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INTERPERSONAL SUPPORT EVALUATION LIST (ISEL) – COLLEGE VERSION: VALIDATION AND APPLICATION IN A GREEK SAMPLE

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ABSTRACT

Objectives: a) To validate the Interpersonal Support Evaluation List (ISEL) – college version in a Greek population sample and b) To test the hypothesis that students scoring high on the ISEL present stronger resistance to stressful experiences and fewer psychological or physical problems.

Design: Rating scale assessment and analytical cross-sectional study.

Method: The ISEL was translated into Greek and then back-translated into English. A random sample of 145 students of the Faculty of Medicine completed: a) the translated version of the ISEL, b) the Symptom Check List 90-R (SCL-90-R), c) the Scale of Stressful Life Events (SSLE) and d) a questionnaire about physical health problems. Comparisons were conducted between the scores on the ISEL and the scores on the other measures. Correlations were also calculated between the scores on the Global Severity Index (GSI) of the SCL-90-R and SSLE, separately for students with high, fair and low social support, in order to assess the protective role of social support. The test–retest reliability and the internal consistency of the ISEL were also investigated.

Results: The students with a lower score in social support reported more psychological and somatic symptoms. The students with a higher score in social support were protected against the harmful effect of stressful events. The ISEL presents good internal consistency (Cronbach's alpha: 0.452–0.752) and test–retest reliability (intraclass correlation coefficients (ICC): 0.631–0.847).

Conclusions: The ISEL is a valid and reliable instrument for measuring social support among Greek students. A higher score on the ISEL is correlated with a significant stress-buffering effect.

INTRODUCTION

It is well documented by many studies that social relations may positively or negatively affect psychiatric and physical morbidity (Cohen & Wills, 1985; Hegelson *et al*., 1998). The term social support is used to refer to social processes contributing to individual well-being and health.

Different theoretical constructs such as the *main effect* and the *stress-buffering model* have developed in order to explain the relationship between social support and health (Cohen *et al.*, 2000). According to the main effect model, the existence of an extensive, integrated network of social relations increases compliance to normative, health-promoting behaviors and provides sources of appropriate information and help. Furthermore, the social network may strengthen the person's self-confidence, security, sense of stability and increase the predictability of the environment (Cohen, 1988; Uchino *et al.*, 1996). According to the stress-buffering model, the protective functions of social support appear mostly when a person faces stressful events. Under stress, the perceived availability of social resources may generate less pessimistic appraisals of the existing difficulties and of personal adaptive capacities. In addition, there is less physiological arousal, fewer chronic intrusive negative thoughts and fewer maladaptive reactions (Cohen & McKay, 1984; Gore, 1981; House, 1981; Lepore *et al.*, 1996).

A number of instruments are available to measure different aspects of social support, such as frequency of received supportive actions (Barrera *et al.*, 1981), perceived quality or availability of diverse types of support (Cutrona & Russell, 1987), generalized beliefs about the supportiveness of others (Hanson & Ostergen, 1987), social integration and social networks (Brugha *et al.*, 1987), and relationships and interactions relevant to social support (Reis & Collins, 2000). Usually these measures concern the general population, but some of them are specific for subgroups such as children, college students and the elderly.

The Interpersonal Support Evaluation List (ISEL) (Cohen & Hoberman, 1983) is a multi-dimensional inventory measuring perceived social support. It is available in a 40-item version for the general population and in a 48-item version for college students.

This inventory consists of four subscales, namely: (1) Appraisal, concerning the perceived availability of another person to offer advice, cognitive guidance and information, (2) Tangible, which is aid, material or instrumental support, (3) Self-esteem maintenance, through social comparisons, and (4) Belonging, referring to the perceived availability of others for companionship. Each item of the scale is a statement positively or negatively related to social support. There are two answer options: 'rather yes' or 'rather no'. The ISEL score is calculated by adding one point either for each 'rather yes' answer concerning statements positively related to social support, or for each 'rather no' answer concerning statements negatively related to social support. The highest score on the ISEL – college version is 48, whereas the lowest is zero. The ISEL has been widely used and has a consistent reputation for affirming the stress-buffering model (Wills, 1991; Wills & Filer, 2000).

In Greece, the use of social support measures in research or in clinical practice is very limited. The present study is the first one aiming at the evaluation of a measure such as the ISEL – college version. In accordance with the above-mentioned research data, it was expected that students scoring high in this test would present fewer psychological or physical problems and stronger psychological resistance to stressful experiences.

METHOD

Sample – translation

The ISEL was translated from the original English text into Greek by a native Greek who spoke English fluently, and then a blind back-translation into English was performed by a

researcher whose first language was English and who spoke Greek fluently. The study team compared the translations and before shaping the final text the Greek translation was discussed at a focus group of 12 students. Changes were proposed in order to make some items more explicit and adapt them to the conditions of student life in Greece. The suggestions from the group were used to produce the version of the scale used in this study.

