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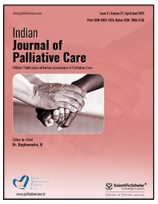

Original Article

Predictors of Perceived Family Sense of Coherence in Parents of Children with Cancer

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ABSTRACT

Objectives: Despite improvement in childhood cancer survival in recent decades, it is still an extremely challenging health condition for parents. The impacts of childhood cancer on the family as a whole are recently interested by researchers. Family coherence is one of these concepts and health-care providers need to understand the perception of parents of family coherence. This study aimed to assess the correlation between perceived family sense of coherence (SOC) in parents of children with cancer; with socio-demographic, psycho-emotional and family-related variables.

Materials and Methods: This cross-sectional correlational study recruited 125 parents of children with cancer attending hospitals in Tehran in 2020, selected by convenience sampling method. The correlation between family SOC and demographic variables, chronic sorrow, coping behaviours, family functioning and social support was investigated using regression analysis.

Results: The mean score perceived sense of family coherence in parents of children with cancer was higher in fathers (Beta = 0.17, P = 0.02), urban residents (beta = –0.2, P = 0.01) and homeowners (beta = –0.27, P = 0.001). The sense of family coherence had positive correlations with income grade (beta = 0.27, P = 0.006), coping behaviours (beta = 1.28, P = 0.002), social support (beta = 0.67, P = 0.001), negative correlations with the disturbance in family problem-solving (beta = –0.28, P = 0.006) and chronic sorrow (beta=-0.39, P = 0.001).

Conclusion: The present study expanded the concept of family SOC in nursing knowledge and attracted the attention of the providers of family-centred care to the parents of children with cancer and their concerns, which directly and indirectly affect the entire family's health.

Keywords: Cancer, Child, Family sense of coherence

INTRODUCTION

The childhood cancer crude incidence rate in Iran has been reported as 16.8 per 100,000 (95% CI: 9.04–24.56) for males and 16.56 per 100,000 (95% CI: 10.51–22.62) for females.[1] Due to the progress made in initial diagnosis and treatment, the childhood cancer survival rate has significantly increased in recent decades.[2] A cancer diagnosis is a very stressful experience and presents a challenge to all members of the family that try to come to terms with the disease and the new circumstances.[3] The trajectory begins with the shock of the diagnosis. According to many studies, parents of children with cancer believe the diagnosis phase of the disease is the most impactful stage.[4]

Cancer faces both child and family psychological, social and economic challenges and affects all dimensions of life and the health of family members. Many studies have documented these consequences.[5,6] Some commonly cited cases include disrupted family processes, depression and anxiety in family members, spiritual distress, maladaptive religious coping, chronic sorrow, using unhealthy coping methods by family members and changes in their perception of family coherence.[2,7,8] The family sense of coherence (SOC) in cancer patients and their families is among the concepts that have attracted much attention from researchers.[9]

The concept of SOC was introduced in the theory of Antonovsky, with the premise that stressors are the integral parts of life. The concept has three components. Comprehensibility refers to the way one evaluates external and internal stimuli (stressors) in terms of coherence, clarity and structuring. Manageability is to the extent that the

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person feels that his resources are sufficient to deal with the stimulus. Meaningfulness defines a person's attitude toward the stressors, whether they see it as an opportunity worth spending time and energy on growth or as a factor that causes burnout and upsets life.[10] The concept is used for individuals, families, societies and groups. The family SOC was the concept which the theoretical basis of the study was built.

