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MEASURING THE FUNCTIONAL COMPONENTS OF SOCIAL SUPPORT¹

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MEASURING THE FUNCTIONAL COMPONENTS OF SOCIAL SUPPORT

In the last several years, we have been interested in the role social supports play in protecting people from the pathogenic effects of stress. By social supports, we mean the resources that are provided by other persons (cf. Cohen & Syme, 1985). Although others have investigated and in some cases found evidence for a "buffering" hypothesis--that social support protects persons from the pathogenic effects of stress but is relatively unimportant for unexposed individuals, there are difficulties in interpreting this literature. First, there are almost as many measures of social support as there are studies. Hence it is difficult to compare studies and to determine why support operates as a stress buffer in some cases, but not in others. Second, in the vast majority of work, support measures are used without regard to their psychometric properties or their appropriateness for the question under study. For example, studies using measures assessing the structure of social networks (e.g., how many friends do you have?) are seldom distinguished from those addressing the functions that networks might serve (e.g., do you have someone you can talk to about personal problems?). In fact, in many cases, structural and functional items are thrown together into single support indices

resulting in scores that have little conceptual meaning. In the context of the limitations of earlier work, we developed our own social support instrument to study the support buffering process. This chapter describes the questions we wanted to address, the assumptions we needed to make in order to develop an instrument that addressed these questions, the instrument itself, its psychometric properties, and data on the relationship between support and well-being that has been collected by ourselves and others with this instrument.

Scale selection. The issue of how to choose a social support measure for any particular study is a complex and controversial one that cannot be fully addressed in this chapter (cf. House & Kahn, 1985). What is central, however, is that the instrument provides the information necessary to answer the question that is being posed. In general, psychologists interested in the relationship between social support and health pose questions about the cognitive and/or behavioral mechanisms that link the demographic fact that one has friends, relatives and acquaintances, with improvement in health and well-being. These mechanisms are presumed to be elicited by resources provided by one's social network. Hence social support instruments used in studies posing psychological questions need to assess the functions that others may serve.

Although some of the early studies assessed individual support functions (confidant measures are the principle example) and others used indices combining multiple functions into one index, there is little work comparing the relative impact of different kinds of support functions on well-being. In the case of the buffering issue, it seemed plausible that only certain kinds of resources provided by others would operate as buffers. In fact, our own theoretical work argues that one's interpersonal relationships function as stress buffers only when the type of support resources that are provided by one's relationships match the coping requirements elicited by the stressor(s) (Cohen & McKay, 1984). For example, while a person who is temporarily out of a job may benefit from a monetary loan, this same resource would be totally ineffective as a response to the death of his or her child. This stressor-support specificity model suggests the importance of assessing a range of available support resources.

Our first task was to develop a typology of functions served by interpersonal relationships. In particular, we were concerned with ways in which others could affect persons' responses to stressful events. Four categories of support functions were proposed: tangible support, appraisal support, self-esteem support and belonging support. (See theoretical justification for these categories in Cohen & McKay, 1984). Tangible support refers to instrumental aid; appraisal support to the availability of someone to talk to about one's problems; self-esteem support to the availability of a positive comparison when comparing oneself

with others; and belonging support to the availability of people one can do things with.

Perceived or objective support? The next question was whether we were interested in the objective existence of these interpersonal resources or subjects' perceptions that they would be available if needed. Our assumption was that the buffering effect of social support is primarily cognitively mediated, that is, support operates by influencing one's appraisal of the stressfulness of a situation (cf. Cohen & McKay, 1984; House, 1981). Potentially stressful events could be assessed as less stressful or even benign if support affected interpretation of the threat the stressor posed, influenced perceived ability to cope, or inflated self-concept (cf. Lazarus, 1977). As a consequence, a measure of perception of the availability of support would be a more sensitive indicator of its buffering effects than objective existence of that resource (e.g., Blazer, 1982). This is so because the appraisal of stress is based on a person's beliefs about available support as opposed to its actual availability.

Below we describe the Interpersonal Support Evaluation List (ISEL), the instrument we developed in response to the questions and assumptions discussed above. We also discuss its psychometric properties, and present data on the relationship between these functions and health behavior and symptomatology. Our discussion emphasizes the role played by each of the support functions in the buffering process.

Interpersonal Support Evaluation List [ISEL]

The ISEL consists of a list of 40 (48 in college student form) statements concerning the perceived availability of potential social resources. The items are counterbalanced for desirability; that is half of the items are positive statements about social relationships (e.g., "There are several different people with whom I enjoy spending time."), while half are negative statements (e.g., "I feel that there is no one with whom I can share my most private worries and fears."). Items were developed on theoretical grounds to cover the domain of supportive social resources that could potentially facilitate coping with stressful events. Respondents were asked to indicate whether each statement is "probably true" or "probably false" about themselves. The ISEL is scored simply by counting the number of responses indicating support. (See appendix for key.)