Next, 200 anonymous files, containing the final version of the ISEL and the other measures used in this study, were distributed to students attending the Faculty of Medicine, 4th–6th years, at a provincial university of Greece with a total of about 300 registered students. The distribution of the files took place just before the beginning of tutorial courses on pre-arranged dates. The students who were present were invited to participate in a study aiming to examine their social and psychological characteristics. Their participation would be optional and anonymous. Out of 200 students provided with the files, 145 returned them duly completed. The mean age of those who completed the questionnaires was 22.50 years (SD: 1.92) and there were no significant age or gender differences between this group and those who did not return the questionnaires or those who were not invited to take part.

In order to estimate test–retest reliability, about three months later the same students who had completed the questionnaires were approached. Of these 42 completed the same measures again. With the use of a coding number, each second file was paired to the first one completed by the same participant without affecting anonymity.

Measures

The participants had to complete the following tests along with the ISEL:

The Symptom Check-List 90-R (SCL-90-R), which is a screening test with 90 items concerning nine psychological dimensions (somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism) and three global indices of distress (the Global Severity Index (GSI), the Positive Symptom Distress Index (PSDI) and the Positive Symptom Total (PST)). Among the global indices the GSI should be used in most instances where a single summary measure is called for. The SCL-90-R is widely used in many countries and has been validated in Greece (Derogatis, 1994; Donias *et al.*, 1991).

The Scale of Stressful Life Events (SSLE), was developed and validated in Greece (Madianos, 1989). This scale registers the recent presence of disturbing events, such as illness, accident, separation and family conflicts in the person's life. The original scale mentions 18 such events, but four other events related to student life (e.g. failure in exams) have been added. The measure is open-ended and participants are encouraged to record any other stressful event that has happened to them.

A questionnaire inquiring about some common physical health conditions specifically designed for this study. It inquired about the person's health during the last month and contained four items: one continuous (days of staying at home for any health problem), and three dichotomous 'yes–no' questions (whether the person had experienced common cold infections, repeated headaches or gastrointestinal symptoms). The questionnaire was piloted in a random sample of six students.

Procedure – statistics

The mean and standard deviations of the ISEL scores of the sample were calculated. Cross-sectional comparisons were conducted concerning gender (*t*-test) and monthly income ($< 1,000$ euros, $1,000$–$2,500$ euros, $> 2,500$ euros) of the students' families (ANOVA).

The SCL-90-R and the physical health questionnaire were used as external validators of the ISEL. It was hypothesized that students with low social support would report more physical and psychological problems. We used *t*-tests to compare those reporting physical problems with the rest of the sample. Furthermore, Spearman's correlations were conducted between the total number of staying at home days, the number of stressful events, and ISEL and SCL-90-R scores.

In order to check the stress-buffering effect, the students in the sample were separated into three groups according to their total score on the ISEL. Thus, 23% of the sample consisted of students with an ISEL score of less than 31 (low perceived social support), while 27% had a score of more than 41 (high perceived social support). Correlations (Spearman method) were conducted, for each of the three groups separately, between the number of reported stressful life events and the GSI of the SCL-90-R.

Cronbach's alpha was used to measure internal consistency of the ISEL as a whole and each subscale. Intraclass correlation coefficients (ICCs) were calculated to estimate test–retest reliability.

RESULTS

The ISEL scores (mean, standard deviation) were as follows: Total score: 35.06 (8.80), Tangible: 9.41 (2.35), Belonging: 8.19 (2.37), Appraisal: 9.72 (2.96), Self-esteem: 7.73 (2.97). With regard to the total score there were no significant differences between males and females ($t = 0.224$, $p = 0.500$) or between students of different socioeconomic levels ($F = 2.021$, $p = 0.095$). As far as subscales were concerned, there was only one significant difference in self-esteem ($F = 2.563$, $p = 0.041$) between relatively richer (higher self-esteem) and relatively poorer (lower self-esteem) students (Table 1).

The students who presented more physical health problems during the month before the administration of the test reported relatively lower social support. A statistically significant negative correlation was found between the total score on the ISEL and the number of home stay days ($r = -0.193$, $p = 0.050$). The subgroups of students with headaches ($t = -2.642$, $p = 0.009$) and with gastrointestinal symptoms ($t = -2.832$, $p = 0.005$) had significantly lower scores on the ISEL compared with their counterparts who did not present these problems. However, the differences between those with and without the common cold were not significant ($t = 0.366$, $p = 0.715$) (Table 2).

No association was found between the scores on the subscale of tangible support and physical problems. However, significant associations were found in other subscales on the ISEL, e.g. self-esteem with headaches ($t = -3.399$, $p = 0.001$) and gastrointestinal disorders ($t = -2.618$, $p = 0.010$) (Table 2).