The family SOC also is defined as the general view of the family that the situation at hand is predictable, understandable and structured and that the family has significant resources available that can help it to cope with tensions and that it is worthwhile to invest in meeting challenging demands.[11] The high level of SOC is a protective factor for persons from stress and are associated with less health problems. In fact, SOC explains people's ability to understand a particular stressful situation and effective use of their available resources to achieve adaptation. In a family, SOC is an essential resource of members to cope with stressful situations, also helps family resilience in life crisis.[12,13]

One such stressful situation for children and their families is cancer diagnosis and treatment. Studies have shown that the level of family SOC changes over time in parents of children with cancer and the pattern of these changes in the perceptions of family SOC is different between parents.[14] For a positive adjustment of a family, the effective use of families' resources is essential.[12] Hence, a family's SOC is developed on the persons' social, cultural and ethnic context.[12] In addition, according to studies, various factors affect the family SOC level, include: (a) Demographic factors, such as age and gender and health status, (b) psychological states of family members, such as depression, anxiety and chronic sorrow, (c) factors related to the functioning of the family, such as the methods of childrearing, (d) factors related to the social function of the family, such as the professional life of the family members, their social relationships, the level of social support available to them, and their religious adaptability and finally (e) factors related to the coping strategies of the family, such as self-management skills.[15-17]

The conceptual framework consists of the concepts related to the factors affecting the sense of family cohesion. These concepts include chronic grief, family functioning, family social support and coping behaviours.

One of the psychological factors that can affect family SOC is the concept of chronic sorrow, which is a term used to describe the emotional suffering of illness-related loss and lifelong or chronic disability[18] Characteristics of chronic sorrow include (a) a prolonged feeling of sorrow or grief with no probable end in sight; (b) the periodical feeling of sadness and sorrow; (c) sadness and grief that is exacerbated by internal and external stimuli and is a reminder of fear, despair and loss to the individual; and (d) progressive sadness and grief.[19,20] Childhood cancer is one of the common chronic diseases that can lead to chronic sorrow in the child's parents.[21]

Family functioning refers to the structural and social characteristics of the family milieu and comprises interactions, relationships and levels of conflict and attachment, as well as the structure and quality of relationships, inside the family.[22] According to McMaster's model which is a behavioural model (1978), family functioning have seven components of Problem Solving, Communication, Roles, Affective Responsiveness, Affective Involvement, Behaviour Control and General Functioning.[23,24] Studies have demonstrated that family functioning is reinforced by a high sense of cohesion among its members, but it is adversely affected by the occurrence of childhood cancer.[25]

Coping behaviours are continuous changes in behavioural patterns used by individuals to achieve a balance between their internal needs and external demands in critical situations.[26] Coping behaviours are categorised in different ways, for example, according to the coping method (emotion-oriented and problem-oriented), coping focus (problem vs. emotion), coping form (behavioural, emotional and cognitive) and the individual's role in it (passive and active).[27] The following coping methods are cited in relation to the parents of children with chronic health conditions: Adaptive coping, with features of competence, optimism, acceptance and seeking support; and non-adaptive coping, with features of withdrawal, feeling of being different and irritability.[28]

Social support means an individual's perception or real experience of being supported by others with respect and feeling that they are part of a social network that can provide help if required. Categories of social support include informational, instrumental and emotional support.[29] According to studies, social support is one of the main components of FSOC and directly affects its level.[30] However, the effect of this component on family SOC in parents of children with cancer has not been studied in Iran.

Comprehensive and family-oriented care of children with cancer require nurses in this field to be knowledgeable about the psychological factors affecting family health and use this knowledge in planning quality care. Therefore, variables affecting family SOC in various cultural contexts have attracted the attention of nursing researchers in the field of paediatric cancer in recent years. On reviewing the available literature, the authors were not able to find any study on the determining predictor factors of the SOC in the families of children with cancer. Thus, the present study investigates some of the predictors of the perception of the family SOC by parents. The studied factors are family demographic characteristics, chronic sorrow, family functioning, coping behaviours and family social support.

MATERIALS AND METHODS

Design and setting

This correlational cross-sectional study was conducted on parents of children with cancer undergoing treatment in four paediatric teaching hospitals in Tehran (affiliated to Shahid Beheshti University of Medical Sciences, Tehran University of Medical Sciences and Iran University of Medical Sciences), which were selected for serving the highest number of children with cancer.