The ISEL was designed to assess the perceived availability of the four separate functions of social support discussed above as well as providing an overall functional support measure. Thus, the items which comprise the ISEL fall into four 10-item (12-item in student form) subscales. The "tangible" subscale is intended to measure perceived availability of material aid; the "appraisal" subscale, the perceived availability of someone to

Functional Components

Means and Standard Deviations

The general population form of the ISEL was administered three times to the Oregon Smoking sample with intervals of six weeks and six months. Across the three measurement periods the mean scores for all respondents ranged from 32.9 to 34.4 with standard deviations ranging from 4.96 to 5.98. There is a tendency for females to have slightly higher scores than males but this difference only occasionally reached significance. Mean scores for the College student form of the ISEL for all respondents (Oregon studies II and III and Delaware study) range from 34.33 to 38.80. The only available standard deviations are 7.3 (Oregon II study) and 7.5 (Oregon III study). Again there is a tendency for females to have higher scores than males.

Validity of the ISEL Scales

Correlations between the ISEL and other social support measures. As noted above, the ISEL was designed to provide a measure that was somewhat different than any of the existing social support scales. Even so, we assumed that the ISEL would moderately correlate with the existing structural, past support, and perceived availability measures. That in fact was the case for both student and general population forms.

The student scale was found to correlate .46 with a measure of the perceived receipt of social support during the last month, the Inventory of Socially Supportive Behaviors (ISS; Barrera, Sandler & Ramsay, 1981), in both the Oregon I and the Arizona State studies. It also correlated .62 with the involvement and emotional support subscales of the Moos University residence environment scale, and .39 with network size in the Guelph study.

The general population scale correlated .30 with the total score of the Moos Family Environment Scale (FES; Moos & Moos, 1981) in the CMU II study. Correlations with subscales of the FES were .21 with expressiveness, .46 with cohesiveness, and .19 with conflict. In the same study, the general population ISEL also correlated .46 with number of close friends and .42 with number of close relatives. The general population ISEL also correlated .31 with the Partner Adjustment Scale (Mermeistein, Lichtenstein & McIntyre, 1983)-- a measure of the quality of marital or living partner relationships, in the Oregon Smoking study.

Correlations with Self-esteem Measures. Since trait self-esteem is strongly influenced by the feedback one receives from others, we expected that the self-esteem support subscale would be highly correlated with trait self-esteem. Although it is likely that just having a social network contributes to self-esteem, relatively small correlations were expected between self-esteem and the other ISEL subscales. In the Irvine study, the self-esteem support subscale from the general population form

76 S. Cohen, R. Mermelstein, T. Kamarck, and H. Hoberman talk to about one's problems; the "self-esteem" subscale, the perceived availability of a positive comparison when comparing one's self with others; and the "belonging" subscale, the perceived availability of people one can do things with. Subscale independence was maximized by selecting items (from a larger pool) which were highly correlated with items in their own subscale and at the same time minimally correlated with other subscales. A copy of the general population form of the ISEL appears in the appendix. The college student version of the scale is published in Cohen & Hoberman (1983).

Description of Samples

Data presented in this chapter derive from seven studies employing the student version of the ISEL and five studies employing the general population version. Three of the studies using the student scale were conducted by the authors at the University of Oregon. Subjects in Oregon studies I (27 males and 43 females) and III (60 males and 52 females) were undergraduate students enrolled in introductory Psychology classes. Subjects in Oregon study II (120 males and 210 females) were freshman undergraduates living in university dormitories.

The remaining studies using the student form of the ISEL with undergraduates are the work of Michael Scheier (other data from this sample reported in Scheier & Carver, 1983) at Carnegie-Mellon University (CMU study I; 79 males and 62 females), Larry Cohen and his colleagues (Cohen, McGowan, Fookas & Rose, in press) at the University of Delaware (Delaware study; 47 males and 45 females), Donald Graham & Ben Gottlieb (1983) at the University of Guelph (Guelph study; 59 males and 59 females), and Irwin Sandler (1982) at the Arizona State University (Arizona State study; 118 subjects). Four other studies used the general population scale with student samples. This work was done by Maryann Jacobi at the University of California at Irvine (Irvine study; 31 females), and the authors at Carnegie-Mellon University (CMU II; 154 males and 62 females) and the University of Oregon (Oregon IV; 14 males and 18 females). Finally, a study of a nonstudent (community) sample going through the Oregon Smoking Cessation program was done by Robin Mermelstein and her colleagues (Mermelstein, Cohen & Lichtenstein, 1983) and will be referred to as the Oregon Smoking Study (27 males and 37 females).