The students with more psychological problems reported lower social support. There was a negative correlation between the total scores on the ISEL and the GSI of the SCL-90-R ($r = -0.465$, $p < 0.000$). Negative correlations were also found between the subscales of

Table 1
The scores on the ISEL of different groups of the sample

Sample (N)	Tangible mean (SD)	Belonging mean (SD)	Appraisal mean (SD)	Self-esteem mean (SD)	Total score mean (SD)
Sex					
Males (58)	9.55 (2.00)	8.26 (2.86)	9.43 (3.10)	7.97 (2.97)	35.25 (8.42)
Females (85)	9.34 (2.56)	8.15 (2.69)	9.87 (2.89)	7.54 (3.00)	34.91 (9.17)
	$t = 0.526$	$t = 0.225$	$t = -0.867$	$t = 0.835$	$t = 0.224$
	$p = 0.146$	$p = 0.765$	$p = 0.440$	$p = 0.324$	$p = 0.500$
Income (Euros per month)					
< 1,000 (19)	8.89 (2.42)	6.89 (2.81)	8.42 (3.39)	6.00 (2.87)	30.21 (9.30)
1,000–2,500 (79)	9.43 (2.54)	8.43 (2.71)	9.87 (2.95)	7.73 (2.87)	35.47 (9.08)
> 2,500 (41)	9.56 (1.98)	8.39 (2.66)	9.93 (2.88)	8.41 (3.06)	36.38 (7.76)
	F = 6.17	F = 2.147	F = 1.027	**F = 2.563**	F = 2.021
	$p = 0.651$	$p = .078$	$p = 0.396$	***p = 0.041***	$p = 0.095$
Total (143)	9.41 (2.35)	8.19 (2.37)	9.72 (2.96)	7.73 (2.97)	35.06 (8.80)

the ISEL and the GSI (Tangible: $r = -0.246$, $p = 0.003$, Belonging: $r = -0.328$, $p < 0.000$, Appraisal: $r = -0.467$, $p < 0.000$, Self-esteem: $r = -0.405$, $p < 0.000$). Moreover, the SCL-90-R dimensions were negatively correlated with the ISEL. The strongest correlations were found for depression (-0.543, $p < 0.000$), psychoticism (-0.470, $p < 0.000$) and interpersonal sensitivity (-0.443, $p < 0.000$) (Table 3).

With regard to the stress-buffering effect, the group of students with relatively high perceived social support did not present a significant correlation between reported stressful events and the GSI ($r = 0.131$, $p = 0.447$). However, a significant correlation was found for the two other groups, i.e. for students with fair social support ($r = 0.408$, $p < 0.000$) and those with relatively low social support ($r = 0.569 - p < 0.000$) (Table 4).

The ISEL was found to have very good internal consistency (Cronbach's alpha: 897) and good test–retest reliability (ICC 0.686). The respective correlation coefficients of the subscales ranged between 0.452 (Self-esteem) and 0.752 (Appraisal) for internal consistency

Table 2
Relations between the scores on the ISEL and physical problems of the students

		Tangible mean (SD)	Belonging mean (SD)	Appraisal mean (SD)	Self-esteem mean (SD)	Total score mean (SD)
Headaches	Yes	9.07 (2.38)	7.68 (2.68)	9.23 (3.31)	**6.71 (2.95)**	**32.70 (8.95)**
	No	9.66 (2.29)	8.51 (2.75)	10.01 (2.71)	**8.39 (2.83)****	**36.61 (8.45)****
Gastrointestinal disorders	Yes	8.84 (2.71)	**7.13 (2.29)**	**8.74 (3.32)**	6.55 (3.18)	**31.26 (9.89)**
	No	9.59 (2.22)	**8.50 (2.63)***	**10.00 (2.83)***	**8.10 (2.84)***	**36.22 (8.24)****
Common cold	Yes	9.44 (1.97)	8.44 (2.72)	9.73 (2.53)	7.91 (2.90)	35.53 (7.79)
	No	9.42 (2.51)	8.09 (2.77)	9.72 (3.17)	7.69 (3.02)	34.95 (9.31)

* $p < 0.05$; ** $p < 0.01$.

