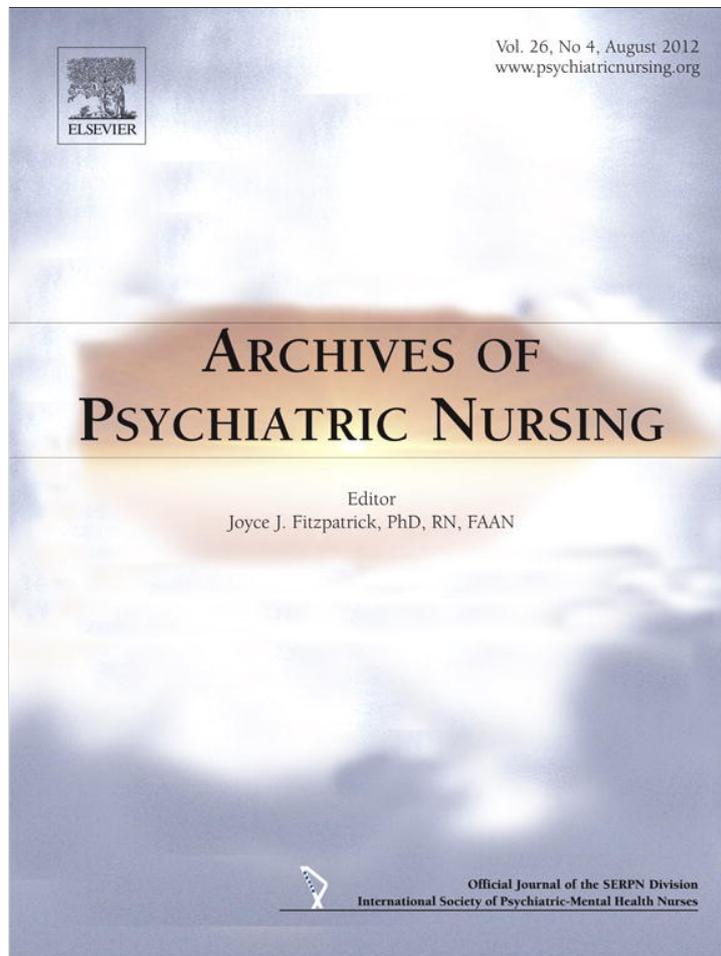


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Sense of Coherence and Quality of Life in Family Caregivers of Persons With Schizophrenia Living in the Community

Eriko Mizuno, Misuzu Iwasaki, Ikue Sakai, and Naotoshi Kamizawa

The purpose of this study was to clarify the sense of coherence (SOC) and quality of life (QOL) of caregivers of persons with schizophrenia. Thirty-four families were investigated using the SOC-13, the 26-item World Health Organization Quality of Life, and an interview guide. Family caregivers in their 50s, 60s, and 70s with higher SOC scores showed higher QOL scores; older groups showed higher mean SOC and QOL scores; and a significant difference in the scores for the environment domain was observed among the 3 groups. SOC was considered to be influenced by the family caregivers' age, educational level, duration of illness, and whether they live with the patients.
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IN JAPAN, IT is estimated that the total number of persons with mental disorders is 3,233,000, including 2,900,000 outpatients and 333,000 inpatients (Cabinet Office, 2011). Approximately 2.58 million persons are being treated for mental illnesses, and of these, 734,000 people are diagnosed with schizophrenia.

Schizophrenia is a serious and chronic illness, and most persons with schizophrenia experience the illness as episodes of relapse between remissions (Shepherd, Watt, Falloon, & Smeeton, 1989). Historically, families in Japan have been regarded as caretakers for psychiatric patients and have been responsible for protecting them for long periods. In current times, many families offer patients emotional support, assist in their medical treatment, and advocate for their rights. Thus, they play an important role and contribute to patient's health and welfare as caregivers. On the other hand, some family caregivers have insufficient information on the illness or treatment and provide care in a state of confusion or anxiety in spite of acting as the primary caregiver.

The health of caregivers of persons with schizophrenia has highly deteriorated (Bradley et al., 2006; Grandón, Jenaro, & Lemos, 2008). Many studies

illustrate the daily difficulties and burdens of family members of people with schizophrenia (Chien, Chan, & Morrissey, 2007; Gutiérrez-Maldonado, Caqueo-Úrizar, & Kavanagh, 2005; Hanzawa, Tanaka, Inadomi, Urata, & Ohta, 2008; Magliano, Fiorillo, De Rosa, Malangone, & Maj, 2005; Ramirez Garcia, Hernandez, & Dorian, 2009; Wittmund, Nause, & Angermeyer, 2005). In order for family caregivers who are vulnerable to psychological crisis to maintain their own health and lifestyle, they need high competency to cope with stress.

