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Social Support Questionnaire among psychiatric patients with various diagnoses and normal controls

Abstract *Background*: Several studies have pointed to the importance of social support in influencing the onset and course of a psychiatric disorder such as schizophrenia or depression. However, only a few have studied it across groups of patients with various psychiatric diagnoses employing a standardized assessment procedure.
Method: We administered the Social Support Questionnaire (SSQ); a measure of social support recommended by two recent reviews on the subject, to 1,369 psychiatric outpatients visiting the 23 psychiatric hospitals and clinics all over Japan and to 178 healthy controls recruited from among employees at a general hospital.
Results: The original two-factor structure of the SSQ was confirmed and internal consistency reliability for the Number and Satisfaction subscales was satisfactory, with Cronbach's alphas above 0.85. When the SSQ scores were compared between psychiatric patients and healthy controls, it was found that the psychiatric patients in general reported significantly lower Number as well as Satisfaction scores than the healthy controls. When individual diagnostic categories were considered, almost all the diagnostic groups reported significantly lower Number scores, but only the patients with anxiety disorder, mood disorder, schizophrenia, and V codes reported significantly lower Satisfaction scores than the healthy controls. Compared with patients with other diagnoses, the schizophrenic patients stood out as reporting significantly lower Number and Satisfaction scores.
Conclusion: The findings demonstrated the internal consistency reliability, factor validity, and construct validity of the SSQ among psychiatric as well as normal populations, and exemplified the feasibility of applying the SSQ as a standard measure of social support among psychiatric patients.

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Introduction

Although there is now abundant literature on social support and its effects on psychological and physical health, most of the studies deal with samples taken from a general population (e.g., community residents, college students) or from patients with physical illness (e.g., cancer, coronary heart disease). A far smaller, yet substantial, number of studies focus on social support within a class of psychiatric disorders such as depression (Flaherty et al. 1983; George et al. 1989; Brugha et al. 1990; Zlotnick et al. 1996) and schizophrenia (Cohen and Sokolvsky 1978; Hammer 1981; Faccincani et al. 1990; Cresswell et al. 1992; Buchanan 1995). These studies have generally confirmed that social support is an important factor influencing the onset and course of each psychiatric disorder. It is then surprising that only a few studies can be found in the literature that compare social support across groups of patients with various psychiatric diagnoses and normal controls.

Neeleman and Power (1994) studied some aspects of social support in groups of chronic schizophrenic ($N = 21$), depressed ($N = 26$), and parasuicide patients ($N = 26$) and in a group of medical controls ($N = 25$). Their instrument was the Significant Others Scale (Power et al. 1988), which inquires about perceived as well as ideal support from three key figures (partner, close member of family, and closest friend). It was found that the sources of support for chronic schizophrenic patients were fewer than those for all the other groups, and that patients in all the psychiatric groups reported lower perceived levels of support than did the controls.

In a general population survey, social functioning in community residents with depression, with other psychiatric disorders such as phobia or alcohol abuse, and with no disorder was examined with some ad hoc interview question items (Fredman et al. 1988). Subjects with depression and those with other psychiatric disorders reported less contact with relatives, less friend satisfaction, and a worse relationship with spouse than subjects with no disorders, but the two psychiatric patient groups did not differ in their social functioning except for spouse relationship, for which currently depressed subjects reported a worse relationship than those with other psychiatric disorders.

Measures of social support in the literature have varied greatly from author to author. This lack of a general and convenient index of social support has been lamented as a serious obstacle to systematic studies by many researchers (O'Reilly 1988; Buchanan 1995). However, there is now growing consensus that the concept of social support may be differentiated into three broad aspects that are only weakly correlated with one another, namely: social network size, perceived social support, and received social support (Barrera 1986). The numerous research studies from the past two decades suggest that it is mainly perceived social support, or subjective adequacy of social support, that prevents psychological distress. The subject's size of social network, or their social embeddedness, is either not related to, or only weakly positively related to, health (Henderson et al. 1981; Cohen and Wills 1985), and the received support, which is also often referred to as enacted support, has been found to be inversely related to well-being (Barrera 1986; Wethington and Kessler 1986).