PSYCHOMETRIC PROPERTIES OF ISEL SCALES

This section provides detailed information on the psychometric properties of the ISEL and its subscales. Readers who are not interested in the technical characteristics of the scale are advised to skip ahead to the section entitled "ISEL as a Predictor of Health and Health Behavior".

not presented in regard to the psychometric validity of the scale but rather to illustrate the stability of support across time and some of the patterns of shifts in support that can occur across time for different samples. The student scale was taken twice by about 1/3 (122) of the Oregon II sample approximately six months apart. This sample is particularly interesting since it consists of college freshman who, for the most part did not have social networks at school when the first scale was completed. For this sample, the correlation for the two testings for the total scale was .72. Correlations for the subscales were .73 for tangible support, .66 for self-esteem support, .47 for belonging support and .45 for appraisal support. One interpretation of these data is that tangible support is largely provided by students' parents and hence is stable over time. Similarly, self-esteem support is largely affected by stable personality factors that lead one to see oneself as better off than others. However, appraisal and belonging support are more dependent on the existence of a proximate social network which changes substantially during the first six months of college. These changes in support level for those placed in a new social environment suggest that at least the appraisal support and belonging support scales are not just proxies for some underlying personality factor but in fact reflect changes in available support.

The general population form was also taken six months apart by persons in the Oregon Smoking Study. Six month test-retest correlations were .74 for the entire ISEL, .49 for the tangible subscale, .54 for self-esteem, .68 for belonging, and .60 for appraisal. There is a striking difference in comparing these six month correlations to the six month correlations reported above for the student sample. While students showed the most stability for tangible and self-esteem support, the smoking sample showed the least stability in these two areas. Less stability in tangible support than found in the student sample is easy to understand. As noted above students probably obtain most of their tangible support from their parents. This older sample may well lack such a stable source of material aid. Reasons for the shifts in self-esteem support are less clear. One might argue that success or failure in the smoking treatment program and followup may alter self-esteem level. In any case, these data suggest that self-esteem support may not be influenced as much by stable personality characteristics as suggested above.

In short, long-term test-retest data suggest that support changes over time and that the stability of particular types of social support may differ across populations. Further data on long-term retests is especially important in light of the possibility that most support findings are subject to interpretations that suggest they are artifactual; i.e., actually attributable to stable personality factors that cause both support and health outcomes (cf. Cohen & Syme, 1985).

of the ISEL was correlated .74 ($p < .001$) with the Rosenberg Self-esteem Scale. When one overlapping item was dropped from the ISEL, the correlation was .58 ($p < .001$). Although the self-esteem support subscale was not used in the Guelph study, they report that tangible, belonging and appraisal support (student scale) were correlated with a trait self-esteem measure .14, .32 ($p < .001$), and .26 ($p < .001$) respectively.

Correlations with self-disclosure. Since the appraisal support subscale assesses the availability of interpersonal transactions which allow self-disclosure, we expected that the appraisal scale would correlate with a self-disclosure measure. Again, the remaining scales were expected to show some association as well but of a lesser magnitude. In the Guelph study, the desire for verbal intimacy subscale of the Colwill and Spinner Privacy Measure correlated .40 ($p < .001$) with the appraisal scale and .08 and .24 ($p < .01$) with the tangible and belonging scales respectively.

Test-retest and Internal Reliability of the ISEL Scales

Adequate internal and test-retest reliabilities have been found for both student and general population scales and subscales in several samples. Internal reliability (Alpha Coefficient) of the total student ISEL has been reported as low as .77 (Oregon I study) and as high as .86 (CMU-I study). Ranges for student ISEL subscales are .77-.92 for appraisal, .60-.68 for self-esteem, .75-.78 for belonging and .71-.74 for tangible support.

Internal reliability (Alpha Coefficient) of the total general population ISEL ranges from .88 (CMU II study) to .90 (Oregon Smoking Study and Oregon IV study). Ranges for general population ISEL subscales are .70-.82 for appraisal, .62-.73 for self-esteem, .73-.78 for belonging, and .73-.81 for tangible support.

The student scale was taken twice with a four week interval by the CMU I sample. Correlations for the two periods were .87 for the entire scale, .87 for appraisal, .82 for belonging, .71 for self-esteem and .80 for tangible support. The general population version was taken twice by students in the Oregon IV study. The interval between testings was two days. For this sample, the test-retest correlation for the ISEL was .87. Correlations for subscales were .78 for tangible support, .74 for self-esteem support, .67 for belonging support and .84 for appraisal support. A six week interval between retests of the general population scale is available in the smoking sample. These data also suggest a reasonable stability across time. The test-retest correlations were .70 for the ISEL, .63 for appraisal, .65 for belonging, .68 for self-esteem and .69 for tangible support.

Long-interval (6 month) test-retests are also available for both the student and general population scales. These data are

Discriminant validity

The ISEL and social desirability. In the Oregon IV study, the Crowne-Marlowe Social Desirability Scale was administered along with the General Population ISEL. Social desirability was not correlated with the ISEL or any of its subscales.