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Sense of coherence (SOC) is a type of coping ability which Antonovsky identified as a central concept of the salutogenic model, and he suggested that SOC influences stress recognition style (Antonovsky & Sagy, 1986). The salutogenic model describes a health management approach that emphasizes factors that support health rather than those that cause illnesses, and it contributes to a nursing practice that adopts both pathogenesis and health-oriented viewpoints. Thus, salutogenesis reflects an emphasis on health rather than illness. This health promotion model enables a healthy lifestyle concurrent with one that is at risk for or suffering from an illness (Masumoto, 2001). Antonovsky pointed out that health exists along a continuum between a salutary extreme and a point in which health breaks down (Antonovsky, 1972), and he suggested describing the relationship in terms of a health-ease/dis-ease continuum (Antonovsky, 2001). SOC is defined as a global orientation that expresses the extent to which one experiences a pervasive and enduring, although dynamic, feeling of confidence that (a) the stimuli, deriving from one's internal and external environments in the course of living, are structured, predictable, and explicable; (b) the resources are available to one to meet the demands posed by these stimuli; and (c) these demands are challenges, worthy of investment and engagement (Antonovsky, 2001). These three components are called comprehensibility, manageability, and meaningfulness. Individuals with strong convictions of these components are mentally disciplined. According to the salutogenic model, the success or failure of handling of strain depends on the strength of SOC (Yamazaki, 1999b).

There are several studies of SOC on various subjects, including psychological distress and SOC in patients with systemic sclerosis (Hyphantis et al., 2007), the relationship of SOC and social support to patients treated for an initial episode of major depression (Skärsäter, Langius, Agren, Häggström, & Dencker, 2005), the SOC scores in average adults (Richardson & Ratner, 2005), the examination of predictive validity of the SOC model in persons with schizophrenia living in the community (Bengtsson-Tops & Hansson, 2001), improving SOC among people with mental health problems as a way to provide important opportunities for improving their life satisfaction (Langeland, Wahl, Kristoffersen, Nortvedt, & Hanestad, 2007), and the effect of the therapy based on salutogenic treatment principles

for SOC among people with mental health problems (Langeland et al., 2006).

Above all, in the recent studies for families' SOC, parents of autistic children had a lower SOC and used escape-avoidance coping mechanisms more often than parents of normally developing children (Pisula & Kossakowska, 2010), and SOC seems to be an important aspect of a caregivers' ability to cope after tending to the needs of a patient who has had a stroke (Chumbler, Rittman, & Wu, 2008). Other studies examined the relationship between caregivers' burden and poor health, and their low SOC in relatives of persons with severe mental illness (Weimand, Hedelin, Sällström, & Hall-Lord, 2010), and the strength of their SOC is significantly and positively correlated with their degree of confidence in end-of-life families' caregiving (Tzuh Tang & Li, 2008). In other studies, the manageability of SOC elements suggests that caregivers of hospice patients experience moderate difficulty (Waldrop & Rinfrette, 2009). It has been clarified that there is a relationship between SOC and family caregivers' burden, health, coping behavior, and confidence in their caregiving. Thus, using SOC is effective for grasping the ability to care and ascertaining the support that family caregivers need.

In 1993, the World Health Organization Quality of Life (WHOQOL) Group (1994) defined QOL as individuals' perceptions of their position in life in the context of the culture and value systems within which they live and in relation to their goals, expectations, standards, and concerns. This concept points to a way of life in which it is important for families to empower themselves to reconstruct their own lives in ways similar to those patients with schizophrenia who have experienced low self-esteem and self-efficacy gradually recover themselves. Namely, this ability is the SOC, and investigating the SOC and QOL of families is significant.

SOC is a factor that influences not only health but also quality of life (QOL; Eriksson, 2007). Concerning the correlation with SOC and QOL, Delgado (2007) reported that high SOC is correlated with high QOL in patients with chronic obstructive pulmonary disease. In addition, the spouses of patients with Alzheimer's disease-related depression were associated with low SOC and health-related QOL (Välimäki, Vehviläinen-Julkunen, Pietilä, & Pirttilä, 2009). Other studies suggested that

more coping resources improved health-related QOL among nursing home residents (Drageset et al., 2008), and there is a need for strengthening SOC to promote optimal QOL for family members of adults who were mentally ill (Suresky, Zauszniewski, & Bekhet, 2008).

There have been very few studies concerning the relationship between SOC and QOL of family caregivers of individuals with schizophrenia in Japan. Therefore, the purpose of this study was to clarify the SOC and QOL of caregivers of persons with schizophrenia living in the community and obtain suggestions for developing a nursing approach in community mental health.