The emphasis now lies, therefore, with assessing the quality of relationships and, to a lesser extent, with their number. Instruments that were recommended in two recent reviews on the assessment of social support (McDowell and Newell 1987; Brugha 1989) include the Interview Schedule of Social Interactions (ISSI) by Henderson et al. (1980) and the Social Support Questionnaire (SSQ) by Sarason et al. (1983). Both instruments quantify the availability of, and satisfaction with, social support. The former is a semi-structured interview requiring 45 min, and was originally developed as a research instrument to measure social factors associated with the development of neurotic illness. When a lengthy interview is not feasible, the SSQ appears to be "the most adequate" and "the most promising" (McDowell and Newell 1987) instrument to measure social support, although the SSQ has not hitherto been studied in a psychiatrically disordered population.

The Group for Longitudinal Affective Disorders Study (GLADS) has been conducting a multi-center prospective follow-up study of a broad spectrum of affective disorders in Japan under the sponsorship of the Ministry of Health and Welfare, Japan (Furukawa et al. 1995). In the first stage of the collaborative study we examined representative samples of patients visiting the participating centers with a self-report test battery including the SSQ. The present paper has two interrelated purposes: firstly to examine the reliability and validity of the SSQ among psychiatric patients as well as healthy subjects, and secondly to compare the SSQ scores among diverse psychiatric diagnostic groups and normal controls. To the extent that the SSQ may be able to differentiate between patients and controls and/or between different diagnostic groups, the data can be said to add to the construct validity of the SSQ.

Methods

Subjects and procedures

The psychiatric patients included in the study were 2,537 cases who constituted representative samples of the first-visit patients to 29 psychiatric hospitals and clinics participating in the GLADS Project during the study period, who were aged 16 years old or older, and who were given the DSM-III-R diagnoses by psychiatrists using a semi-structured interview named the Psychiatric Initial Screening for Affective disorders (PISA; Kitamura 1992).

The 29 hospitals and clinics, which were spread across Japan, included psychiatric departments of 14 university hospitals, eight general hospitals, four mental hospitals, one community mental health center, and an outpatient clinic, and a psychosomatic department of a university hospital. Each hospital and clinic examined a representative subset of its first-visit patients, selected according to predetermined rules. In certain centers, a representative subsample meant all the first-visit patients examined by the psychiatrist(s) participating in the GLADS Project; in others, it meant all the first-visit patients on a certain day of the week; in still some others, it meant only the first such patient to show up on a certain day of the week. The selection of these preset rules was left to the individual centers, as time and human resources varied in each hospital.

Healthy control subjects were recruited at a large general hospital. A randomly selected half ($N = 423$) of all the employees of the hospital were requested and gave their informed consent to fill in a self-report test battery including the SSQ and the 30-item General Health Questionnaire as part of an anonymous survey on the mental health of the workplace.

Instruments

The Psychiatric Initial Screening for Affective disorders (PISA) is a semi-structured interview schedule probing for the presence/absence of 33 psychiatric symptoms and signs to arrive at the DSM-III-R diagnoses (Kitamura 1992). The inter-rater reliability of the schedule has been found to be satisfactory (Furukawa et al. 1995).

The Social Support Questionnaire (SSQ) was developed by Sarason et al. (1983, 1987b) as a reliable, valid, and convenient

index of social support. There is a 27-item version and an abbreviated six-item version. Each item has two parts. The first part assesses the number of available others the individual feels he or she can turn to in times of need in various situations. The second part of each item measures the individual's degree of satisfaction with the perceived support available in that particular situation. Subjects are instructed to indicate how satisfied they are on a six-point Likert scale, from "very dissatisfied" to "very satisfied." It therefore yields two scores, one for the perceived number of social supports, the Number score, and one for satisfaction with social support that is available, the Satisfaction score. The six items for the short SSQ are listed in the Appendix.

