessment, it may be legitimate to use a less reliable tool if the dependent measure has high enough reliability on its own to make the inquiry worthwhile. In any case, the researcher should be cognizant of the approximate reliabilities of measures and the potential impact of low reliability on observed correlations.

SUMMARY OF SCALES

Table 3 summaries our evaluation of the assessment methods. Scale developers reported reliability data for 19 of the measures reviewed. Among those reporting internal consistency coefficients, the range was .31 to .98. Test-retest coefficients ranged from .22 to .96 for the 12 authors reporting them.

Only 13 authors reported acceptable validity data. Validity was assessed against criteria such as the FES, the SHI, the LP, the MAACL, the POMS, and clinicians' reports. Several of the instruments were compared to other methods also purported to measure social support.

It seems that the problem of accurately measuring social support resources is not due merely to a lack of available instruments. A plethora of assessment techniques exists, but the psychometric properties for the majority of these measures have not been convincingly documented. The components of social support and/or their rationale are not always given. This relative lack of information makes some instruments difficult to assess, leading to the suggestion that authors provide adequate data concerning their scales at the time they are initially published. Although the list of social support measures presented here is not exhaustive, it does seem to be a representative sample of the available scales and questionnaires.

To date, validity data for social support scales have not always been impressive. Several authors report no validity data at all. Data on the validity of social support scales could make major contributions to our

TABLE 3
Evaluation of Methods for Measuring Social Support

Scale	Component		Psychometric Property			Unique Attributes
			Reliability > .80			
	Measure of Network	Measure of Satisfaction	Test–Retest	Internal Consistency	Validity Documentation	
NSSQ	Yes	No	Yes	Yes	Yes	None
Schaefer et al. SSQ	Yes	Yes	No	Yes	Yes	None
PRQ	Yes	Yes	No	Yes	Yes	SHI
SSSS	No	Yes	Yes	Yes	No	None
GSSI	No	Yes	No	No	No	Frequency of outside activities
ISSB	Yes	No	Yes	Yes	Yes	Frequency of helping behaviors
ASSIS	Yes	No	Yes	No	Yes	Available versus actual networks
ISEL	No	Yes	Yes	Yes	Yes	None
SRS	Yes	Yes	Yes	No	No	Tap the reciprocity of relationships
SSI	No	No	Yes	Yes	No	None
Wilcox SSQ	Yes	No	No	No	No	Looks at proximity of supporters and voluntary organization participation
SSV	No	No	No	Yes	No	"Story identification" technique
QSSI	Yes	No	No	No	No	Number of club memberships
SSSI	No	No	No	Yes	No	Looks at stress
ISSI	No	Yes	No	Yes	Yes	Based on large community, neighborhood support and family problems
I. G. Sarason et al. SSQ	Yes	Yes	Yes	Yes	Yes	None
Lin et al. SSS	No	Yes	No	Yes	Yes	Study focused on specific (Chinese-American) community
PSS-Fr and PSS-Fa	No	Yes	Yes	Yes	Yes	Separates family support from support from friends
SNL and SSNS	Yes	Yes	No	Yes	No	None
WRI	No	Yes	Yes	Yes	Yes	Characterizes aspects of support in work environment
FRI	No	Yes	Yes	Yes	Yes	Focuses on family support
DFBC	No	Yes	Yes	Yes	Yes	Specific to adherence to diabetic regimen

understanding of the construct. Currently, however, different investigators choose different criteria against which to validate their scales, and validity studies have not clearly established that most existing measures actually tap the same construct so elegantly described in conceptual articles. A related problem is the discriminant validity of the measure. We do not need 23 different measures of social support. In the future, we will need to learn more about the similarities and the differences among the measures.

