

Dimensions of functional social support and psychological symptoms

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SYNOPSIS In the summer following graduation a sample of 125 female college graduates (mean age = 28) completed Cohen & Wills' ISEL (1985) which includes scales measuring four social support functions: belonging (social companionship), appraisal (availability of confidants), tangible (instrumental), and self-esteem support. In the summer and fall subject status on two outcome scales was ascertained: the Psychophysiologic Symptom Scale and the Center for Epidemiologic Studies Depression Scale (CES-D). Reliability of the difference scores suggested that the ISEL scales do not measure entirely different constructs and the ISEL Self-esteem Scale is operationally redundant with the Rosenberg Self-esteem scale and the CES-D. Cross-sectional analyses indicated that the ISEL scales were related to symptoms. By contrast, standard longitudinal and prospective MLR analyses indicated that only the Belonging Scale was significantly related to future symptoms. The issues of confounding support with symptoms and the dimensionality of the subscales were discussed. The study suggests that specific functions of support take on greater importance during major life transitions and that any one supportive behaviour often serves multiple functions.

INTRODUCTION

In recent years there has been considerable interest in the relation of social support to physical and psychological health (Cobb, 1976, 1979; Gore, 1978; Henderson, 1981; Parry & Shapiro, 1986). In this connection, various measures of social support have been developed (House, 1980; Thoits, 1982; Cohen & Wills, 1985; Wethington & Kessler, 1986). Some investigators have employed structural measures of social networks (e.g. Berkman & Syme, 1979; Husaini *et al.* 1982). One purpose of these measures is to document the existence of specific social relationships such as marriage. A criticism levelled at social network measures is that they do not predict responsivity to stressors and, therefore, provide only indirect evidence of support (Turner, 1983; Cohen & Wills, 1985). That is to say, the existence of a relationship between two individuals (e.g. marriage) is not evidence that supportive behaviours are enacted.

Another type of support measure perhaps remedies the deficiency of structural measures,

that of support actually received (e.g. Barrera *et al.* 1981). A disadvantage of measures of received support, however, is their confounding with need for support (Cohen & Wills, 1985; Wethington & Kessler, 1986). The amount of support received is confounded with the extent to which an individual encounters stressful life situations and, consequently, becomes in need of support.

By contrast, a number of investigators (Thoits, 1982; Turner, 1983; Cohen & Wills, 1985; Wethington & Kessler, 1986) have advanced the view that measures of the perceived availability of social support have advantages relative to alternative network and received-support measures. Although it might be argued that perceived measures 'cognitize' the construct of support, Cohen & Wills (1985) and Turner (1983) advanced the view that support must be perceived as available in order to be effective. Perceived available support constitutes 'the soil on which the stressors fall' (Turner, 1983), or the pre-existing context in which the stressors occur. Compared to received-support or network measures, indices of the perceived availability of support are less susceptible to confounding with life events.

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Network measures are sensitive to 'exit' events (Paykel, 1978) since the loss of a network member – a spouse to divorce, for example – diminishes the size of the network. Perceived support measures are consistent with the view that several others can provide redundant support functions. Loss of a network member, therefore, need not mean lessened support, although reduced perceived support can occur with network loss. By contrast, Lieberman (1986) advanced the view that it is possible for some individuals to be well embedded in networks in which helping relationships work so smoothly that those individuals are 'not able to isolate how they turned to their kith and kin for help' (p. 463). For these individuals, perceived or received support measures will not work. Lieberman (1986), however, went on to write that 'little more than speculation exists on this area of social support' (p. 463).

A defect in perceived support measures is their potential for confounding with psychological symptoms. Network measures, by contrast, are less susceptible to this type of confounding since they can be documented as present or absent. Perceptions of the support available from others are likely to be influenced by psychological state. It is, therefore, important to control for pre-existing symptom levels when measuring perceived support.

Perceived available support is thought to serve a number of distinct functions (Cohen & Wills, 1985). For example, the availability of confidants for sharing sensitive information is different from having supporters who can be counted on for more tangible aid, like providing a lift to a doctor's appointment. The importance of differentiating among support functions is threefold: (1) support functions may exert different effects under varying circumstances; (2) the effectiveness of support functions may vary by the personal characteristics of support recipients; (3) the effects of different types of stressors may be mitigated, or buffered, by one support function rather than another. For example, when confronted with a severely threatening and uncontrollable life event, the availability of a confidant, in comparison to other types of support, may be particularly helpful to women (Brown & Harris, 1978).