Sampling

A convenience sampling method was conducted between March and September of 2020, to invite eligible participants. The inclusion criteria included; (a) being the biological parent of a child under 15 years old with a confirmed diagnosis of any cancer, at least for 6 months, (b) being literate, (c) having willing to participate in the study, (d) not having any cognition or sensual disorder, (e) not having a health-related discipline degree, (f) not having a history of being under treatment for mental health problem at least for the last 6 months, (g) not having another child with a chronic health condition, (h) not having another chronic health condition in their child with cancer, (i) living as a nuclear family structure and (j) not being a single parent for any reason. The participants were excluded from the study in case filling out questionnaires incomplete. The minimum required sample size was estimated to be 110 people. Predicting the probable loss of sample, 125 parents were invited to the study.

Measures

A total of six instruments were used in the present study as described below. Instruments with no Persian version were translated into Persian by the forward-backward translation method. Face and content validity of all instruments (except Kendall chronic sorrow) was confirmed by ten experts in paediatric nursing, psychiatrists, psychologists and nurses working in paediatric wards (because of their ongoing contact with children's parents). To determine reliability, 15 eligible mothers were asked to complete the questionnaires twice with a 2-week interval and Cronbach's alpha coefficient and Interclass Correlation Coefficient (ICC) were determined for each instrument.

The first instrument was family socio-demographic characteristics questionnaire**:** This researcher-made questionnaire contained 11 items, including child's age and gender, parents' gender, child's birth order, parents' education, occupation, income, support and insurance organisations, place and type of residence and the number of family members.

The second questionnaire was Family SOC Scale. This 29-items scale was developed to assess the way person view life and use available resistance resources to improve and maintain health. Each item is measured on a semantic scale ranged from1 to 7. The total score range from 29 to 203, where higher scores indicate higher family coherence.[11] In the present study, its ICC and Cronbach's alpha Coefficient Correlation were 0.99 and 0.95, respectively.

The third instrument was Coping Health Inventory for Parents. This 45-item, self-reporting scale was designed to determine coping patterns and their effectiveness in parents of children with a chronic disease or disability. Each item defines a behaviour that may be used by parents to cope with their child's illness. The parent should first choose between the following three options: "Have not used," "could not be used," and "have used," and then rate the effectiveness of the behaviour (on a 4-point Likert scale from not useful to very useful) if he/she uses that behaviour. This tool has three subscales: "Maintaining family integrity, cooperation and optimism in situations," "maintaining social support, self-esteem and mental stability" and "learning from other parents in similar situations and consulting the medical team," with the total score ranging from 45 to 180 points.[31] This tool was translated into Persian in a descriptive cross-sectional study conducted on 161 mothers of children with chronic diseases.[32] In the present study, its ICC and Cronbach's alpha Coefficient Correlation were 0.90 and 0.99, respectively.

The fourth questionnaire was Kendall's chronic sorrow scale, designed to quantify the concept of chronic sorrow. This scale has 18 items based on a Likert scale from "totally agree" to "totally disagree" for each item. Scores less than 38 suggest no chronic sorrow, between 39 and 82, possible chronic sorrow and higher than 82, chronic sorrow.[19] The validity and reliability of the Persian version of this scale were determined in a study on parents of children with cancer. In that study, its ICC and Cronbach's alpha Coefficient were 0.86 and 0.84, respectively.[21]

The fifth questionnaire was Family Functioning Scale, developed in 1983 based on McMaster's model of family functioning. This model determines structural, occupational and interactional characteristics of the family in seven subscales, including problem-solving (6 items), communications (9 items), roles (11 items), emotional responsiveness (7 items), emotional attachment (7 items), behavioural control (9 items) and general family functioning (12 items), each scoring between one and four points. Scores ≥2 indicate family dysfunction. Scores obtained for each component indicate the level of family functioning in that component. The scores of the items in each subscale are summed and divided by the total number of items in that subscale. Since different numbers have been reported in different countries for healthy and clinical groups, the mean score of parents for each dimension of family functioning was taken as the cutoff point in the present study, and thus, scores higher than the mean value for each dimension were reported as unhealthy functioning and scores lower than that as healthy family functioning.[24] This scale was translated

into Persian and its psychometric properties was assessed in 2006.[33] Its ICC and Cronbach's alpha Coefficient was 0.86 and 0.84, respectively.