The current state of social support measurement is not necessarily bleak, despite the aforementioned psychometric weaknesses characterizing many of the support scales. Although many of the measures are incommiserate, and there is no consensus on the operational or conceptual definition of support (Gottlieb, 1981), different conceptualizations leading to variations in what is measured may tell us that several different constructs can be labeled as social support. As a practical matter, researchers may choose a measure that matches their conceptualization. For example, a researcher who defines social support in informational terms (see Cobb, 1976) may choose to employ the SSI (McFarlane et al., 1981) because it contains items that tap the informational support respondents may receive. On the other hand, an investigator interested in social support as the metness of a variety of needs would be more likely to select an instrument such as the ASSIS (Barrera, 1981a), which examines support in terms of material aid, physical assistance, guidance, feedback, and so forth. In short, major conceptual differences in the social support literature dictate that a variety of corresponding measures be available so that specific research issues can be addressed. On a more theoretical note, it will be important to examine the discriminant validity of various social support scales. For example, to what extent are the measures tapping the same or different constructs? Initial work along these lines has been completed by B. R. Sarason et al. (1987). In their review of the interrelationships among social support measures, it was asserted that differences between instruments arise as functions of how questions are asked, which type of scoring is employed, and which "supportive behaviors" are tapped. It was further suggested that measures that focus on the respondent's perception of being loved and valued more accurately assess social support. The evidence for specific function has not clearly been established, as measures of the "separate" functions are highly correlated among themselves and with the core dimension.

Lack of a consensual definition of social support makes it difficult, if not impossible, to compare studies that link social support to stress, health outcomes, and general psychological and physical well-being. Results from such studies must be viewed critically, with careful attention to the quality and type of measurement device employed—that is, is the instrument appropriate for the variables being assessed? Meaningful conclusions from research studies depend on the valid and reliable measurement of social support.

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REFERENCES

Andrews, G., Tennant, C., Hewson, D. M., & Vaillant, G. E. (1978). Life event stress, social support, coping style, and risk of psychological impairment. *Journal of Nervous and Mental Disease, 166,* 307–316.

Baekeland, F., & Lundwall, L. (1975). Dropping out of treatment: A critical view. *Psychological Bulletin, 82,* 738–783.

Bandura, A. (1977). *Social learning theory.* Englewood Cliffs, NJ: Prentice-Hall.

Barrera, M. (1981a). Preliminary development of a scale of social support. *American Journal of Community Psychology, 9,* 435–447.

Barrera, M. (1981b). Social support in the adjustment of pregnant adolescents: Assessment issues. In B. H. Gottlieb (Ed.), *Social networks and social support* (pp. 69–96). Beverly Hills, CA: Sage.

Bergner, M., Bobbit, R. A., Carter, W. B., & Gilson, B. S. (1981). The Sickness Impact Profile: Development and final revision of a health status measure. *Medical Care, 19,* 787–806.

Berkman, L. F., & Syme, S. L. (1979). Social networks, host resistance and mortality: A year follow-up study of Alameda County residents. *American Journal of Epidemiology, 109,* 186–204.

Billings, A. F., & Moos, R. H. (1982). Social support and functioning among community and clinical groups. A panel model. *Journal of Behavioral Medicine, 5,* 295–311.

Blaik, R., & Genser, S. G. (1980). Perception of social support satisfaction: Scale development. *Personality and Social Psychology Bulletin, 6,* 172.

Brandt, P. A., & Weinert, C. (1981). The PRQ—A social support measure. *Nursing Research, 30.* 277–280.

Bruhn, J. G., & Phillips, B. U. (1984). Measuring social support: A synthesis of current approaches. *Journal of Behavioral Medicine, 7,* 151–169.

Cassel, J. (1974). An epidemiological perspective of psychosocial factors in disease etiology. *American Journal of Public Health, 64,* 1040–1043.

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38.* 300–314.

Cohen, S., Mermelstein, R., Kamarck, T., & Hoberman, H. N. (1985). Measuring the functional components of social support. In I. Sarason & B. Sarason (Eds.), *Social support: Theory, research, and applications* (pp. 73–94). Dordrecht, Netherlands: Martinus Nijhoff.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310–357.

Craven, P., & Wellman, B. (1973). The network city. *Sociological Inquiry, 43*(3), 57–88.

Davidson, T. N., Bowden, L., & Tholen, D. (1979). Social support as a moderator of burn

rehabilitation. *Archives of Physical Medicine and Rehabilitation, 60,* 556.

Dean, A., & Lin, N. (1977). The stress buffering role of social support: Problems and prospects for systematic investigation. *Journal of Nervous and Mental Disease, 165,* 403–417.