A number of types of functions of perceived support have been discussed by investigators

(Cobb, 1976, 1979; Henderson, 1980; Cohen *et al.* 1985; House & Kahn, 1985). Cohen & Wills (1985) identified four distinct functions of support: appraisal (or confidant or informational) support; tangible (or instrumental) support; belonging (or companionship) support; self-esteem (or emotional or expressive) support. Appraisal support refers to informational help or advice in defining and coping with problems. Tangible support refers to the provision of material aid such as a needed loan or helpful physical effort as in painting a room. Belonging support refers to social companionship. Belonging support includes having others with whom to participate in a social activity like a sport or dining out. Support for self-esteem refers to others' communications indicating the person is valued. This includes letting the person know she is competent at some activity or has an admired trait such as a sense of humour.

In order to demonstrate that these conceptually different functions of support are related to health, it is important to demonstrate that the measures of the different support functions are distinguishable in practice (House & Kahn, 1985). In a study of factory workers, House (1980) was unable to differentiate between emotional and instrumental support. There are two possible explanations for his inability to differentiate these support functions: (1) he employed a small number of items; and (2) his items showed conceptual overlap.

Cohen *et al.* (1985) developed the Interpersonal Support Evaluation List (ISEL) which includes 10 to 12 items for each of four scales designed to measure conceptually distinct varieties of perceived functional support: appraisal, tangible, self-esteem, and belonging. Sarason *et al.* (1987) found that the four social support scales developed by Cohen *et al.* (1985) correlated highly with one another, suggesting that they measured the same construct. By contrast, one solution in a confirmatory factor analytical study conducted by Brookings & Bolton (1988) suggests that support measures developed by Cohen *et al.* (1985) reflect distinct support functions. Sarason *et al.* (1987) and Brookings & Bolton (1988) used slightly different versions of the ISEL.

Cohen *et al.* (1985) and Sarason *et al.* (1987) demonstrated an inverse relation between support as indexed by the ISEL scales and psycho-

logical symptoms. The studies reported in both papers, however, were cross-sectional. Cross-sectional designs cannot distinguish between two important alternative hypotheses: (1) reports of perceived support are influenced by pre-existing psychological symptoms; (2) social support affects well-being. A stronger test of the capacity of the social support scales to predict psychological symptoms would involve a longitudinal design. Longitudinal designs in the present context would involve measuring symptoms in individuals at two points in time, and allowing for Time 1 measures of support to predict Time 2 symptoms, controlling for pre-existing (Time 1) symptoms, a potential 'contaminant' of the support measures (as described earlier).

A prospective study constitutes a specific type of longitudinal design. The prospective study predicts Time 2 health status from a Time 1 factor like support; however, the study would begin with individuals who are *initially* low in symptoms (Kleinbaum *et al.* 1980; Blaney, 1985). The idea of the prospective design as applied in the present context is to predict, from among the individuals who are initially free of severe psychological distress (the parallel in medical research would be individuals who are initially free of the disease being investigated longitudinally), those who will later become distressed (or develop the disease) as a function of their initial status on a risk/protective variable like social support. In this vein, Depue & Monroe (1986) argued that individuals who are initially high in psychological symptoms and individuals who are initially low in symptoms are probably representative of different populations and should be treated separately in longitudinal research on risk factors (also see Monroe *et al.* 1986).

The present study constitutes an extension of the work of Cohen *et al.* (1985) and Sarason *et al.* (1987) linking dimensions of functional social support to psychological symptoms. As part of the study, the capacity of the ISEL scales to measure distinct support functions is examined. Three of the study's methodological strengths help to improve the quality of evidence linking functional support to psychological symptoms. First, the sample was reasonably representative of women who were recent college graduates and who chose to enter a profession. The average

age of the women, 28, extends research with the ISEL beyond the traditional undergraduate samples in which the scales have been examined previously. Secondly, the subjects were un-referred and unselected for the variables under study. Thirdly, psychological symptoms were measured twice, about four months apart. This measurement tactic permitted longitudinal and longitudinal-prospective analyses of the relation of the support dimensions to future symptoms, controlling for pre-existing symptoms.