METHODS

Participants and Procedure

Thirty-four families of persons with schizophrenia were recruited from two family associations of persons with mental illness and the outpatients departments of three psychiatric hospitals in two prefectures near Tokyo, Japan. First, the study protocol was explained to the chairman of the family associations and each hospital, and agreements were received. The chairman and chief psychiatrists or head nurses informed likely family caregiver candidates who had potential to secure time for the investigation about the study. Next, the authors were told the families' names and telephone numbers from the chairman or head nurses. The family caregivers were contacted by telephone and were explained the purpose and procedure of the study, and face-to-face interviews were arranged. Ten family caregivers chose to be interviewed in their homes, 17 families chose a conference room at the hospitals, and 7 families chose centers of family associations. Informed consent was obtained from all family caregivers before the study began, and they were assured that their personal information will be strictly confidential. All interviews were conducted by the authors and recorded with the families' consent. The study was conducted with the approval of the University of Yamanashi faculty ethics committee.

Data Collection and Analysis

The authors collected the family caregivers' sociodemographic data, which included gender, age, relation to the patient, marital status, employment, educational level, and living with or apart from the patients. In addition, the social resource and data of patients were collected, including

gender, age, and duration of the illness. The family caregivers were interviewed by the authors in Japanese using two self-reported measures and an interview guide. Two measures were used to assess the ability to cope with stress and subjective QOL: the Japanese version of SOC-13 scale (Yamazaki, 1999a, 2005, 2008) and the Japanese version of WHOQOL-26 (Tazaki, Noji, & Nakane, 1995).

The SOC-13 scale consists of 13 items, with each item ranging from 1 to 7 points and total scores ranging from 13 to 91. Higher scores indicate a higher ability to cope with stress and maintain health. Three elements are sense of comprehensibility (5 items), sense of manageability (4 items), and sense of meaningfulness (4 items). The reliability and validity of SOC-13 have been examined by Eriksson and Lindström (2005). Similarly, the reliability and validity of the Japanese version of SOC have also been guaranteed (Yamazaki, 1999a, 1999b). Cronbach's alpha was .87 in this study.

The WHOQOL-26 scale contains 26 items to measure level of cognition of individuals' four domains of QOL. Each item is rated on a 5-point scale, with scores ranging from 26 to 130. The four domains are physical domain (7 items), psychological domain (6 items), social relationship (3 items), and environment domain (8 items). A higher degree of QOL receives a higher score. Cronbach's alpha was .90 in this study. The Japanese version of WHOQOL-26 has been shown to display both reliability and validity (Tazaki & Nakane, 1997).

Statistical analyses were carried out using SPSS 16.0 J for Windows (SPSS, Tokyo, Japan), with significance set at 5% (two sided). Comparisons of SOC and QOL mean scores by demographic variables were performed using the Mann-Whitney *U* test, and Bonferroni's was utilized for the comparison of more than two groups. Comparisons of SOC and QOL scores in the two groups were divided by the median of families' age and duration of illness, and comparisons of QOL scores in the two groups were divided by the median SOC mean total scores; both were performed using the Mann-Whitney *U* test. A chi-square test was used to compare categorical variables. Spearman's *r* correlation analysis was used to measure correlations between SOC and QOL. Stepwise multiple regression analyses were carried out to analyze the variables' effect on the SOC and QOL. Dependent variables were SOC and QOL scores, and

independent variables were coded as families' gender, age, educational level, employment, living with patient, and duration of illness.

On the other hand, interviews were conducted by an interview guide that included (a) family's daily activities, (b) patients' influence on families and (c) coping with patients' states. Interviews with all family caregivers were transcribed verbatim, and all authors repeatedly reviewed the 34 interview transcripts and extracted contents related to the three elements of SOC. The extracted data elucidate the relationships among the three elements and scores and clarify the pressures of which elements support the ability to care for the family.

Most of the family caregivers were women (79.4%), 61.8% were the patient's mother, 55.9% were currently employed, 88.2% had a high school education or less, and 76.5% were living with the patients. The mean age of family caregivers was 63.3 years ($SD = 13.3$ years), with a range from 27 to 88 years. Eighteen family caregivers belonged to family associations. Sixty-five percent of patients were men, and the mean age of patients was 42.5 years ($SD = 13.0$ years), ranging from 27 to 68 years; the mean duration of illness was 19.8 years ($SD = 12.4$ years). All patients were receiving antipsychotic medication, 21 of them were using visiting nurse services, 6 were receiving home help services, and 8 used rehabilitation institutions.

RESULTS

Analysis of the SOC-13 and WHOQOL-26 Scores

The SOC mean score was 62.5 ($SD = 12.6$), and the WHOQOL mean score was 3.2 ($SD = 0.5$). When comparing SOC in males and females, comprehensibility and meaningfulness scores were higher for females than males, and manageability was higher for males; these differences were not significant. Regarding QOL, psychological and environment scores were higher for females, and physical and social relationships scores were almost equal. Concerning the comparisons of SOC and QOL scores in the two groups, which were divided by the families' median age, there were significant differences in psychological ($z = -2.04, P = .04$), environment ($z = -2.07, P = .04$), and total QOL ($z = -2.33, P = .02$). There were significant differences in the psychological and environmental scores in that the scores of the living apart patients group were higher than that of the living

with patients group ($z = -2.07, P = .04$; $z = -2.25, P = .03$). Comparisons of SOC and QOL scores in the two groups were divided by the median of duration of illness, and the total SOC score and total QOL score in the long duration group were higher than the short duration group, although the differences were not significant (Table 1). Moreover, mothers' ($n = 21$) SOC and QOL scores were slightly higher than other family members ($n = 13$), although the differences were not significant (SOC: mothers = 63.4, others = 61.1; QOL: mothers = 3.25, others = 3.05). The comparison of SOC and QOL in participants in their 50s, 60s and 70s showed higher SOC and QOL total as they advanced in age. Only environment exhibited significant differences among the three groups ($P = .03$, Table 2).