The 27-item self-reporting Social Support Questionnaire was developed in 1983 to assess social support in two dimensions: The mean network, which is the number of people assumed to be available for social support and satisfaction, which indicates the respondent's satisfaction with this number of social support people. Each section contains two items: the first item mentions a specific situation. The participant should think and name people (maximum of 9) that they feel would help them in that situation. The second item concerns a person's satisfaction with their perceived social support in that particular situation, which is determined on a 6-point scale from highly dissatisfied to highly satisfied. A higher mean number of people assumed to be available for social support and also a higher mean level of the individual's satisfaction with this number of social support people indicates the existence of stronger social support.[34] Nasseh *et al*. (2011) translated this tool into Persian and assessed its psychometric properties in Iran. The Cronbach's alpha was 0.95 for the network dimension and 0.96 for social support.[35] In the present study, its ICC and Cronbach's alpha Coefficient Correlation were 0.99 and 0.88, respectively.

Data collection

The present study received the approval of the committees of ethics in human research of Shahid Beheshti Universities of Medical Sciences. To reach eligible subjects for participation in the study, the researcher visited the admission departments and paediatric oncology clinics of the above four hospitals during morning and evening shifts 4 days per week for 2 months. After reviewing the child's records and obtaining initial information, the researcher visited parents and included them in the study based on the inclusion criteria. Based on admission rates, the number of beds in the paediatric oncology wards and the number of outpatients in each hospital, 20 subjects were included from Shohada-e-Tajrish, 35 from Mofid, 35 from Ali Asghar and 35 from the Pediatric Medical Center Hospitals. Eligible subjects were selected, and, considering the high number of questions, 1.5 h were allowed for completing the questionnaire. Families attending the clinics completed the questionnaires while waiting to see the physician and families of hospitalised children had one day to complete them.

Data analysis

The data obtained from the questionnaires were analysed using SPSS statistical software (version 21.0; SPSS Inc., Chicago, IL, USA). First, demographic data were described using frequency, mean and standard deviation and then data from the variables and their components were described using central and dispersion indices. After confirming the normal distribution of the variables by the Kolmogorov-Smirnov test, Pearson Correlation Coefficient was used to assess the relationship between pairs of variables. Regression analysis was used to explore the relationship between various variables and the main variable and then, a regression model was formed to determine these relationships. An $\alpha < 0.05$ was taken as statistically significant and the level of correlation was strong.

Ethical considerations

This study was ethically approved by the research ethics committee of Shahid Beheshti University of Medical Sciences (IR. SBMU. PHARMACY. REC. 1399. 195). All the parents received information about the aims of the research. They were given information about the voluntary participation in the study and confidentiality of their data.

RESULTS

A total of 125 parents participated in the study, of whom, 80.8% were female (mothers). The majority of the mothers were housewives (80%) and had high school diploma (35.2%). The majority of parents (60%) considered the family income in the low range. Most of the participants' children were male (62%), most of the families lived in city (77%). The children's mean age was 6.32 (3.44) years. The diagnosis majority of children was acute lymphocytic leukaemia (79%). According to the results, the majority of the participants had high degree of perceived family SOC (46%), with a mean total score of 122.33 (32.85). All families suffered from chronic sorrow (100%), with a mean total score 87.18 (11.64). The mean score of the families' coping behaviour was 92.18 (27.49). Most of the families had moderate functioning (66%), with a mean total score of family functioning of 139.42 (26.66). Furthermore, majority of the families reported poor social support (70%), with a mean total score of 181.53 (80.59). [Table 1] shows descriptive statistics of total and subscales' scores of the studied variables. According to the results of linear Regression Analysis for investigating the correlation between participants' demographic variables and the family SOC [Table 2], parent's gender, family's level of income and place and type of residency were significantly correlated with the family SOC ($P < 0.05$). According to the information of [Table 3], linear Regression Analysis for investigating the correlation between four studied variables and the family SOC, chronic sorrow, coping behaviours and its subscale of maintaining social support, self-esteem and psychological stability, social support and its subscale of satisfaction and the subscale of problem solving of family functioning were significantly correlated with the family SOC ($P < 0.05$).