METHOD

Subjects

Subject recruitment took place in the winter and spring of 1987 in upper-level, senior-year education classes offered at four popular New York City colleges well-known for supplying local school districts with teachers. The classes were identified by faculty informants as likely to include seniors who would graduate in June or August 1987 and obtain teaching jobs in September 1987. Students typically attend such classes en route to obtaining teacher certification. A recruiter identified the women by visiting the classes and asking the students to indicate whether or not they were graduating seniors. This procedure was more practical than relying on official (registrars') records because an intensive record check revealed numerous errors in the codes identifying graduating and non-graduating students. Since registrars' records would not be complete until September 1987, too late to facilitate pre-employment data collection, recruitment was most efficaciously conducted by identifying students in the targeted classes rather than by using officially enumerated lists.

A total of 152 women was recruited. The recruiter ascertained that more than 90% of the eligible students (those identifying themselves as scheduled to graduate that spring or summer) completed letters of informed consent in their college classrooms during the brief period, no more than ten minutes, allowed the recruiter by the cooperating instructors. The women completed questionnaires at Time 1, in the summer of 1987 ($N = 125$), and again at Time 2, in the fall approximately four months later ($N = 102$). The mean age of the sample in the summer, 27.9 (S.D. = 7.9), is consistent with local and national

Table 1. *Social demographic characteristics of the sample*

Characteristic	%
Race	
White	56.8
Black	18.4
Hispanic	20.8
Asian	2.4
Religion	
Protestant	16.8
Catholic	47.2
Jewish	24.8
Other	10.4
Marital status	
Married	25.6
Never married	60.8
Divorced	8.8
Separated	2.4
Widowed	2.4
Social class of origin	
Hol 1*	11.2
2	43.2
3	19.2
4	16.0
5	9.6

* Hol 1 to 5 represents Hollingshead's (1974) categories of social status. Category 1 represents the highest status and category 5, the lowest.

Table 2. *Alpha coefficients, means, and standard deviations of the scales*

Scale	Alpha coefficient	Mean	S.D.
Health			
CES-D†	0.90	11.32	9.23
Psychophysiological symptoms†	0.86	10.27	7.65
Rosenberg self-esteem‡	0.78	1.58	0.52
ISEL§			
Appraisal	0.83	35.40	4.58
Tangible	0.79	36.13	3.78
Belonging	0.79	34.69	4.92
Self-esteem	0.61	33.36	3.48

CES-D = Center for Epidemiologic Studies - Depression Scale.

† High scores reflect high symptom levels.

‡ High scores reflect *low* self-esteem.

§ High scores reflect high levels of support.

trends concerning the older ages of individuals currently obtaining baccalaureate degrees (Schonfeld 1991). The social demographic characteristics of the sample are presented in Table 1. As can be seen from the table, the sample was mostly white, but with substantial minority representation. Almost half the subjects were Roman Catholic. Most subjects were single and came from middle-class homes.

Instruments

The relevant data were collected by questionnaire. The summer instrument included demographic, social support, and health sections. Items in the demographic section assessed age, marital status, parents' work and educational history, religion, and race.

Social support section

The social support section consisted of the Interpersonal Support Evaluation List (ISEL, Cohen *et al.* 1985; Cohen & Wills, 1985) modified specially by Cohen (personal communication, 1986) for use in general population surveys. Cohen rewrote some of the items in the modified ISEL to apply to a wider set of circumstances than the original, more narrowly focused, college-student version. He replaced the two-choice true-false response format with a four-choice ('definitely true', 'probably true', 'probably false', and 'definitely false') format. In about half the items the true pole reflected increased support; in the other half the false pole reflected increased support. The ISEL yields four 10-item scales reflecting functions of perceived social support: tangible, belonging, appraisal, and self-esteem scales. This author made one addition to the ISEL. Since many New Yorkers do not drive, the tangible item 'It would be difficult to find someone who would lend me their car for a few hours' was supplemented by 'It would be difficult to find someone who would give me one or two driving lessons' for those subjects who did not drive.