Social support or social anxiety. Even prospective studies of the relationship between social support and various outcomes do not eliminate the possibility that the support concept as measured in the study is not merely a proxy for a personality factor such as social anxiety or social skills. For example, it is possible that persons who are socially anxious have difficulty forming and maintaining interpersonal relations and are generally anxious, depressed and otherwise psychologically impaired. Hence what appears to be an effect of social support may merely be an effect of a highly correlated personality trait. In the Oregon II sample, we attempted to determine whether the ISEL accounts for significant variance in the prediction of depression after controlling for social anxiety as measured by the Social Anxiety and Distress Scale (SADS) (Watson & Friend, 1969). Hence we partialled social anxiety out of the correlation between the ISEL and depressive symptomatology. The remaining correlation was -.19, $p < .001$. Hence the ISEL accounted for significant variance in the prediction of depression above and beyond social anxiety.

ISEL AS A PREDICTOR OF HEALTH AND HEALTH BEHAVIOR

The ISEL has been used in studies simply examining the relationship between social support and well-being as well as in studies specifically investigating the buffering hypothesis, the idea that social support protects persons from the pathogenic effects of stress but is unimportant for unexposed individuals. These data are reported below to both bolster the theoretical considerations on which the scale is based as well as providing further evidence for the validity of the scale itself.

Correlations between the ISEL Scales and Psychological Symptomatology

Table 2 reports correlations between the ISEL scales and psychological symptomatology from seven studies. The symptom measures used in these studies include the Center for Epidemiological Study of Depression Scale (CES-D), the Beck Depression Inventory (BDI), the Langner Symptom Checklist (L-22), and the Kobassa symptom scale. As is apparent from the table, increases in the ISEL total score are consistently associated with decreases in symptomatology. The self-esteem subscale is most strongly associated with symptom reporting, with the tangible subscale the least predictive. It is possible that the

Correlations between Subscales

One of our major goals in developing the ISEL scales was to create four subscales that were reasonably independent of one another, i.e., subscales that did not measure the same thing. Table 1 presents the correlations between the subscales of both the student and general population ISEL as reported in a number of studies. In general, these, correlations are in the .30-.50 range indicating a moderate degree of independence. Subscales on the general population scale tend to be more highly intercorrelated than those on the student scale. It is noteworthy that complete independence of these scales is neither desirable nor possible since people receive different kinds of resources from the same persons in their network.

TABLE 1
Correlations Between Subscales of the ISEL

	Student Scale			
	OR I	OR II	OR III	CHU I DE
Appraisal-Belonging	.48	.51	.36	.46 .56
Appraisal-Tangible	.26	.41	.30	.42 .54
Appraisal-Self-Esteem	.19	.33	.38	.36 .46
Belonging-Tangible	.56	.49	.51	.42 .45
Belonging-Self-Esteem	.26	.46	.50	.48 .40
Tangible-Self-Esteem	.19	.30	.48	.24 .43
General Population Scale				
	Smoking CHU II Irvine OR IV			
Appraisal-Belonging	.56	.53	.57	.73
Appraisal-Tangible	.40	.50	.44	.31
Appraisal-Self-Esteem	.50	.48	.51	.67
Belonging-Tangible	.61	.59	.81	.70
Belonging-Self-Esteem	.61	.64	.78	.61
Tangible-Self-Esteem	.46	.46	.76	.33

depressive symptomatology. In sum, there is substantial evidence for a relationship between the ISEL and psychological symptomatology. Moreover, a significant part of this relationship can not be attributed to the effect of symptomatology on support level. The ability of the ISEL to predict subsequent changes (i.e., controlling for initial level) in depressive symptomatology also indicates that the ISEL is not itself measuring symptomatology.

Correlations between the ISEL Scales and Physical Symptomatology

Six studies (five with the student scales and one with the adult scale) report correlations between the ISEL and self-reported physical symptoms. All of these studies used the 39-item Cohen-Hoberman Inventory of Physical Symptoms (CHIPS; Cohen & Hoberman, 1983). As apparent from table 3, while there are only occasional small correlations between the ISEL and physical symptomatology in the student samples, moderate cross-sectional correlations are found in the community sample. However, prospective data analysis from the CMU I study and the Oregon smoking study both indicate a small relationship between the general population ISEL and physical symptomatology. In the Oregon Smoking study, correlations between the pretreatment ISEL and physical symptomatology three weeks later and six weeks later with pretreatment physical symptomatology partialled out were $-.21$ ($p < .06$) and $-.19$ ($p < .07$) respectively. In the CMU study, the same partial correlation with a four week interval was $-.18$ ($p < .05$). In sum, the ISEL does predict changes in physical symptomatology,