Multiple regressions were performed to evaluate the significant correlation of all variables with the sense of family cohesion [Table 4]. The results showed a significant positive correlation between coping behaviours, social support and family income level. There was a negative correlation between

overall family functioning and family SOC. Furthermore, the family SOC was significantly lower in rural families than in urban families. Families with rented property had significantly less perceived family SOC compare with families with personal property.

DISCUSSION

The present study results showed that among demographic variables, parent's gender, family level of income and place and type of residence predict the perceived family SOC in parents of children with cancer, so that male gender (fathers), higher level of family income, urban families and living in personal property increase parents' family SOC.

In the present study, gender played a predictive role in the family's sense of cohesion, which is consistent with other studies in this field.[36-38] In some studies, men had a greater sense of cohesion than women.[37-41] Studies on the sense of family cohesion from the perspective of parents of children with cancer and autism found no difference between the scores of men and women.[14,42] However, in another study on parents of children with developmental disabilities, mothers showed less sense of family cohesion.[43] It seems that this inconsistency result from dependence of SOC to more than single socio-demographic factor.

According Antonovsky (1987 and 2000), financial situation of person or family is an essential generalised resistance resource of resilience in most societies and poverty is among health-threatening stressors.[44,45] By the term of generalised resistance resources, Antonovsky means a characteristic of a person, family or society that in nature could be physically (genetic and constitutional), psychologically, culturally, spiritually, etc., that is effective in management (combating or avoiding) a wide variety of stressors to prevent tension.[11,46] The present study confirms this relationship, considering the higher affluence of families with higher income as a generalised resistance resource. In the study of Volanen (2011), affluence and job-related factors were considered as general resistance resources of resilience and the lack of these resources was regarded among stressors damaging family SOC.[47] Given the higher affluence and job opportunities in cities compared to rural areas, it can be concluded that the present study concurs with that study and the place of living can have a predictive role in determining family SOC.

The results of the present study suggest that there is a negative correlation between chronic sorrow and perceived family SOC in parents of children with cancer. In a study by Konttinen *et al*. (2008), a negative correlation was observed between symptoms of depression and anxiety and with SOC.[48] In Myrin and Lagerström (2008), entitled investigating the correlation of SOC and psychosocial factors in adolescents, multivariate regression analysis showed that five factors negatively affecting this SOC, including dissatisfaction with life, feeling of depression, concerns about family members, poor mental health and female gender.[49] In a study by Volanen *et al*. (2004), to measure factors relating to a SOC in women and men, the results showed that the SOC is strongly related to the resources of psycho-emotional resilience.[50] In Mollerberg *et al*. study (2019), investigating correlation of family SOC with hope, anxiety and symptoms of depression in people with cancer in the palliative phase and their family members, the results showed that family SOC has a significant relationship with the tested psychological variables. A strong family SOC was associated with higher hope and lower anxiety and depression symptoms.[13] The above studies suggest a strong relationship between psycho-emotional factors and a personal of family SOC. Chronic sorrow is one of the psychological reactions of caregivers of people with chronic conditions which are positively associated with depression and other mental health problems.