Health section

The health section included items which assessed psychophysiological symptoms (the frequency of headaches, stomach-aches, constipation, etc.), depressive symptoms, and self-esteem. The psychophysiological symptom items were adapted from Cronkite & Moos (1984) and Dohrenwend *et al.* (1980). Depressive symptoms were assessed with the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). The response alternatives for all symptom items were the same (0 = less than one day per week; 1 = 1-2 days per week; 2 = 3-4 days per week; 3 = 5-7 days per week). A subset of the psychophysiological and depressive items were

Table 3. Correlations and reliabilities of the difference scores for the scales

Scale	1	2	3	4	5	6	7
1 CES-D	—	0.66	0.61	0.80	0.65	0.79	0.49
2 Psychophys. symptoms	0.65***	—	0.69	0.81	0.75	0.76	0.54
3 Rosenberg self-esteem	0.59***	0.42***	—	0.76	0.70	0.65	0.34
4 Appraisal	-0.33***	-0.17	-0.19*	—	0.60	0.55	0.58
5 Tangible	-0.37***	-0.29**	-0.28**	0.53***	—	0.48	0.49
6 Belonging	-0.40***	-0.27**	-0.38***	0.58***	0.60***	—	0.25
7 Self-esteem (ISEL)	-0.52***	-0.42***	-0.54***	0.34***	0.41***	0.60***	—

The correlation coefficients are below the diagonal and the reliabilities of the difference scores above the diagonal. Significance tests were two-tailed. * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

worded in a positive direction. Self-esteem was measured by Pearlin & Schooler's (1978) 6-item adaptation of Rosenberg's (1965) Self-esteem Scale. The Likert-type items were coded such that 'strongly agree' received a score of 1 and 'strongly disagree', a score 5. Five of the items were written in a positive direction. The one item written in the negative direction was placed in the middle of the scale to reduce response set. The self-esteem score was computed by assigning each subject the mean of the six items. All items designed to reduce response set were recoded after the data were collected and before scores were computed. Both the psychophysiological symptom and CES-D items were tried out in a prior study of distress in veteran teachers and found to have satisfactory psychometric properties (Schonfeld, 1990 *a, b*).

RESULTS

Aggregation of items and scale reliability

The psychophysiological symptom items which did not overlap with depressive symptoms were summed to form the Psychophysiological Symptom Scale. In order to minimize overlap with the CES-D, if a psychophysiological symptom item was related to sleep disturbance or psychomotor retardation it was omitted from the scale. The alpha coefficients, means, and standard deviations of the CES-D, Psychophysiological Symptom Scale, Rosenberg Self-esteem Scale, and four ISEL scales are reported in Table 2. Except for the ISEL scale measuring support for self-esteem, the scales' reliability coefficients ranged from 0.78 to 0.90.

Correlations among the scales

Table 3 presents the Pearson correlations among the seven Time 1 scales. The strongest correlations obtained in four domains: (1) between the CES-D and Psychophysiological Symptoms Scale; (2) among three of the four ISEL scales, appraisal, tangible, and belonging; (3) among the ISEL self-esteem support scale, the Rosenberg self-esteem scale, and the CES-D; (4) between the ISEL self-esteem and belonging scales.

Table 3 also presents the reliabilities of the difference scores (Cohen & Cohen, 1983) corrected for the direction of the scales. The reliability of difference scores reflects the extent to which two scales measure distinguishable constructs. A difference score is obtained by subtracting an individual's score on one measure from her score on another measure using comparable units (e.g. in standard scores). The reliability of a difference score 'tells us whether we can accurately classify subjects as, say, scoring high on one of the scales and low on the other' (Dohrenwend *et al.* 1980, p. 1232). Another advantage of the reliability of the difference scores is that the technique can be easily used with published data allowing for comparisons among data sets (see the Discussion section).

Dohrenwend *et al.* (1980) employed 0.50 as a minimally acceptable level for the reliability of difference scores because, at that level, half of the variance in difference scores reflects measurement error. By the same token, a difference-score reliability of 0.80, as in the case of the CES-D and ISEL appraisal scale, means that 80% of the variance in the difference scores reflects true score variance and only 20%, reflects measurement error. The difference-score

Table 4. Continuity of the CES-D and psychophysiological symptoms scale: frequencies of women with high and low symptom levels

	Fall CES-D	
	< 16	≥ 16
Summer CES-D < 16	62	13
≥ 16	11	13
$\chi^2_{(1)} = 10.91, P < 0.001$		

	Fall Psychophysiological Symptoms Scale	
	< 14	≥ 14
Summer PP Scale < 14	75	3
≥ 14	10	12
$\chi^2_{(1)} = 30.73, P < 0.001$		

Table 5. Correlations between predictor and outcome variables

Time 1 Predictor variables	Time 2 Outcome variables	
	CESD	PP symptoms
ISEL		
Appraisal	-0.20*	-0.21*
Tangible	-0.23*	-0.22*
Belonging	-0.37**	-0.36**
Self-esteem	-0.34**	-0.23*
CES-D	0.57**	0.40**
Psychophys. symptoms	0.57**	0.61**

Note. The significance tests of the correlation coefficients are two-tailed. * $P < 0.05$; ** $P < 0.001$.

reliabilities among the four ISEL scales suggest that the four scales did not measure highly distinct constructs. In other words, about half the variance in the difference scores among the ISEL scales was measurement error. The ISEL self-esteem support scale appeared to overlap with both the Rosenberg self-esteem scale and the ISEL belonging scale.