TABLE 3

Correlations between ISEL and Physical Symptomatology

ISEL	Student Scale				SCALE
	OR I	OR II	OR III	CMU I DE	
Appraisal	-.08	-.01	-.09	-.06	-.39*
Belonging	-.10	-.10	-.16	-.17	-.23*
Self-Esteem	-.07	-.19*	-.22*	-.07	-.26*
Tangible	-.12	-.01	-.22*	-.06	-.11

*p < .05

TABLE 2

Correlations between ISEL and Psychological Symptomatology

	Student Scale				BDI L-22
	CES-D OR I	CES-D OR II	CES-D OR III	BDI CMU I DE	
ISEL	-.47	-.37	-.43	-.38	-.51
Appraisal	-.33	-.23	-.28	-.23	-.18
Belonging	-.38	-.35	-.30	-.34	-.36
Self-Esteem	-.37	-.43	-.45	-.43	-.30
Tangible	-.22	-.14	-.29	-.14	-.10

	General Population Scale	
	CES-D CMU II	HOPKINS IRVINE
ISEL	-.52	-.57
Appraisal	-.29	-
Belonging	-.48	-
Self-Esteem	-.53	-
Tangible	-.39	-

-.60

self-esteem-symptomatology correlation is inflated by an overlap between what is measured by the self-esteem support scale and the symptom measures. These correlations are all cross-sectional and hence direction of causality is not implied.

In addition to the cross-sectional correlations reported in the table, there have been two longitudinal studies of the relationship between the ISEL and psychiatric symptomatology. Analysis of the Delaware study data indicated a significant negative relationship between the ISEL and both depressive (BDI) and psychiatric (L-22) symptomatology at the second testing with Time 1 criteria partialled out. Moreover, a prospective analysis of the CMU I data, partialling out time 1 depression, indicated a $-.21$ ($p < .05$) correlation between Time 1 social support and Time 2

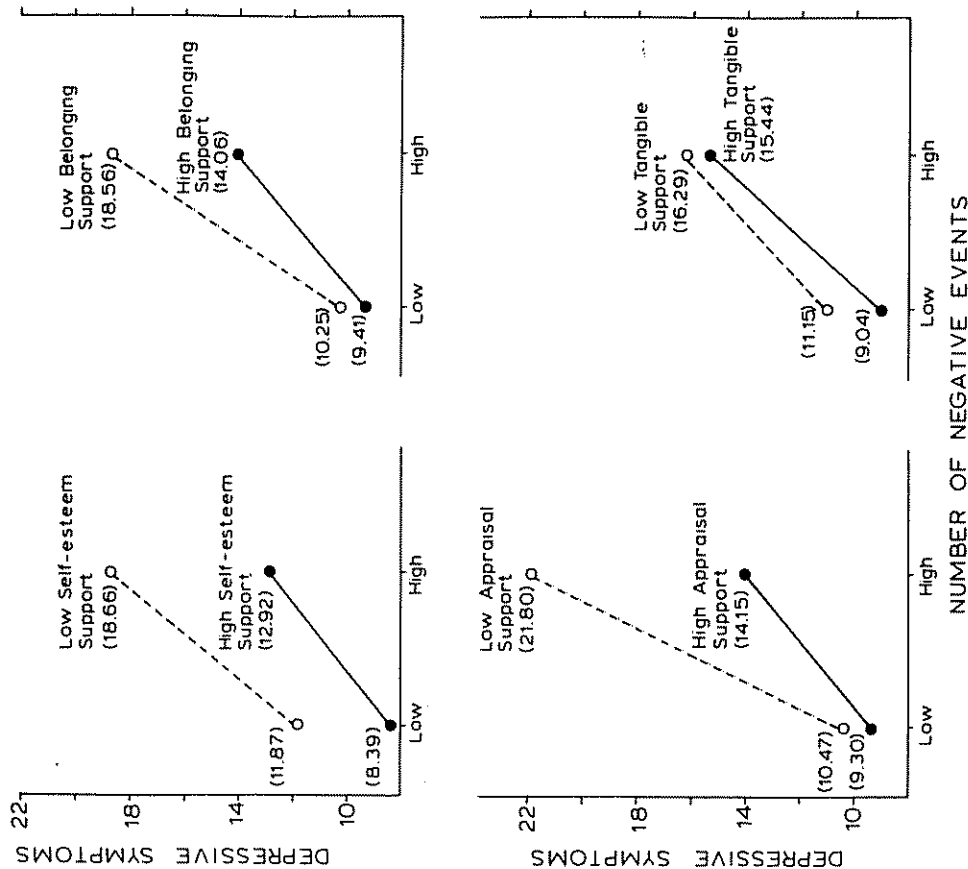
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 even though cross-sectional correlations between support and physical symptomatology are small.