Table 3
Correlations between the scores on the ISEL and the scores on the SCL-90-R

SCL-90-R	Tangible r	Belonging r	Appraisal r	Self-esteem r	Total score r
Somatization	−0.040	−0.142	−0.249**	−0.217**	−0.223**
Obsessive-compulsive	−0.212*	−0.293***	−0.406***	−0.377***	−0.404***
Interpersonal sensitivity	−0.231**	−0.309***	−0.426***	−0.412***	−0.443***
Depression	−0.279**	−0.419***	−0.531***	−0.480***	−0.543***
Anxiety	−0.238**	−0.288***	−0.440***	−0.385***	−0.431***
Hostility	−0.176*	−0.130	−0.275**	−0.221**	−0.248**
Phobic anxiety	−0.213*	−0.236**	−0.333**	−0.251**	−0.329***
Paranoid ideation	−0.202*	−0.204*	−0.299***	−0.0098	−0.253**
Psychoticism	−0.279***	−0.320***	−0.435***	−0.384***	−0.470***
Global Severity Index	−0.246**	−0.328***	−0.467***	−0.405***	−0.465***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4
Correlations between the number of stressful life events and the GSI of SCL-90-R for students with relatively high (ISEL > 41), fair (ISEL 31–41) or low (ISEL < 31) perceived social support

Students	Stressful events mean (SD)	SCL-90-R (GSI) mean (SD)	Correlations r (p)
(ISEL > 41) (N 36)	3.00 (2.00)	0.39 (0.30)	0.131 (0.447)
(ISEL 31–41) (N 69)	3.43 (2.39)	0.67 (0.54)	**0.408 (0.000)**
(ISEL < 31) (N 39)	3.95 (2.81)	1.02 (0.59)	**0.569 (0.000)**

(Cronbach's alpha) and between 0.631 (Tangible) and 0.847 (Belonging) for test–retest reliability (ICCs).

The correlations between the total score on the ISEL and each of its subscales ranged between 0.753 and 0.839, but the inter-subscale correlations were substantially lower between 0.403 and 0.625.

DISCUSSION

Results of this study indicate that a strong negative association exists between physical or psychological problems and perceived social support. This finding is in accordance with the confirmed properties of the original measure, and provides support for the validity of the Greek translation. Psychopathological dimensions that specifically predispose subjects towards social conflicts or isolation (such as depression, psychoticism, interpersonal sensitivity) are found to present the strongest negative correlations with social support, but

pathological problems do not present significant correlation with tangible support. Consequent to these specific findings, one needs to be cautious in interpreting our results as evidence of a causal role of perceived social support in mental and physical health. Reverse causality is also plausible: psychological characteristics and somatic problems may influence social interactions, either decreasing them (e.g., in the case of depression) or increasing some of them (e.g., the existence of active somatic symptoms may attract social support and counterbalance other contrary effects of poor health on social relations). Further research is needed in order to test these hypotheses.

In the present study a relationship between a recent common cold infection and social support has not been found. However, other studies have reported that the diversity of social ties may be a protecting factor against such infections (Cohen *et al.*, 1997), either because they urge engagement in sound health practices (Umberson, 1987), or because they decrease stress and increase immune system functioning (Herbert & Cohen, 1993). A probable explanation of our finding is that during the crucial time period, there was a common cold epidemic, so relatively isolated students had a better chance of not being infected, regardless of their unhealthy habits or their immune system conditions.

Some of our results are compatible with the stress-buffering hypothesis that perceived availability of support partly protects one from life stress (Cohen & Hoberman, 1983; Henderson et al., 1980; Wilcox, 1981). Since, in our study, only the subgroup containing the quarter of students with relatively higher available support is found to be psychologically unaffected by stressful events, it is possible that the harmful results of stress are counterbalanced only if perceived social support lies above a crucial threshold. It is possible that students above this threshold are protected against stress not only by the directly beneficial effect of their social support but also because self-confidence and optimism are traits of their personality. These traits may be the common reason for high scoring on the ISEL and successfully coping with stressful events. Other studies have come to a partly different conclusion, and stress the importance of social isolation in causing health problems (House *et al.*, 1982). According to this approach, different levels of support above the isolation threshold are of minor importance as far as physical or mental health status is concerned.

The internal consistency of the scale as a whole and its subscales was very good. The results in the present study are quite similar to the ones reported in the original presentation of the ISEL (Cohen *et al.*, 1985).

The test–retest reliability was good. It is worth noting that in the present study there was a relatively long period of 3–4 months between the two administrations of the measure. It is reasonable to suppose that some real changes in available support had occurred during this period, especially with regard to the subscales of tangible support and self-esteem.

There are some additional limitations in the present study. The sample is composed of students coming from one faculty of a provincial university. Almost all of them live away from their parental families. It is possible that students living with their families, as it is the case for many students in large cities, may present some differences in their social support profile. Moreover, the investigation of the relation between social support and physical health was based on subjective, retrospective reports. Subjective symptoms, such as headaches, may often represent a psychological rather than a physical problem.

However, the results indicate that the ISEL in its Greek translation is a valid and reliable instrument for measuring important aspects of social support among students. Thus the use

of standardized instruments for measuring social support in research and clinical practice in this group will be encouraged.

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