The psychometric properties reported for the original SSQ among college student populations are adequate. Good test-retest reliability, factor validity, predictive validity, and concurrent validity with an extensive structured interview have been reported for the full SSQ (Sarason et al. 1983, 1987a). The abbreviated SSQ has also demonstrated good internal consistency, test-retest reliability, and concurrent validity with the longer SSQ (Sarason et al. 1987b). Its two-factor structure was also confirmed by principal component factor analysis with varimax rotation (Sarason et al. 1987b). In the present study we used the six-item SSQ, because we were afraid that the response rate would be much lower if we administered the longer 27-item version to psychiatric patients. The semantic fidelity of the Japanese version of the SSQ was ascertained by means of back translation, whereby the first Japanese version was translated back into English by an independent researcher blind to the original English version, and any discrepancy between the original and the re-translation was corrected until the two were semantically equivalent. The scores for each subject were calculated, so long as they had answered at least half of the items, by averaging the scores of available items.

The General Health Questionnaire (GHQ) has been used and validated in a wide variety of settings and cultures to detect minor psychiatric disorders (Banks 1983; Goldberg and Williams 1988). There are 60-item, 30-item, 28-item, and 12-item versions of the GHQ, and we used the 30-item GHQ in the present survey. The cutoff recommended for the Japanese population to screen for psychiatric disorders is 8/7 (Kitamura et al. 1989).

Statistical analyses

Statistical analyses were conducted using SPSS 6.1 for Macintosh (SPSS 1994). All the tests of significance are two-tailed.

Results

Factor analysis of the SSQ in the patient sample

Of the 2,537 patients who visited the 23 psychiatric hospitals and clinics in the GLADS Project, 1,369 (54%) answered at least half of the SSQ items and therefore had their SSQ scores calculated, and 1,036 (41%) answered all the SSQ items. There was no statistically significant sex difference between those who answered at least half of the SSQ items and those who failed to do so [630 males (46%) vs 555 males (48%): $\chi^2 = 0.57$, $df = 1$, $P = 0.45$], but the former were significantly younger than the latter (mean $\pm$ SD = 41.9 $\pm$ 16.5 vs 44.8 $\pm$ 19.0 years, $t = 4.08$, $df = 2329.4$, $P < 0.001$). There was again no sex difference between those who answered all the SSQ items and those who didn't [467 males (45%) vs 718 males (48%): $\chi^2 = 1.85$, $df = 1$, $P = 0.17$], but the former were younger than the latter (mean $\pm$ SD = 42.2 $\pm$ 16.5 vs 43.9 $\pm$ 18.6 years,

$t = 2.50$, $df = 2585.3$, $P = 0.012$). For the purpose of factor analysis, the data for the subjects who answered all the SSQ items were used.

The results of the principal component factor analysis (varimax rotation) of the SSQ data for the patients are shown in Table 1. Both the kaiser criterion and the scree test allowed two factors to be extracted. All the Satisfaction items loaded clearly on Factor 1 and all the Number items on Factor 2.

The internal consistency reliability (Cronbach's alpha coefficient) for the SSQ Number subscale was 0.91, and that for the SSQ Satisfaction subscale was 0.94. The correlations between the SSQ Number and SSQ Satisfaction scores was modest, at 0.19 (95%CI: 0.13–0.25).

Factor analysis of the SSQ in the healthy controls

At least some data were available for 349 (83%) of the initial sample. Out of these 349 subjects, 179 (51%) scored below the validated threshold value (7 or less) on the 30-item GHQ and were hence considered mentally healthy. Of these 179, 178 (99%) filled in at least half of the SSQ items and 170 (95%) answered all the SSQ items. The nine subjects who failed to complete the questionnaire were excluded from the factor analysis of the SSQ items. Among these 170 subjects, there were 42 males (25%) and the mean age $\pm$ SD was 35.1 $\pm$ 10.6 years.

Table 2 shows the results of the principal component factor analysis (varimax rotation) of the SSQ data for the healthy control subjects. Again two factors were extracted according to the kaiser criterion and to the scree test. Although less clearly than among the patients, all the Satisfaction items loaded on Factor 1 and all the Number items loaded on Factor 2.

The Cronbach's alpha coefficient for the SSQ Number subscale was 0.85, and that for the SSQ Satisfaction subscale was 0.94. The correlations between the two subscales was 0.34 (95%CI: 0.20–0.47).