Buffering Effects and the ISEL

The four subscales of the ISEL reflect four types of resources that may protect people from the pathogenic effects of stress (Cohen & McKay, 1985). The "buffering" hypothesis predicts a statistical interaction between social support and stress. The form of the interaction is that support is beneficial to persons under high levels of stress and is either less helpful or ineffective for persons under low levels of stress. Four studies (Oregon I, Arizona State, Delaware, Oregon Smoking) have used the ISEL in testing the buffering hypotheses. In the Oregon I study, Cohen and Hoberman (1983) found a buffering interaction between life events and the total ISEL in the prediction of depressive symptomatology. When we examined the contributions of the separate subscales to these regression analyses, we found that the interaction effect occurred in the case of self-esteem, belonging and appraisal support but not tangible support. Moreover, when all the life event X support interactions were entered into the regression equation simultaneously, only appraisal and self-esteem support made significant independent contributions to accounted variance. Figure 1 depicts the data from this study. Although lacking any detail, a summary of the Arizona State study (Sandler, 1982) reports a life events X ISEL buffering interaction for depressive symptomatology with life events X ISEL subscale interactions that "were similar to those reported by Cohen and Hoberman (1983)". In the case of physical symptoms, the Oregon I study data only partially supported the buffering hypothesis. Particularly, the data suggest that social support protects one from the pathogenic effects of high levels of stress but harms those (i.e., is associated with increased symptomatology) with low levels of stress. This crossover interaction may suggest that the increased responsibilities that are part and parcel of the interpersonal relationships that provide support, themselves contribute a small increment in one's stress level and consequently in symptomatology. However, since this form of the interaction occurred only in the prediction of physical symptoms, and is not commonly found in the literature, we are not very confident that it is reliable.

The Delaware study provides both a cross-sectional and longitudinal replication of the buffering effect of the ISEL reported in the Oregon and Arizona State studies but indicates slightly different results in regard to subscale analyses. At the beginning of the semester, undergraduate students completed a life events scale, the Langer Symptom Checklist, and the Beck Depression Inventory. About two months later, subjects completed these same three scales as well as the student form of the ISEL. During this second testing, they reported the occurrence of life

FIGURE 1



events from the time of the first measurement period. Cross-sectional analysis of time 2 data indicate significant buffering interactions in the case of both the Beck and Langer checklist. Analyses of life event X ISEL subscale interactions in predicting the Beck indicated independent contributions to variance for the interaction of life events with belonging and (nearly significant) for the interaction between life events and

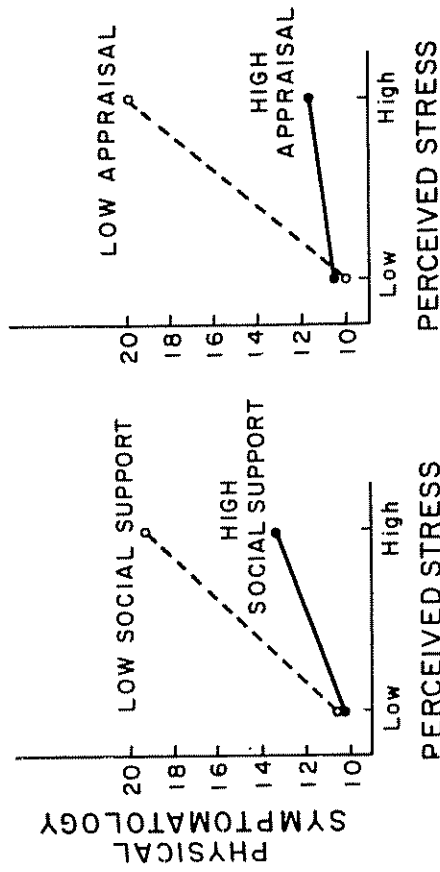
the appraisal scale. The L-22 analysis revealed significant independent interactions between life events and belonging, appraisal, and self-esteem subscales. Each subscale effect was consistent with the stress-buffering effect found for the total ISEL. A longitudinal analysis of the same data with time 1 criteria forced into the equation first indicated the same buffering interaction for the ISEL. Although none of the interactions between life events and the ISEL subscale made significant independent contributions in predicting the Beck for this longitudinal analysis, the interaction between life events and the self-esteem scale was significant in the prediction of the L-22.

Although it is difficult to integrate the data from these studies into some clear picture of which support resources are responsible for buffering effects in college students, there are some strong hints. First, none of the studies found a buffering interaction with the tangible support subscale. The lack of any evidence for a tangible buffer suggests that material aid is not an important resource for buffering the stress-psychological symptom association in college students. Second, there is a tendency for the interaction between life events and self-esteem support and between life events and appraisal support to appear across studies. This might occur either because all stressors inherently elicit needs for appraisal (information on defining and coping with stressful situations) and self-esteem (information that would help one cope with threats to self-esteem) or that college students are especially prone to stressors that elicit these specific needs (cf. Cohen & McKay, 1984; Cohen & Wills, 1985).