Continuity of symptoms

A score of 16 or greater on the CES-D is considered to be of clinical significance (Radloff, 1977; Breslau & Davis, 1986; Radloff & Locke, 1986). Adults with scores of 16 or greater on the CES-D are thought to be at increased risk for clinical depression. Table 4 indicates that more than half the women with scores above 16 on the

CES-D at Time 1 also exhibited high scores at Time 2. An arbitrary cut-point of 14 for the Psychophysiological Symptoms Scale was employed. The cut-point of 14, like the score of 16 on the CES-D, identified the upper quartile of women in the sample. Table 4 also indicates that more than half the women 'high' in psychophysiological symptoms at Time 1 continued to be highly symptomatic at Time 2. These analyses are consistent with the view that the sample seen at Time 2 included chronic and acute onset subgroups.

Multiple linear regression analyses

The zero-order correlations between each of the Time 1 predictor and Time 2 outcome variables used in the multiple linear regression (MLR) analyses are presented in Table 5. The table indicates that each Time 1 ISEL scale was significantly related to Time 2 symptoms. The strongest predictors of Time 2 symptoms, however, were Time 1 symptoms.

Two series of MLR equations were constructed. In each series of equations either the Time 2 (fall) CES-D or Psychophysiological Symptom Scale was regressed on its Time 1 (summer) analogue in one step. Then, in a second step *one* Time 1 social support measure was added to the equation. The samples used in each series of MLR equations were different. In the first series, the regression equations were conducted with all available subjects. The results of these regressions are found in Table 6. They constitute standard longitudinal analyses. The MLR analyses indicated that only the Belonging Scale predicted lower symptoms levels at Time 2. The R^2 increase associated with the belonging scale in each MLR equation in which the Time 1 symptom variable was entered first was 0.03 (above 0.34 when predicting Time 2 CES-D and above 0.37 when predicting Time 2 psychophysiological symptoms).

The above MLR data were submitted to a power analytical computer program (Nee & Schonfeld, unpublished). The power calculations revealed that, given the sample size, the power of the MLR analyses to detect an R^2 increase of 0.03 ranged from 0.46 to 0.48. The modest power of the analyses made the investigator wary of adding covariates to the MLR equations.

The second series of MLR equations was constructed such that women who were highly

Table 6. Multiple linear regression of the fall symptom scales on each support variable measured in the summer

ISEL Predictor variables	Time 2 Predicted variables					
	CES-D*			PP Symptoms†		
	B	Beta	P	B	Beta	P
Appraisal (A)	-0.08	-0.04	NS	-0.12	-0.09	NS
Tangible (T)	-0.14	-0.06	NS	-0.08	-0.05	NS
Belonging (B)	-0.36	-0.18	0.05	-0.24	-0.19	0.05
A + T + B	-0.28	-0.12	NS	-0.22	-0.13	NS
Self-esteem	-0.14	-0.06	NS	0.05	0.03	NS

In each regression equation, a fall symptom scale was regressed on one of the ISEL scales controlling for the summer version of the symptom scale.

* $N = 99$.

† $N = 100$.

Table 7. Multiple linear regression of the fall symptom scales on each support variable measured in the summer: all subjects initially low in symptoms

ISEL Predictor variables	Time 2 Predicted variables					
	CES-D*			PP Symptoms†		
	B	Beta	P	B	Beta	P
Appraisal (A)	-0.01	-0.00	NS	-0.11	-0.11	NS
Tangible (T)	0.03	0.01	NS	-0.16	-0.11	NS
Belonging (B)	-0.50	-0.28	0.01	-0.20	-0.18	0.10
A + T + B	-0.28	-0.12	NS	-0.23	-0.17	NS
Self-esteem	-0.27	-0.12	NS	-0.13	-0.09	NS

In each regression equation, a fall symptom scale was regressed on one of the ISEL scales controlling for the summer version of the symptom scale.

* $N = 75$.