Table 1 Principal component factor analysis (varimax rotation) for the patient data

Item[a]	Factor 1	Factor 2
Item 1 Number	0.071	0.803
Item 1 Satisfaction	0.785	0.040
Item 2 Number	0.120	0.844
Item 2 Satisfaction	0.856	0.067
Item 3 Number	0.040	0.823
Item 3 Satisfaction	0.889	0.089
Item 4 Number	0.048	0.775
Item 4 Satisfaction	0.879	0.075
Item 5 Number	0.106	0.872
Item 5 Satisfaction	0.911	0.122
Item 6 Number	0.088	0.850
Item 6 Satisfaction	0.901	0.106

[a] See Appendix for description of each question item

Table 2 Principal component factor analysis (varimax rotation) for the control data

	Factor 1	Factor 2
Item 1 Number	0.046	0.745
Item 1 Satisfaction	0.717	0.276
Item 2 Number	0.067	0.746
Item 2 Satisfaction	0.875	0.129
Item 3 Number	0.103	0.734
Item 3 Satisfaction	0.879	0.158
Item 4 Number	0.187	0.655
Item 4 Satisfaction	0.899	0.097
Item 5 Number	0.182	0.812
Item 5 Satisfaction	0.906	0.140
Item 6 Number	0.206	0.788
Item 6 Satisfaction	0.911	0.104

Demographic influence on the SSQ scores

The influence of demographic variables on the SSQ Number and Satisfaction scores was examined among all the patients and healthy controls who answered at least half of the SSQ items and for whom the subscale scores could therefore be calculated.

There were 627 men and 730 women in the patient sample. There was no statistically significant difference in the SSQ Number and Satisfaction scores between these men and women ($t = -1.19$, $df = 1355$, $P = 0.23$ and $t = -1.19$, $d = 1355$, $P = 0.24$, respectively). Nor was there any significant difference between the 46 healthy men and the 132 healthy women ($t = -0.16$, $df = 176$, $P = 0.87$ and $t = 0.48$, $df = 176$, $P = 0.63$, respectively).

Table 3 shows the SSQ Number and Satisfaction scores for separate age groups among the patients and healthy controls. Among the patients, one-way analysis of variance showed that no statistically significant difference in the SSQ Number scores existed among different age groups ($F = 2.00$, $df = 6$, $P = 0.62$) but that there was a significant difference in the SSQ Satisfaction scores ($F = 3.31$, $df = 6$, $P = 0.003$). According to the post hoc Scheffé test, the only significant difference was between patients aged 20–29 and those aged 60–69, the older subjects reporting greater satisfaction than the younger subjects. Among the healthy controls, there was no significant difference in the SSQ Number scores depending on age group ($F = 0.20$, $df = 4$, $P = 0.94$), but there was some difference in the SSQ Satisfaction scores ($F = 3.36$, $df = 4$, $P = 0.01$). Scheffé test showed, however, that no two groups were significantly different at the $P = 0.05$ level.

Social support in different diagnostic groups in comparison with the normal controls

Having established the internal consistency reliability and the factor validity of the two scores of the SSQ, we would like to proceed to the comparison of social support in different diagnostic groups and the normal controls. The following analyses will examine the data for all the subjects who answered at least half of the SSQ items and for whom the subscale scores could therefore be calculated. Between-group comparisons were adjusted for age using analysis of covariance, because age was found to significantly influence SSQ Satisfaction scores and there were significant differences in age between certain groups (for example, psychiatric patients were significantly older than healthy controls: mean $\pm$ SD $= 41.9 \pm 16.5$ vs, 35.1 ± 10.6 years; $t = -8.13$, $df = 312.6$, $P < 0.001$).

Table 4 presents the SSQ Number and Satisfaction scores for patients with adjustment disorders, anxiety disorders, mood disorders, organic mental disorders, substance use disorders, schizophrenia (not including schizophreniform or schizoaffective disorder), sleep disorders, V codes (conditions not attributable to a mental disorder that are a focus of attention or treatment) and so on according to DSM-III-R. Taken together, the psychiatric patients reported significantly lower SSQ Number as well as SSQ Satisfaction scores than the healthy controls. When broken down into individual diagnostic groups, almost all the patient groups reported significantly lower SSQ Number scores than the healthy controls; the anxiety disorder, mood disorder (especially unipolar depression), schizophrenia and V codes patients also reported significantly lower SSQ Satisfaction.