There were no significant differences among any of the demographic characteristics between the low-SOC group and the high-SOC group. When the high-SOC group was compared with the low-SOC group, the mean age, the rate of working, and the educational level were higher, and the duration of illness was longer (Table 3). The scores of the high-SOC group were significantly higher than those of the low-SOC group for psychological ($z = -2.12, P = .04$), social relationships ($z = -2.95, P = .00$), and environment ($z = -2.31, P = .02$; Table 4).

Table 5 shows that the following significant positive correlations were observed between the scores of SOC elements and domains of QOL: comprehensibility with psychological ($r = .50, P < .05$), comprehensibility with environment ($r = .56, P < .01$); manageability with social relationships ($r = .53, P < .01$) and environment ($r = .45, P < .01$); and meaningfulness with psychological ($r = .49, P < .05$), social relationships ($r = .48, P < .01$), and environment ($r = .58, P < .01$).

As a result of stepwise multiple regression analysis, educational level ($R^2 = .26, \beta = .51, P = .00$) and duration of illness ($R^2 = .26, \beta = .37, P = .03$) affected meaningfulness; family caregivers' age ($R^2 = .24, \beta = .42, P = .01$) and living with patients ($R^2 = .24, \beta = -.34, P = .04$) affected psychological; and family caregivers' age ($R^2 = .30, \beta = .35, P = .03$) affected environmental (Table 6).

Analysis of the Family Caregiver's Descriptions

Table 7 shows details of three SOC elements from extracted interview transcriptions. In comprehensibility, there were family caregivers' idea of the

Table 1. Comparison of SOC and QOL Scores by Demographic Characteristics

	Males (n = 7)		Females (n = 27)		Low age (n = 16)		High age (n = 18)		Living with (n = 26)		Living apart (n = 8)		Long duration (n = 17)		Short duration (n = 17)		z	P
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
SOC-13																		
Comprehensibility	22.4 (4.3)	23.5 (5.8)	-0.28	.80	24.1 (5.9)	22.3 (4.9)	-0.88	.38	23.1 (5.4)	23.9 (3.2)	22.1 (5.0)	22.1 (5.0)	-0.29	.79	24.4 (5.8)	22.1 (5.0)	-1.14	.26
Manageability	19.7 (4.3)	18.9 (4.7)	-0.45	.68	19.3 (4.9)	18.8 (4.3)	-0.38	.72	18.9 (4.4)	19.6 (5.4)	17.9 (4.1)	17.9 (4.1)	-0.37	.74	20.1 (4.8)	17.9 (4.1)	-1.29	.21
Meaningfulness	19.6 (3.9)	20.4 (3.6)	-0.62	.56	20.7 (3.2)	19.6 (4.1)	-0.89	.38	20.1 (3.5)	20.5 (4.4)	19.5 (4.3)	19.5 (4.3)	-0.12	.92	20.9 (2.8)	19.5 (4.3)	-1.27	.22
Total	61.4 (11.7)	62.8 (12.9)	-0.04	.97	64.1 (13.3)	60.7 (11.8)	-0.67	.14	62.0 (12.1)	64.0 (14.8)	59.6 (12.3)	59.6 (12.3)	-0.43	.68	65.4 (12.5)	59.6 (12.3)	-1.28	.21
WHOQOL-26																		
Physical	3.1 (0.4)	3.1 (0.6)	-0.06	.97	3.2 (0.6)	2.9 (0.4)	-1.53	.14	3.0 (0.5)	3.2 (0.6)	2.9 (0.4)	2.9 (0.4)	-0.67	.51	3.2 (0.6)	2.9 (0.4)	-1.76	.07
Psychological	3.0 (0.3)	3.3 (0.4)	-0.13	.22	3.3 (0.4)	3.1 (0.3)	-2.04	.04	3.1 (0.4)	3.4 (0.4)	3.1 (0.4)	3.1 (0.4)	-2.07	.04	3.3 (0.4)	3.1 (0.4)	-1.80	.08
Social relationships	3.3 (0.5)	3.3 (0.6)	-0.03	.78	3.4 (0.7)	3.3 (0.5)	-0.55	.59	3.3 (0.6)	3.3 (0.6)	3.3 (0.6)	3.3 (0.6)	-0.10	.92	3.4 (0.6)	3.3 (0.5)	-0.51	.63
Environment	3.1 (0.6)	3.3 (0.5)	-0.56	.59	3.4 (0.6)	3.0 (0.5)	-2.07	.04	3.1 (0.5)	3.3 (0.5)	3.3 (0.6)	3.3 (0.6)	-2.25	.03	3.3 (0.6)	3.3 (0.6)	-0.12	.92
Total	3.1 (0.3)	3.2 (0.4)	-0.81	.43	3.3 (0.4)	3.0 (0.3)	-2.33	.02	3.2 (0.4)	3.2 (0.5)	3.1 (0.4)	3.1 (0.4)	-0.37	.74	3.3 (0.1)	3.1 (0.4)	-0.89	.38