Dean, A., Lin, N., & Ensel, W. M. (1981). The epidemiological significance of social support systems in depression. *Research in Community Mental Health, 2,* 77–109.

DiMatteo, M. R., & Hays, R. (1981). Social support and serious illness. In B. H. Gottlieb (Ed.), *Social networks and social support* (pp. 117–148). Beverly Hills, CA: Sage.

Dimond, M. (1979). Social support and adaptation to chronic illness: The case of maintenance hemodialysis. *Research in Nursing and Health, 2,* 101–108.

Donald, C. A., & Ware, J. E. (1982). *The quantification of social contacts and resources.* Santa Monica, CA: RAND Corporation.

Enkenrode, J., & Gore, S. (1981). Stressful life events and social support. The significance of context. In B. H. Gottlieb (Ed.), *Social networks and social support* (pp. 43–68). Beverly Hills, CA: Sage.

Fillenbaum, G. G. (1978). Validity and reliability of the Multidimensional Functional Assessment Questionnaire. In *Multidimensional functional assessment: The OARS methodology* (pp. 25–35). Durham, NC: Duke University, Center of the Study of Aging and Human Development.

Finlayson, A. (1976). Social networks as coping resources: Lay help and consultation patterns used by women in husbands' post-infarction careers. *Social Science and Medicine, 10,* 97–103.

Gopierud, E. N. (1980). Social support and stress during first year graduate school. *Professional Psychologist, 11,* 283–290.

Gore, S. (1978). The effect of social support in moderating the health consequences of unemployment. *Journal of Health and Social Behavior, 19,* 151–165.

Gottlieb, B. H. (1981). *Social networks and social support.* Beverly Hills, CA: Sage.

Heller, K. (1979). The effects of social support: Prevention and treatment implication. In A. P. Goldstein & F. H. Kanfer (Eds.), *Maximizing treatment gains* (pp. 353–382). New York: Academic.

Henderson, S. (1977). Measuring social relationships. *Journal of Nervous and Mental Disease, 168,* 63–69.

Henderson, S., Duncan-Jones, P., Byrne, D. G., & Scott, R. (1980). Measuring social relationships. The Interview Schedule for Social Interaction. *Psychological Medicine, 10,* 723–734.

Holahan, C. J., & Moos, R. H. (1982). Social support and adjustment: Predictive benefits of social climate indices. *American Journal of Community Psychology, 10,* 403–415.

Holmes, T. H., & Rahe, R. H. (1967). The Social Readjustment Rating Scale. *Journal of Psychosomatic Research, 11,* 213–218.

House, J. S. (1981). *Work stress and social support.* Reading, MA: Addison-Wesley.

Hypertension Detection and Follow-Up Program Cooperative Group. (1979). Five year findings of the Hypertension Detection and Follow-Up Program: I. Reduction in mortality of persons with high blood pressure, including mild hypertension. *Journal of the American Medical Association, 242,* 2562–2571.

Jenkins, R., Mann, A. H., & Belsey, E. (1981). The background, description, and use of a short interview to assess stress and social support. *Social Science and Medicine, 15* (Pt. E, 3), 195–203.

Kaplan, A. (1977). *Social support: The construct and its measurement.* Unpublished bachelor of arts thesis, Brown University, Providence, RI.

Kaplan, B. H. (1975). Toward further research on family and health. In B. H. Kaplan & J. Cassel (Eds.), *Family and health: An epidemiological approach* (pp. 89–100). Chapel Hill: University of North Carolina, Institute for Research in Social Science.

Kaplan, B. H., Cassel, J., & Gore, S. (1977). Social support and health. *Medical Care, 15,* 47–58.

Kaplan, R. M., & Saccuzzo, D. P. (1982). *Psychological testing. Principles, applications, and issues.* Monterey, CA: Brooks/Cole.

LaRocco, J. M., House, J. S., & French, J. R. P. (1980). Social support, occupational stress, and health. *Journal of Health and Social Behavior, 21,* 202–218.

Lin, N., Simeone, R., Ensel, W., & Kuo, W. (1979). Social support, stressful life events and illness: A model and an empirical test. *Journal of Health and Social Behavior, 20,* 108–119.