Table 3 Social Support Questionnaire (SSQ) Number and Satisfaction scores for different age groups

Age	Patients				Controls			
	SSQ Number		SSQ Satisfaction		SSQ Number		SSQ Satisfaction	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
16–19	2.92	1.54	4.47	1.08	–		–	
20–29	3.03	1.76	4.47*	1.08	4.44	1.64	5.05	0.59
30–39	3.12	2.43	4.54	1.07	4.53	1.84	4.94	0.58
40–49	3.24	1.65	4.64	1.04	4.21	1.62	4.70	0.85
50–59	3.30	1.63	4.56	1.06	4.55	0.80	4.60	2.32
60–69	3.59	2.61	4.86*	0.92	4.00	2.83	4.67	6.60
70–	3.25	1.63	4.74	1.09	–		–	

* $P = 0.015$ (post hoc Scheffé test)

Table 4 SSQ Number and Satisfaction scores for major psychiatric diagnoses, analysis of covariance adjusting for age ($P_{(n)}$ P-value in comparison with normal controls, $P_{(d)}$ P-value in comparison with the patients with other diagnoses)

Disorder	SSQ Number				SSQ Satisfaction			
	Mean	SD	$P_{(n)}$	$P_{(d)}$	Mean	SD	$P_{(n)}$	$P_{(d)}$
All psychiatric patients ($N = 1358$)	3.20	1.96	< 0.001		4.59	1.05	< 0.001	
Adjustment disorder ($N = 55$)	3.15	1.73	< 0.001	ns	4.68	1.09	ns	ns
Anxiety disorder ($N = 185$)	3.12	1.63	< 0.001	ns	4.62	1.05	0.006	ns
Dissociative disorder ($N = 25$)	3.71	1.36	ns	ns	4.93	0.78	ns	ns
Mood disorder ($N = 577$)	3.20	2.12	< 0.001	ns	4.57	1.04	< 0.001	ns
Bipolar manic ($N = 12$)	3.13	1.41	0.016	ns	4.75	0.85	0.028	ns
Bipolar depressed ($N = 30$)	3.11	1.65	< 0.001	ns	4.93	0.95	ns	ns
Unipolar single episode ($N = 311$)	3.28	2.38	< 0.001	ns	4.63	1.05	0.009	ns
Unipolar recurrent ($N = 114$)	3.22	1.87	< 0.001	ns	4.45	0.99	< 0.001	ns
Organic mental disorder ($N = 44$)	3.25	1.51	0.006	ns	4.68	0.85	ns	ns
Substance use disorder ($N = 54$)	3.12	2.01	< 0.001	ns	4.63	1.23	ns	ns
Schizophrenia ($N = 114$)	2.66	1.61	< 0.001	0.007	4.34	1.04	< 0.001	0.029
Sleep disorder ($N = 65$)	3.47	2.16	0.002	ns	4.89	0.88	ns	ns
Somatoform disorder ($N = 90$)	3.29	1.91	< 0.001	ns	4.67	1.11	ns	ns
V codes ($N = 38$)	3.21	1.36	< 0.001	ns	4.50	1.20	0.016	ns
Normal controls ($N = 178$)	4.43	1.83			4.89	0.71		

When compared with psychiatric patients with the other diagnoses, however, only persons with schizophrenia reported significantly lower SSQ Number and Satisfaction scores than did patients with other psychiatric diagnoses.

Discussion

The present study clearly confirms the two-factor structure of the SSQ both among psychiatric patients and among healthy controls. In addition, the internal consistency reliabilities of the established two factors were highly satisfactory. The two scales of the SSQ were not influenced by the sex of the respondent; and the SSQ Number scale was not affected by the age of the respondent; the SSQ Satisfaction scale score differed to a minor degree depending on the age of the respondent. This relative absence of relationships between age and social support is in accordance with several previous reports (Costa et al. 1985; Antonucci and Akiyama 1987; Field and Minkler 1988; Stoller and Pugliesi 1988).