NOTE. Mann-Whitney U test.

need for patients' future and independent life, and they convinced themselves how to face illness. In manageability, family caregivers' attitudes included not avoiding the situation, realizing changes in the patients according to families' attitudes, families themselves making efforts, and being supported by others, garnering positive feelings in the process. In meaningfulness, family caregivers obtained or learned something from their own caregiving, found meaning in their life, and discovered how to exist as a person. We could obtain details from 21 family caregivers, and 12 of them had higher scores than mean scores (comprehensibility = 23.0, manageability = 19.0, and meaningfulness = 20.2).

DISCUSSION

The alpha coefficient for the SOC-13 scale obtained in this study (.87) was slightly higher than that obtained for the general population (.83; Masumoto, 2001), and the alpha coefficient for the WHOQOL-26 scale was .90 in this study, which suggests that the use of these scales was effective. The mean SOC score calculated in this study was higher than that obtained for the general population (mean score = 57; Yamazaki, 1999a, 1999b). In the study (Tazaki, Nakane, Kanou, Hatada, & Miyaoka, 1998), the QOL score among in-home caregivers who were employed was 3.0, whereas that of the present participants was 3.2, which was close to that for the general population (3.3; Nakane, Tazaki, & Miyaoka, 1999). It was reported that because patients with mental disorders can become a heavy burden for their family members, such members have a low QOL (Simon, 1997). The physical and psychological stability of family caregivers are easily threatened, and an individual's SOC is associated with his or her physical and psychological well-being (Eriksson & Lindström, 2006). Therefore, we expected that the SOC of the family caregivers in this study will be much lower than that of the general population; however, this was not the case, possibly because approximately half of the participants belonged to family associations, which furnished them with a social network and helped them to cope with stress through emotional and social support. In addition, the group with higher SOC scores showed significantly higher scores for all domains, except physical health, than the group with lower

Table 2. SOC and QOL Scores in the 50s, 60s, and 70s Groups

	50–59 (<i>n</i> = 9)	60–69 (<i>n</i> = 13)	70–79 (<i>n</i> = 5)	<i>P</i>
SOC-13				
Comprehensibility	22.1 ± 5.1	23.0 ± 4.9	23.5 ± 7.3	.90
Manageability	18.3 ± 4.2	19.2 ± 4.3	20.4 ± 5.9	.90
Meaningfulness	18.9 ± 3.8	19.6 ± 3.8	21.0 ± 2.6	.59
Total	59.3 ± 11.8	61.8 ± 12.3	62.8 ± 15.7	.86
WHOQOL-26				
Physical	2.8 ± 0.4	3.1 ± 0.5	3.3 ± 0.6	.38
Psychological	3.1 ± 0.4	3.2 ± 0.3	3.4 ± 0.5	.53
Social relationships	3.1 ± 0.4	3.4 ± 0.4	3.3 ± 0.8	.15
Environment	2.8 ± 0.3*	3.3 ± 0.3*	3.4 ± 0.8	.03
Total	2.9 ± 0.2	3.2 ± 0.3	3.3 ± 0.4	.08

NOTE. Bonferroni.

* Significant difference (*P* = .03).

SOC scores, and hence, it was clarified that family caregivers with high SOC scores enjoy a high QOL. Therefore, caregivers' QOL can be main-

tained or improved by inducing an increase in their SOC, that is to say, by increasing their ability to cope with stress.