According to the present study results, among coping behaviours' dimensions, maintaining social support, self-

Table 1: The mean and standard deviation for variables and their subscales

variables	Frequency	Mean	Std. Deviation
Chronic Sorrow	125	87/18	11/64
Coping behaviors	125	92/18	27/49
1- Maintaining family integration, cooperation, and an optimistic definition of the situation	125	38/95	10/81
2- Maintaining social support, self-esteem, and psychological stability	125	40/45	11/28
3- Understanding the medical situation through communication with other parents and consultation with medical staff	125	12/78	6/76
Family Functioning	125	139/42	26/66
1-General Functioning	125	26/74	5/52
2-Problem Solving	125	13/02	3/46
3-Communication	125	20/47	4/66
4-Roles	125	27/08	5/41
5-Affective Responsiveness	125	13/94	3/46
6- Affective Involvement	125	17/31	3/44
7-Behavior Control	125	20/87	4/05
Social Support	125	181/53	80/59
1-Availability	125	84/45	49/18
2-Satisfaction	125	97/08	46/17
Family Sense of Coherence	125	122/23	32/85
1-Comprehesibility	125	37/41	10/93
2-Manageability	125	42/38	11/82
3-Meaningfulness	125	42/45	11/31

Table 2: Regression analysis for assessing the correlation between the demographic factors and FSOC

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Deviation	Beta		
FSOC					
Constant	77/53	29/57		2/62	0/001
Child's age	0/304	0/744	0/041	0/530	0/597
The number of family members	7/71	5/90	0/213	-1/31	0/194
Child's birth order	-7/39	6/08	-0/190	-1/22	0/227
Parents' gender	14/07	5/98	0/169	2/36	0/020*
Child's gender	-0/108	4/91	-0/002	0/022	0/983
Father's education	1/65	4/03	0/046	0/409	0/683
Mother's education	6/65	4/44	0/214	1/50	0/137
Father's occupation	-5/56	3/88	-0/112	-1/43	0/155
Mother's occupation	1/67	3/28	0/044	0/510	0/611
Income	16/66	5/96	0/269	2/80	0/006*
Support and insurance organizations	2/44	9/35	0/019	0/261	0/795
Place of residence	-15/61	6/41	-0/201	-2/44	0/016*
Type of residence	-14/15	3/97	-/269	-3/56	0/001*

Table 3: Summary of Regression analysis for the other variables and their values predicting FSOC

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig
	B	Std. Deviation	Beta		
FSOC and Chronic Sorrow				10/61	0/001
Constant	218/63	20/60			
Family Chronic Sorrow	1/106	0/234	0/392	-4/72	**0/001***
FSOC and Coping Behaviors					
Constant	52/41	26/87		3/113	0/002
Maintaining family integration, cooperation, and an optimistic definition of the situation	1/350	0/529	0/062	0/540	0/383
Maintaining social support, self-esteem, and psychological stability	1/09	0/479	0/263	2/15	**0/012***
Understanding the medical situation through communication with other parents and consultation with medical staff	-1/48	0/996	-0/303	1/48	0/142
Coping Behaviors	-1/53	0/494	1/282	3/10	**0/002***
FSOC and Social Support					
Constant	62/62	5/81		10/76	0/001
Availability	0/011	0/081	0/016	0/137	0/892
Satisfaction	0/605	0/098	0/701	6/17	**0/001***
Social Support	0/277	0/027	0/679	10/26	**0/001***
Constant	262/79	9/62		27/71	0/001
Problem Solving	2/70	0/961	-0/284	-2/81	**0/006***
Communication	-1/35	0/758	-0/191	-1/87	0/078
Roles	251	0/842	-0/041	-0/170	0/766
Affective Responsiveness	0/471	0/927	-0/050	-0/703	0/613
Affective Involvement	-1/498	0/772	-0/157	-0/703	0/055
Affective Involvement	-1/001	0/716	-0/124	-1/75	0/162
General Functioning	-1/163	0/707	-0/944	-1/65	0/103
Family Functioning	-1/162	0/708	-0/944	-1/65	0/104

esteem and mental stability, have positive correlations with the perceived family SOC in parents of children with cancer.