Analyses of the buffering effectiveness of the general population ISEL in the prediction of physical symptoms were conducted on Oregon Smoking study data. A prospective analysis predicting end of treatment (six weeks after pretreatment testing) physical symptomatology from pretreatment life event and social support did not find a significant life events X ISEL interaction. However, a similar analysis replacing life events scale scores with scores from the Perceived Stress Scale, a measure of appraised level of stress (Cohen, Mermelstein & Kamarck 1983), did predict buffering effects on physical symptomatology at the end of treatment. In both cases, these effects were primarily attributable to the role of appraisal support. Figure 2 depicts the form of this interaction for the entire ISEL and for the appraisal scale.

These data again suggest the importance of appraisal support in protecting people from the pathogenic effects of stressful events. As noted above, it is possible that appraisal support (having persons to talk to about your problems, suggest coping strategies, etc.), by definition, plays an important role in facing stressful events. That is, almost all such events require one to assess the demands, threats and/or challenges they pose and

FIGURE 2



determine one's ability to cope (cf. Lazarus, 1977).

ISEL as a Predictor of Smoking Reduction & Cessation Maintenance

In an ongoing project, we have been examining the role of social support in the maintenance of smoking abstinence and reduction. In a recently completed study (Mermelstein, Cohen & Lichtenstein, 1983), smoking clinic clients participated in a 6-week treatment program including self-monitoring of smoking, self-management training, nicotine fading, and cognitive behavioral relapse prevention. An assessment battery which included the general population form of the ISEL was completed during the week prior to the first treatment session, at the end of treatment, and at a six-month follow-up meeting. Smoking rate was assessed by telephone interview at 1, 2, and 3 months after treatment, and by face to face interview at 6 months. Two smoking outcomes, percent of baseline smoking rate and smoking status (abstinent or smoking) were used. Smoking status at the end of treatment and during follow-up was confirmed by a combination of self-report, expired air carbon monoxide and saliva thiocyanate measurements, and reports by significant others.

It was hypothesized that social support would aid in the maintenance of a behavioral change. Indeed, the ISEL proved to be a good predictor of smoking during the follow-up period. However, the relationship between social support and maintenance differed for subjects who were abstinent at the end of treatment and for those who were still smoking when the treatment ended. For

subjects abstinent at the end of treatment, the pretreatment ISEL significantly predicted six-month follow-up percent rate and smoking status. High levels of support predicted lower percent rates (-.35) and the maintenance of abstinence (-.28). For the end-of-treatment smokers, on the other hand, the pretreatment ISEL predicted both rate (.41) and status (.52), but in the unpredicted direction. For the end-of-treatment smokers, high perceived support was associated with increases in smoking over follow-up. When one examines the correlations between the subscales of the ISEL and six-month follow-up smoking for the end-of-treatment abstainers and smokers, it becomes apparent that the results described above are due largely to the effects of appraisal support. Correlations between the pretreatment appraisal subscale and six-month smoking rate and status are presented in Table 4. Thus, it is possible for smokers to have highly supportive environments in general, but for these environments not to be supportive of quitting or reducing smoking. It is particularly noteworthy that the appraisal subscale was clearly responsible for the predictive effects of the pretreatment ISEL. These data suggest that whether one's confidants (as opposed to casual friends, work peers, and more formal family acquaintances) are supportive of one's attempts to quit smoking is an important determinant of maintenance. We are presently following up this work by assessing the appraisal networks of persons entering the cessation program and determining which and how many people in these networks smoke. We have developed an appraisal network measure, the Social Network Inventory for Tobacco Smokers (SNITS), to address this issue.

COMMENTS

The data presented in this chapter provide strong support for

TABLE 4

Correlations Between Pretreatment Appraisal Support and Six Month Smoking Rate and Smoking Status for Quitters and Nonquitters

	6 month	
	Smoking Rate	Smoking Status
Smoking Status At Termination	-.45	-.43
Of Treatment	.63	.59

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the validity and reliability of the ISEL scales. As noted above, the ISEL has proved to be a good predictor of both symptomatology and smoking cessation behavior. It has also consistently been found to interact with stress measures in a manner that is consistent with the hypothesis that social support protects people from the pathogenic effects of stressful events.

We feel, however, that the most important contribution of the scale is its ability to indicate the type of resources that operate to improve health and well-being in any particular situation. For example, in the studies of college students, data from the subscales clearly exclude the possibility that tangible support operates as a stress-buffer. This work also suggests that appraisal and self-esteem support are generally effective buffers for college students under stress. Although these patterns of data are suggestive, they are not to be interpreted as definitive evidence for the operation of some versus other support resource in this population. The effectiveness of any particular support resource may well depend on the context of the situation. For example, our own work (Cohen & McKay, 1984) argues that the match between the needs elicited by the stressful events one encounters and available support is central to understanding when a particular kind of support will be a successful buffer. It is possible that the stressors that college students confront typically elicit needs for appraisal and self-esteem support but not for tangible support. As noted above, it is also possible that appraisal support may be inherently linked to dealing with stress since it provides generic kinds of resources for coping with stressful experiences. Further work should assess these needs as well as various available support resources.