Table 3. Demographic Characteristics in Low-SOC and High-SOC Groups

	Low-SOC group (<i>n</i> = 16), <i>n</i> (%)	High-SOC group (<i>n</i> = 18), <i>n</i> (%)	<i>P</i>
Family caregivers			
Age (years)			
20–49	2 (12.5)	1 (5.6)	.33*
50–59	4 (25.0)	5 (27.8)	
60–69	7 (43.8)	6 (33.3)	
70–79	3 (18.8)	2 (11.1)	
80–89	0 (0.0)	4 (22.2)	
<i>M</i> (<i>SD</i>)	60.6 (10.1)	66.6 (15.3)	.18†
Gender			
Male	2 (12.5)	5 (27.8)	.25*
Female	14 (87.5)	13 (72.2)	
Relation to the patient			
Mother	11 (68.8)	10 (62.5)	.86*
Farther	1 (6.3)	2 (11.1)	
Sibling	3 (18.8)	5 (27.8)	
Spouse	1 (6.3)	1 (5.6)	
Marital status			
Married	12 (75.0)	14 (77.8)	.36*
Single	0 (0.0)	1 (5.6)	
Divorced	2 (12.5)	0 (0.0)	
Widowed	2 (12.5)	3 (16.7)	
Employment			
Working (full/part)	8 (50.0)	11 (61.1)	.38*
Educational level			
Junior high school or below	6 (37.5)	3 (16.7)	.31*
High school or polytechnic	9 (56.3)	12 (66.7)	
University or above	1 (6.3)	3 (16.7)	
Living with patients	13 (81.2)	13 (72.2)	.42*
Patients			
Age, <i>M</i> (<i>SD</i>)	38.2 (14.1)	46.3 (11.0)	.07†
Gender			
Male	9 (56.3)	13 (72.2)	.27*
Female	14 (43.8)	5 (27.8)	
Duration of illness (years), <i>M</i> (<i>SD</i>)	17.8 (14.7)	21.6 (10.1)	.39†

* Chi-square test, Fisher's exact test.

† Mann–Whitney *U* test.

Table 4. QOL Scores in Low-SOC and High-SOC groups

	Low-SOC group (n = 16), M (SD)	High-SOC group (n = 18), M (SD)	z	P
Physical	2.93 (0.51)	3.17 (0.49)	-1.56	.126
Psychological	3.05 (0.34)	3.33 (0.39)	-2.12	.036
Social relationships	3.04 (0.54)	3.57 (0.47)	-2.95	.003
Environment	3.01 (0.35)	3.47 (0.60)	-2.31	.020
QOL total	2.97 (0.27)	3.35 (0.40)	-2.52	.011

NOTE. Mann-Whitney U test.

Based on the interview records regarding meaningfulness, some participants became more mentally tough or patient, some learned from the patients and their daily caregiving activities, and some thought that living with a patient was meaningful. Among the three factors, meaningfulness had the greatest association with motivation, and family caregivers with high scores for this factor were probably providing nursing care and focusing on the positive aspects of the difficulties that arose in their lives. It is necessary to assure individuals with low meaningfulness scores that their life has meaning and to prevent them from having continuous negative feelings about their caregiving role. As referred to in comprehensibility, it is important to help patients with their daily lives, assist them in understanding their disease, and encourage them to accept living with it to prevent emotional changes in their family caregivers because of the unstable recovery of schizophrenia.

Readiness for various problems and positive thinking, which are referred to in manageability, are necessary to prevent caregivers from being tied to their past life and allow them to advance toward their future. These two factors might also help family caregivers lead their lives without being affected by conflict and distress. Because the SOC is an index of the positive cognition of family members toward mentally ill relatives (Zauszniewski, Bekhet, & Suresky, 2009), it is considered important

to clarify the specific factors affecting SOC and its scores.

In this study, each of the SOC elements showed a moderately positive correlation with the environment domain of the QOL scale. The term *environment* refers to the essential resources required for living, such as money, residence, and information. When families with and those without such resources are compared, caregiving is clearly easier for the former group, and it is considered that family caregivers who maintain and are satisfied with their basic lifestyle tend to have a high SOC.

Awad and Voruganti (2008) reported that patients with schizophrenia are usually taken cared of by female family members. Similarly, the patients' mothers accounted for the majority of the family caregivers in this study. Many studies have shown that mothers have a worse QOL than other informal caregivers (Caqueo-Urizar & Gutiérrez-Maldonado, 2006; Jungbauer & Angermeyer, 2002; Rosenfarb, Bellack, & Aziz, 2006). However, in this study, the mothers showed slightly higher SOC and QOL scores than the other family members, which merits further investigation. Among the demographic data, the educational level of the family caregivers and the duration of illness were considered to influence meaningfulness, the age of the family caregiver and whether they were living with the patient were considered to influence psychological health, and the age of the family caregiver was considered to

Table 5. Spearman's Correlation Coefficients of SOC Elements With QOL Domains

	1	2	3	4	5	6	7
1 Comprehensibility	1.000	.839**	.703**	.369	.498*	.381	.560**
2 Manageability		1.000	.713**	.305	.364	.528**	.454**
3 Meaningfulness			1.000	.255	.491*	.482**	.581**
4 Physical				1.000	.502**	.169	.435*
5 Psychological					1.000	.316	.490**
6 Social relationships						1.000	.477**
7 Environment							1.000

* P < .05.