† $N = 80$.

symptomatic at Time 1 were excluded (CES-D ≥ 16 or psychophysiological symptoms scale ≥ 14). These results should be interpreted with added caution because of the reduced size of the sample. The second series of equations, however, reflect a 'prospective' analysis. This latter set of equations was constructed in view of the argument that women who, initially, were highly symptomatic were likely to be different in terms of chronicity from women who were initially low in symptoms. The results of the second series of regression analyses are presented in Table 7.

When women with the highest levels of Time 1 depressive symptoms were excluded from the

analyses, the effect size of the belonging scale on Time 2 CES-D was greater than when all available subjects were included. The R^2 increase associated with the belonging scale in the MLR equation was 0.07 (above 0.18 in step 1). No parallel change in the effect size was found in the MLR equation predicting Time 2 psychophysiological symptoms. In both series of analyses, a created scale that was the average of the appraisal, tangible, and belonging scales did not predict later symptoms. ISEL self-esteem was not included in the average because the earlier described reliability data suggest the self-esteem scale is too much of a symptom measure.

Attrition

Subjects who completed the summer but not the fall questionnaire were compared to subjects who completed both. As expected, subjects lost to attrition tended to be more symptomatic than subjects who completed both instruments. The attrition and longitudinal groups differed significantly on the summer Psychophysiological Symptom Scale ($M_a = 12.12$ v. $M_1 = 8.86$, $t(122) = 2.00$, $P < 0.05$). The difference between the summer CES-D means for the two groups was non-significant ($M_a = 13.41$ v. $M_1 = 10.86$, $t(122) = 1.17$), but in the expected direction. The groups did not differ on the Rosenberg scale ($M_a = 1.49$ v. $M_1 = 1.60$, $t(122) = 0.85$). The groups did not differ significantly on any social support scale: tangible, $M_a = 35.05$ v. $M_1 = 36.36$, NS; belonging, $M_a = 34.76$ v. $M_1 = 34.68$, NS; appraisal, $M_a = 34.04$ v. $M_1 = 35.69$, NS; self-esteem, $M_a = 33.48$ v. $M_1 = 33.33$, NS ($0.08 < |t(122)| < 1.53$). The longitudinal group tended to have a higher proportion of whites (60% v. 43%, $\chi^2_{(1)} = 1.55$, NS) and married subjects (29% v. 4%, $\chi^2_{(1)} = 5.05$, $P < 0.05$). The groups did not differ on social class of origin ($M_a = 2.78$ v. $M_1 = 2.69$, $t(122) = 0.41$).

DISCUSSION

The results indicate that the appraisal, tangible, and belonging ISEL scales were moderately correlated with each other. The borderline nature of the reliability of the difference scores suggests that the ISEL scales were not multidimensional. The reliability of the difference scores indicates that the ISEL self-esteem support scale and Rosenberg's self-esteem scale measure the same

construct. Regression analyses capitalizing on the longitudinal nature of the data underlined the confounding of pre-existing symptoms with the perceived support scales. The regression analyses indicated that only the belonging scale was related to later symptom levels.

The study had a number of limitations. First, the generalizability of the findings is limited because the sample consisted of female college graduates. Given the sample size, the present study cannot elucidate the intriguing question of how functional support affects the prognosis of individuals who, initially, are highly symptomatic. Secondly, the study lacked network and received support measures that might be linked to perceived support. Thirdly, since severely threatening fateful life events were rare in the sample – there were eight in all – the study did not provide an optimum context for examining stress buffering effects.

The findings revealing an absence of clearly separable social support dimensions reflected in the ISEL scales are consistent with a number of research findings and are unlikely to be idiosyncratic to the present sample. First, I computed the reliability of the difference scores using the average alpha coefficients and the correlation matrices, published by Cohen *et al.* (1985, p. 80), for a series of studies involving different college-student samples administered either of two versions of the ISEL. About half the computations did not exceed 0.50. Secondly, I computed the reliabilities of the difference scores for the correlations obtained by Sarason *et al.* (1987, p. 824) using the reliability estimates reported by Cohen *et al.* (1985) – Sarason *et al.* (1985) did not report reliability coefficients. The reliability of the difference scores for each pair of ISEL subscales was well below 0.50.