The present paper also examined social support systematically across patient groups of various psychiatric diagnoses and with normal controls. As expected and in accordance with several reports in the literature (Henderson et al. 1978; Brugha et al. 1982; Fredman et al. 1988; Neeleman and Power 1994), the psychiatric patients in general reported significantly lower SSQ Number as well as SSQ Satisfaction scores than the healthy controls.

When individual diagnostic categories were considered, almost all the diagnostic groups reported significantly lower SSQ Number scores than the healthy controls, but only the patients with anxiety disorder, mood disorder, schizophrenia, and V codes reported significantly lower SSQ Satisfaction scores than the

healthy controls. To the best of the present authors' knowledge, there has been no study focused on social support among anxiety disorder patients and only two studies examining social support among depressive patients in comparison with normal controls. Emmerson et al. (1989) administered the Interview Schedule for Social Interaction (Henderson et al. 1980) to 101 elderly depressed patients and to 85 community residents, and found that there were significantly more depressed men with a poor or no confiding relationship. McNaughton et al. (1992) administered a social support questionnaire developed by Schaeffer et al. (1981) to 27 Research Diagnostic Criteria major depressive disorder inpatients and to 35 nonpatients. The questionnaire yields three scores, namely, Number of social supports, Satisfaction with emotional support and Satisfaction with informational support. The depressives reported significantly fewer social supports and were less satisfied with the emotional component of this support than the controls.

When compared with patients with other diagnoses, the schizophrenic patients stood out as reporting significantly lower SSQ Number and Satisfaction scores. This particular finding for the schizophrenic patients corroborates Neeleman and Power's report (1994) that the sources of support for patients with schizophrenia were fewer than those for the other psychiatric patients. Several other studies have also emphasized the reduced network size of the schizophrenic patients in comparison with a normal sample (Cohen and Sokolvsky 1978; Hammer 1981). Cresswell et al. (1992) looked at both quantitative and qualitative aspects of social relationships among persons with chronic schizophrenia and found that the primary networks of these patients were small but the patients rated their perceived support as largely adequate. These results are difficult to interpret, however, because Cresswell et al. (1992) did not include any control group.

Appendix
The six questions of the Social Support Questionnaire

1. Whom can you really count on to be dependable when you need help?
2. Whom can you really count on to help you feel more relaxed when you are under pressure or tense?
3. Who accepts you totally, including both your worst and your best points?
4. Whom can you really count on to care about you, regardless of what is happening to you?
5. Whom can you really count on to help you feel better when you are feeling generally down-in-the-dumps?
6. Whom can you count on to console you when you are very upset?

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Several caveats are in order about the present study design. In the first place, because social support in patients was measured by a self-report questionnaire during their acute illness phase, the obtained scores may have been distorted by the effects of the illness. Ideally, the results needed to be verified by the collection of data from relatives who knew the patients well. This was not done in our study and as a result the data gathered may be limited by the respondents' over- or under-statement of their social support. Secondly, the response rate among psychiatric patients was not very high and the obtained data may not be representative of the original sample. It is possible, for example, that patients with more impaired social relations were less prone to answer a self-report measure. It appears that the SSQ was more acceptable among younger patients than among older subjects. The acceptability of the SSQ among psychiatric patients should, however, be evaluated with the understanding that the SSQ was administered along with two other self-report measures in the present sample. If administered alone, the response rate may have been higher. Thirdly, although there was a clear association between SSQ indexes and some of the psychiatric diagnoses, this relationship cannot be assumed to be etiological, due to the cross-sectional design of the present study. That is to say, the reported SSQ scores may be either the cause or the result of the psychiatric disorder. Lastly, we did not systematically collect data on concurrent physical illness among the patients and the controls. In theory at least this can be an important covariate for perceived social support, but we regret we cannot assess its influence in the present data sets.

Despite these shortcomings, the present paper demonstrated the internal consistency reliability and factor validity of the SSQ among psychiatric as well as normal populations, provided data to support the construct validity of the SSQ in differentially characterizing patients with various psychiatric diagnoses, and exemplified the feasibility of applying the SSQ as a standard measure of social support among psychiatric patients. In the future, it is hoped that more studies will employ a standardized measure of social support and examine its influence on the course and outcome of psychiatric disorders.

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