** P < .01.

Table 6. Stepwise Multiple Regression Analysis for Demographic Variables and SOC, QOL

	R^2	F	β	t	P
SOC meaningfulness					
Educational level (low = 0, high = 1)	.264	5.556	.510	3.099	.004
Duration of illness (years)			.368	2.236	.033
QOL psychological					
Family caregivers' age (years)	.238	4.489	.423	2.649	.013
Living (apart from patients = 0, with patients = 1)			-.340	-2.215	.042
QOL environment					
Family caregivers' age (years)	.296	6.532	.351	2.252	.032

NOTE. R^2 = coefficient of determination; β = standardized partial regression coefficient.

influence the environment. Regarding educational level, the results were consistent with the results of a previous report that found that the higher the education level, the higher the SOC score (Volanen, Lahelma, Silventoinen, & Suominen, 2004). It is believed that illnesses of longer duration are associated with increased opportunities to realize the meaning and value of providing medical care to patients, as performing these duties more frequently is expected to result in a feeling of greater meaningfulness. Table 2 shows that the scores for psychological health and environment increased with age. The psychological domain of the WHO-QOL-26 scale revealed negative and positive feelings, self-esteem, spirituality, religion, personal beliefs, and so forth. Feelings about matters and people, self-esteem, values, and beliefs are generally established with age and are not significantly affected by an individual's surroundings after a certain age. The same probably applies to one's environment, and hence, it is considered that older family caregivers can maintain relatively high psychological health and environment QOL scores.

Because the participants who were not living with the patient showed significantly higher scores for psychological health, living with a patient might be associated with a poor psychological state. It is estimated that those living with patients have to adjust to the patient's pace, experience inconveniences such as decreased pleasure, and can become discouraged and irritated by the patient's behavior. However, it is also inevitable that the participants support the patients. It has been reported that living with family caregivers might relieve symptoms and assist continuous treatment in some patients, whereas living with parents might be associated with aggravating the subjective well-being of some outpatients with schizophrenia (Iwawaki, Noju, Mori, Muroi, & Komahashi, 2004).

When caregivers living with and those living apart from the patients were compared, the former were more likely to note symptoms and associated life disturbances, as well as chronic aggravation. The role of home-visit nursing care, which was utilized by 61.8% of the present family caregivers, includes the provision of support to reduce the burden on family caregivers and help them and patients sustain community-based lives (Setoya et al., 2011). In an investigation of community-based mental illness in 2005, 76.8% of the participants were living with their family members (Cabinet Office, 2011). Because the number of outpatients receiving treatment is increasing, and family caregivers are more frequently supporting patients because of a shift from inpatient to community care, it is essential to ensure the continuous provision of family-based medical welfare services. Because no management system for community care has been established, well-developed home-visit nursing care and the dissemination of assertive community treatment support (Sono, Oshima, & Ito, 2008), which has beneficial effects on patients and their family caregivers, are desirable. Home-visit nursing care is often provided at a patient's residence, and visiting nurses have many opportunities to meet the people living with the patient. This care allows nurses to assess how living together affects patients' symptoms and their family caregivers' daily lives. A nursing care is needed after the relationship between the patient and family is ascertained.

Although it is important for family caregivers to spend time apart from patients, many caregivers cannot forget about the patient in their care or mentally refresh themselves sufficiently when they are apart. Most caregivers lack sufficient time to refresh themselves. However, the family caregivers exert energy on patients regardless of whether they are in proximity to the patients. In either situation,

Table 7. Details of Three SOC Elements in Family Caregivers

Comprehensibility (difficulties and problems can be understood and predicted)	Manageability (it is felt that difficulties can be overcome and problems can be solved)	Meaningfulness (it is thought that difficulties and problems have meaning and values)
"As there is no guarantee of a complete cure, I hope my child will be able to be independent her own life."(M:26-21-22)	"A primary physician admired my efforts to date, which helped me to continue." (M:20-16-17)	"It is common for parents to face difficulties." (M:26-21-22, M:30-22-22)
"I'm thinking about what is necessary and empowering for my child's future." (M:34-27-24)	"As thinking too much does not solve problems, I always try to take action when something occurs." (M:30-24-24)	"I'm taking care of my child so that I don't get bored or senile." (M:23-16-19) "I'm learning from my child every day." (F:28-24-26)
"I'm looking for people and facilities that will be able to support my child after her parents die." (F:28-24-26)	"I had better deal with problems as much as is reasonably possible, instead of becoming neglectful." (M:26-21-22)	"I have realized many things by experiencing sadness and have become patient through supporting my family member with schizophrenia."
"It is out of my hands." (M:20-16-17, M:18-13-21)	"I prevent myself from regarding difficulties and problems as annoying." (M:34-27-24, Si:26-22-25)	(M:34-27-24) "I'm glad that I have become mentally tough through spending time with my child." (M:24-21-23)
"Because my son has schizophrenia, there is no help for him. I need to think about improving the situation as much as possible." (F:28-24-26)	"I'm getting information about how to cope with difficulties and problems from technical books and the internet." (Si:32-24-22, M:33-28-27)	"I became positive after realizing that I had been provided with an opportunity to learn about mental illness." (Si:23-19-21)
"I'm beginning to realize that my son has to live with the illness." (M:20-21-17)	"If I try to understand my child's feelings, it might help her to be more stable." (M:22-17-18)	"I'm satisfied with my life now, which is all that matters." (M:30-25-22)
"Illness should not be concealed from the community in order to live in the community." (M:32-26-28, Si:32-24-22)	"It is an important to ensure that the patient maintains a stable condition for as long as possible." (M:30-22-22, M:26-21-22)	"I'm being tested with invisible burdens." (M:26-21-22)
"Even if my husband appears strange, his status as my husband remains unchanged." (Sp:21-14-17)	"A continuous and sustained appeal to the government is one step in promoting improvement." (M:33-28-27)	"Considering how to face my ill child gives my life meaning." (M:33-28-27)
"I was able to accept the illness as I acknowledged the symptoms and mood swings suffered in my care." (Si:26-22-23)	"I believe that I can manage to live with my child because I have a desire to live." (M:32-26-28)	"Human beings are always having problems." (Si:20-22-18, F:16-13-14)
"I'm trying to acknowledge things that are slightly improving." (M:30-24-24, M:24-16-22)	"I'm having a hard time now, but things will probably get better in time." (M:30-25-22)	"It is important for human beings to live honestly without showing off or having pride." (M:24-21-23)
	"I can consult my neighbors, who always care about me." (M:24-16-22)	"I have suffered very badly, but I think that each of my experiences has been meaningful." (M:34-27-24)