In a study by Saboonchi *et al*. (2009), studying coping, the SOC and its dimensions in patients with chronic heart failure,

Table 4: Multivariate regression analysis for variables' simultaneous effect on FSOC perceived by parents

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Deviation	Beta		
FSOC					
Constant	167/78	24/67		6/80	0/001
Coping Behaviors	0/237	0/066	0/198	3/59	**0/001***
Social Support	0/087	0/026	0/191	3/02	**0/001***
Chronic Sorrow	0/247	0/145	0/087	1/70	0/091
Family Functioning	-0/642	0/086	-0/521	-7/46	**0/001***
parents' gender	-1/38	2/93	-0/021	-0/471	0/639
Income	7/03	3/23	0/109	2/17	**0/012***
Place of residence	-9/32	3/67	-0/120	-2/54	**0/012***
Type of residence	-5/94	2/45	-0/113	-2/42	**0/017***

the results showed that the SOC has a negative relationship with denial, behavioural apathy and self-blame and a positive relationship with acceptance. They concluded that using adaptive coping strategies and the SOC impact emotional health.[51] In a longitudinal study entitled "The sense of coherence and its psychological effects on people with spinal injuries," Kennedy *et al*. (2010) showed that the SOC has an essential role in people's mental health and a relationship with their long-term adaptation to spinal injuries.[52] These studies suggest that there is a positive relationship between the SOC and adaptive coping behaviours.

The present study results showed a positive correlation between the parents' social support and perceived family SOC in parents of children with cancer. In this group of people, among social support dimensions, only satisfaction shows a positive correlation with perceived family SOC This result agrees with that obtained in the study by Marsh *et al*. (2007) on the relationship between social support and the SOC.[36] The results of this study are consistent with other studies on parents of deaf children with developmental disabilities, hearing problems, autism and IQ problems.[42,43,53,54] Social support has been introduced as one of the most important resources in the model of sense of cohesion. This factor is directly related to the factors affecting the mental and social health of individuals and its promotion causes positive changes in health-related variables.[13,53]

The present study shows that perceived family SOC in parents of children with cancer has a positive correlation with parents' problem-solving skills and total family functioning score. This finding concurs with the theoretical framework of the study and the results of similar studies on parents of children with intellectual problems, cancer and hearing problems.[54,55] Lindstrom *et al*. (2012) regarded mutual kindness and easy communication with parents as the most prominent family-related variables. In a study on family SOC and family adaptation in childbearing couples, family SOC had a direct effect on family and marital functioning and symptoms of depression in both partners. The family SOC also moderated the effects of stress on family and marital functioning and symptoms of depression in pregnant women. This study showed evidence of the significant role of family SOC in improving family functioning and reducing symptoms of depression in the period of transition to parenthood. In terms of the correlation between family functioning and family SOC, these results agree with those of the present study.[56]

The results of multivariate regression analysis showed a positive correlation between coping behaviours, social support and family level of income with perceived family SOC in parents of children with cancer. Moreover, a negative correlation was found between perceived family SOC in these parents and the overall family dysfunction. Place and type of residence still have a role in predicting the perceived FSOC in parents of children with cancer. However, the other variables had no significant role in explaining the family coherence.

Limitations

One of the limitations of this study was the small number of samples in some subgroups, such as the number of fathers compared to mothers, which could affect the results. Although participants tried to fill out the questionnaires in a stable situation, their psychological, emotional and emotional status could affect the responses, which is uncontrollable. There were few studies investigating family SOC and its related factors in populations of parents of children with health problems, so for a clear deduction in this regard, conducting more studies is recommended.

CONCLUSION

The present study results can have a variety of applications in different nursing-research, clinical services and nursing training and management fields. It paves the way for further descriptive-correlational studies to investigate other predicting factors in patients with cancer and examination of these factors in families of patients with other diseases. Moreover, the present study initiates clinical trial studies

on interventions to reinforce positive predictive factors and reduce negative ones, so that proper family-oriented nursing care can be provided to strengthen the family SOC and subsequently the quality of family life. In addition, the present study results can help nursing teachers and trainers consider and implement the concept of family SOC and its predicting factors in theoretical and clinical education of students and can help nursing managers encourage nurses to study and strengthen SOC in patients' families through better planning and thus enhance the quality of nursing services.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

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Conflicts of interest

There are no conflicts of interest.

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