The usefulness of the scale in determining the operative support resource is also exemplified by the smoking cessation study. This work suggests that only appraisal support is an important determinant of the maintenance of abstinence and of smoking reduction and that what one's confidants say may determine the success or failure of a behavioral change program of this sort.

Further research with the ISEL and other new scales that assess different support functions will provide us with a better understanding of the process by which support is linked with improved health and well-being.

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In the College Student studies, item 2 of the appraisal scale reads "there is someone who will give me suggestions about activities for recreation or entertainment". Item 5 of the appraisal scale was reversed and read "there is someone who...". We prefer the revised version of the scale (as listed), but the changes have little effect on the scales' psychometric qualities.

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Belonging

- T 1. If I decide on a Friday afternoon that I would like to go to a movie that evening, I could find someone to go with me.
- F 2. No one I know would throw a birthday party for me.
- T 3. There are several different people with whom I enjoy spending time.
- F 4. I don't often get invited to do things with others.
- T 5. If I wanted to have lunch with someone, I could easily find someone to join me.
- F 6. Most people I know don't enjoy the same things that I do.
- T 7. When I feel lonely, there are several people I could call and talk to.
- T 8. I regularly meet or talk with members of my family or friends.
- F 9. I feel that I'm on the fringe in my circle of friends.
- F 10. If I wanted to go out of town (e.g., to the coast) for the day I would have a hard time finding someone to go with me.

Tangible

- T 1. If for some reason I were put in jail, there is someone I could call who would bail me out.
- T 2. If I had to go out of town for a few weeks, someone I know would look after my home (the plants, pets, yard, etc.)
- F 3. If I were sick and needed someone to drive me to the doctor, I would have trouble finding someone.
- F 4. There is no one I could call on if I needed to borrow a car for a few hours.
- T 5. If I needed a quick emergency loan of \$100, there is someone I could get it from.
- F 6. If I needed some help in moving to a new home, I would have a hard time finding someone to help me.
- F 7. If I were sick, there would be almost no one I could find to help me with my daily chores.
- T 8. If I got stranded 10 miles out of town, there is someone I could call to come get me.
- T 9. If I had to mail an important letter at the post office by 5:00 and couldn't make it, there is someone who could do it for me.
- F 10. If I needed a ride to the airport very early in the morning, I would have a hard time finding anyone to take me.

Appendix: The General Population Form of the ISEL

For clarity, each subscale is listed separately. The scale presented to subjects consists of all 40 items listed in random order. T or F indicates response coded as social support.

Instructions

This scale is made up of a list of statements each of which may or may not be true about you. For each statement we would like you to circle probably TRUE (T) if the statement is true about you or probably FALSE if the statement is not true about you.

You may find that many of the statements are neither clearly true nor clearly false. In these cases, try to decide quickly whether probably TRUE (T) or probably FALSE (F) is most descriptive of you. Although some questions will be difficult to answer, it is important that you pick one alternative or the other. Remember to circle only one of the alternatives for each statement.

Please read each item quickly but carefully before responding. Remember that this is not a test and there are no right or wrong answers.

Appraisal

- T 1. There is at least one person I know whose advice I really trust.
- F 2. There is really no one I can trust to give me good financial advice.
- F 3. There is really no one who can give me objective feedback about how I'm handling my problems.
- T 4. When I need suggestions for how to deal with a personal problem I know there is someone I can turn to.
- T 5. There is someone who I feel comfortable going to for advice about sexual problems.
- T 6. There is someone I can turn to for advice about handling hassles over household responsibilities.
- F 7. I feel that there is no one with whom I can share my most private worries and fears.
- F 8. If a family crisis arose few of my friends would be able to give me good advice about handling it.
- F 9. There are very few people I trust to help solve my problems.
- T 10. There is someone I could turn to for advice about changing my job or finding a new one.

Self-Esteem

- F 1. In general, people don't have much confidence in me.
 T 2. I have someone who takes pride in my accomplishments.
 F 3. Most of my friends are more successful at making changes
 in their lives than I am.
 T 4. Most people I know think highly of me.
 F 5. Most of my friends are more interesting than I am.
 T 6. I am more satisfied with my life than most people are
 with theirs.
 F 7. I have a hard time keeping pace with my friends.
 F 8. I think that my friends feel that I'm not very good at
 helping them solve problems.
 T 9. I am closer to my friends than most other people.
 T 10. I am able to do things as well as most other people.