NOTE. M = mother; F = father; Sp = spouse; Si = sibling. a-b-c reveals three element scores.

they are not able to bear long-term care. Therefore, it is necessary to develop a community-based educational intervention that allows family caregivers to accept their role as long-term providers of care and at minimum recognize the importance of spending time for themselves.

In this study, the total SOC scores of family caregivers who were in their 50s or older showed a tendency to increase with age. In the survey of the Japanese population, SOC scores tended to be higher with advancing age (Yamazaki, 2003).

In an investigation involving Finnish men and women, the oldest group showed the highest SOC score in both genders (Volanen et al., 2004). Neikrug (2003) indicated that elderly persons have higher SOC scores than younger people. The data related to the elements of family

caregivers in Table 7 indicate that elderly caregivers took time and understood and recognized their patients. Through trial and error, they knew the range of their limitations, became confident of their own coping mechanisms, and became aware through their caregiving. Because this study did not compare participants' SOC scores with age, we make no assertion. However, it seems that when family caregivers advance in age, understanding of their range abilities, confidence, and awareness increase, and they are determined not to struggle themselves.

In this study, older family caregivers managed to maintain their SOC and were capable of providing nursing care, but such a favorable state will not necessarily be maintained for the next 10 or 20 years because the present family caregivers had a

mean age of 63.3. Japanese people have traditionally tended to take family caregiving for granted. This idea remains, and many family caregivers spend most of their time indoors taking care of the patient in their charge without any support from the community. It is considered necessary for patients, their family caregivers, mental health professionals, and the whole community to adapt to the concept of social support instead of pursuing traditional ideas. It is also important to create settings in which mutual support is possible and patients and their family caregivers do not suffer and for home health care in Japan to promote the idea of the entire society being responsible for not only persons with mental disorders but also the elderly people and the people with disabilities.

Finally, family caregivers accumulate a life history with persons with schizophrenia. Psychiatric nurses should provide psychoeducation (Landverk & Kane, 1998) to draw out the family caregivers' real abilities and give them confidence, as well as develop opportunities for them to garner peer support, in which family caregivers with long-term care experiences support less experienced family caregivers. Psychiatric nurses need to take a role as coordinator.

We will now explain the limitations of this study. The mean age of the study participants was high. Many of them had social networks, were caring for a patient with schizophrenia that had developed the disease quite a while ago, were experienced in dealing with their family caregiver's condition, and were receiving support. It is necessary to conduct longitudinal studies involving family caregivers of patients with various degrees of schizophrenia and family caregivers of all ages who are receiving poor support to evaluate changes in their SOC and QOL. Although none of the factors influencing SOC and QOL were found to make large contributions, they acted as elucidating factors. Thus, case-control studies involving more participants should be conducted to clarify the factors that influence SOC and QOL.

CONCLUSION

Family caregivers of patients with schizophrenia living in the community showed relatively high SOC and QOL scores, possibly because they were involved in society, including family associations, and so had developed an ability to cope with stress through the experience of caregiving that they had

acquired over the years. The family caregivers with higher SOC scores showed higher QOL scores, and the SOC and QOL scores of those who were in their 50s or older showed a tendency to increase with age. Regarding older family caregivers, the feelings of satisfaction through understanding their own environments were appropriate and may have increased their SOC.

Furthermore, living with a patient was estimated to be associated with low-level psychological problems in patients' family caregivers. These results suggest that a continuous approach is necessary to support the well-being of family caregivers who provide in-home care for persons with schizophrenia.

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