Thirdly, in a confirmatory factor analytical study of a college-student sample, Brookings & Bolton (1988) obtained a four-factor model that fits the ISEL scales. An alternative model that included one broad second-order factor, however, also fits the data. The alternative model was consistent with cross-scale correlations that ranged from moderate to large (e.g. belonging-tangible $r = 0.84$). In fact, the correlations obtained by Brookings & Bolton (1988) were greater than those obtained by Sarason *et al.* (1987). This difference reflects the greater amount of variance to be expected from Brook-

ings & Bolton's (1988) four-alternative version of the ISEL compared to the two-alternative version used by Sarason *et al.* (1987). Finally, the overlap in the CES-D and the ISEL self-esteem scale is consistent with findings obtained in general population samples in which psychiatric symptom scales were administered (Dohrenwend *et al.* 1986). It is suggested that the ISEL self-esteem scale is partly a symptom measure and partly a measure of communications from companions, which explains its relatively close relation to both the CES-D and the belonging scale.

It is possible that the overlap in the scales mirrors a characteristic inherent in social support, namely, that when one type of support is explicitly mobilized a conceptually different type of support is also mobilized, either explicitly or tacitly (see Sarason *et al.* 1987). For example, if a person responds to a tangible-support item on the ISEL by agreeing that supporters are available who can be relied upon for an early-morning ride to the airport, it is likely that those supporters have an affective tie to the respondent. By the same token, the supporter who goes out of the way to give a friend a lift to the airport will probably have a few bits of advice to convey about the journey. The individual supplying instrumental support is, thus, also likely to supply emotional and informational support as well as companionship.

The findings underscore the importance of controlling for the confounding of the ISEL scales with preexisting depressive symptoms. The reliability of the difference coefficients indicated that the self-esteem scale was the most confounded with preexisting symptoms. The findings reaffirm the inherent invalidity of drawing conclusions about the impact of social support on depressive symptoms from cross-sectional data. Although all the social support scales, on the zero-order level predicted later symptoms, only one scale, the belonging scale, attained conventional levels of significance in the MLR analyses when prior symptoms were controlled.

The effect size of the belonging scale on the Time 2 CES-D, with the Time 1 CES-D controlled, was considerably larger when the sample was limited to women who initially were relatively asymptomatic ($B = -0.50$; beta = -0.28) than when women with the full range

of Time 1 symptom scores were included ($B = -0.36$; $\beta = -0.18$). This finding is in keeping with the results of Monroe *et al.* (1986) who found reasonably strong effects for marital support on later depressive symptoms when the sample was limited to women who initially were relatively asymptomatic; when they examined the entire sample the effect size for marital support was smaller. Both sets of findings highlight the importance of studying individuals who are initially low in symptoms (Monroe & Steiner, 1986). Social support may act differently for individuals with and without chronic psychological disorders.

The findings are consistent with the views of Sullivan (1953) on the overarching importance for mental health of fulfilling a need for companionship; however, the question of why a measure of companionship, in contrast to other measures, is related to lower levels of future symptoms remains. Because research on the role of social ties in the context of major life transitions is just beginning (see Salzinger, *in the press*), I speculate that the availability of companionship may assume greater importance than other aspects of social support in the context of the college graduate's transition into the world of work. Social companionship may exert nonspecific protective effects for individuals making a transition into a work role that is sharply different from, and more aversive than, the role of the college student. Many of the women became teachers in New York City public schools, a work role that exposes its incumbent to numerous difficulties (Schonfeld, 1990a). In addition, companionship may be an important bridge linking a work role that has new and different responsibilities and to the former, more settled, role of college student.

In the context of some other life transition, different aspects of support may become more important. For example, in the context of decisions on whether or not to pursue a particular medical treatment, informational support may be especially helpful. Future research on the influence of support on individuals making major life transitions and decisions promises to be important. The yield from such research will depend on the soundness (e.g. confounding with symptoms, separability of dimensions) of the measurement instruments employed in assessing support functions.

Preparation of this paper was supported by NIOSH/CDC grants nos. 1 01 OH02571-01 and -02 and PSC-CUNY Award Program grants nos. 6-67401 and 6-68419. An earlier version of the paper was presented at the Biennial Conference on Research and Action, 24 June 1989 in East Lansing, MI. City College and the City University of New York provided the author with excellent data processing facilities. Appreciation is extended to Sheldon Cohen for making available to me his most recent version of the ISEL. I thank James Johnson, Pearl Knopf, Howard Everson, and three anonymous reviewers for their comments on an earlier draft of the paper. The cooperation of the participants is gratefully acknowledged.

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