Lowenthal, M. F., & Haven, C. (1968). Interaction and adaptation: Intimacy as a critical variable. *American Sociological Review, 33*(1), 20–30.

McFarlane, A. H., Neale, K. A., Norman, G. R., Roy, R. G., & Streiner, D. L. (1981). Methodological issues in developing a scale to measure social support. *Schizophrenia Bulletin, 7,* 90–100.

Medalie, J. H., & Goldbourt, U. (1976). Angina pectoris among 10,000 men: II. Psychosocial and other risk factors as evidenced by a multivariate analysis of a five year incidence study. *American Journal of Medicine, 60,* 910–921.

Miller, P. M., Inghan, J. G., & Davidson, S. (1976). Life events, symptoms and social support. *Journal of Psychosomatic Research, 20,* 515–522.

Moos, R. H. (1981). *Work Environment Scale manual.* Palo Alto, CA: Consulting Psychologists Press.

Moos, R. H., & Moos, B. S. (1981). *Family Environment Scale manual.* Palo Alto, CA: Consulting Psychologists Press.

Myers, J., Lindenthal, J. J., & Pepper, M. P. (1975). Life events, social integration, and psychiatric symptomatology. *Journal of Health and Social Behavior, 16,* 421–427.

Norbeck, J. S., Lindsey, A. M., & Carrieri, V. L. (1981). The development of an instrument to measure social support. *Nursing Research, 30,* 264–269.

Nuckolls, K. B., Cassel, J., & Kaplan, H. (1972). Psychosocial assets, life crisis, and prognosis of pregnancy. *American Journal of Epidemiology, 95,* 431–441.

Porrit, D. (1979). Social support in crisis: Quantity or quality. *Social Science and Medicine, 13*(6A), 715–721.

Procidano, M. E., & Heller, K. (1983). Measures of perceived social support from friends and from family: Three validation studies. *American Journal of Community Psychology, 11*(1), 1–24.

Renne, K. S. (1974). Measurement of social health in a general population survey. *Social Science Research, 3,* 25–44.

Sarason, B. R., Shearin, E. N., Pierce, G. R., & Sarason, I. G. (1987). Interrelationships of social support measures: Theoretical and practical implications. *Journal of Personality and Social Psychology, 52,* 813–832.

Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The Social Support Questionnaire. *Journal of Personality and Social Psychology, 44*(1), 127–139.

Sarason, I. G., & Sarason, B. R. (1985). *Social support: Theory, research, and applications.* Boston: Martinus Nijhoff International.

Sarason, I. G., Sarason, B. R., Shearin, E. N., & Pierce, G. R. (in press). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships.*

Schaefer, C., Coyne, J. C., & Lazarus, R. S. (1981). Health related functions of social support. *Journal of Behavioral Medicine, 4,* 381–406.

Schafer, L. C., McCaul, K. D., & Glasgow, R. E. (1984). *Supportive and nonsupportive family behaviors: Relationships to adherence and metabolic control in persons with Type I diabetes.* Unpublished manuscript, North Dakota State University, Fargo.

Stokes, J. P. (1983). Predicting satisfaction with social support from social network structure. *American Journal of Community Psychology, 11,* 141–152.

Thoits, P. A. (1982). Conceptual, methodological, and theoretical problems in studying social support. *Journal of Health and Social Behavior, 23,* 145–159.

Turk, D. C. (1979). Factors influencing the adaptive process with chronic illness. In I. G. Sarason & C. D. Spielberger (Eds.), *Stress and anxiety* (Vol. 6). Washington, DC: Hemisphere.

Turner, R. J. (1981). Social support as a contingency in psychological well-being. *Journal of Health and Social Behavior, 22,* 357–367.

Wallston, B. S., Alagna, S. W., DeVellis, B. M., & DeVellis, R. F. (1983). Social support and physical health. *Health Psychology, 2,* 367–391.

Weiss, R. (1974). The provision of social relationships. In Z. Rubin (Ed.), *Doing unto others* (pp. 17–26). Englewood Cliffs, NJ: Prentice-Hall.

Wilcox, B. L. (1981). Social support, life stress, and psychological adjustment. *American Journal of Community Psychology, 9,* 371–386.