



The association of social capital with depression in cancer patients

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Abstract

Introduction: Social components play a role in promoting the health of people, especially people with cancer, one of which is social capital. Therefore, this study was designed to determine the association of social capital with depression in patients with various types of cancer in the early stages of treatment.

Materials and Methods: This study is a descriptive-analytical study and was performed on 170 patients with various cancers admitted to the oncology ward of Imam Khomeini Hospital in Sari. Data collection tools included demographic information questionnaires, Beck depression questionnaire and Onyx and Bullen social capital questionnaire. Descriptive statistics such as mean, frequency and inferential statistics such as Pearson correlation coefficient, Chi-square and t-test were used to analyze the data by using SPSS software.

Results: The mean age of 170 patients participating in this study was 54.3 ± 15.28 years, of which 93 (54.7%) were male and the rest were female. The mean of depression in patients was 17.10 ± 37.48 which is in the range of mild depression. The mean social capital of patients was 110.02 ± 22.64 , which indicates moderate social capital. According to Pearson correlation coefficient test, there is a significant inverse association between social capital and depression ($p=0.000$ and $r = -0.59$).

Conclusion: Regarding to results, it is suggested that the establishment of non-governmental organizations, associations, social organizations and informal organizations to increase the social participation of cancer patients.

Keywords: Cancer, Depression, Social Capital, Social Support, Neoplasms

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Introduction

Cancer is one of the most serious diseases in the world today. When cancer is diagnosed early, most people survive and live with the consequences and problems throughout their lives (1). Cancer is currently the second leading cause of death in the world (2, 3). In Iran, the number of new cases of cancer is estimated at more than 110,000 people. Also, the number of cancer patients in Iran from 2013 to 2018 had been reported as 248392 (4). Historical evidence has shown that cancer has several negative consequences for patients, including depression, anxiety and anger, of which depression is more common (5, 6). About half of those with cancer also have psychiatric disorders (7). In addition to physical, environmental and social components play a role in promoting the health of people with cancer, one of which is social capital (8). Social capital can be considered as a set of cultural beliefs and norms of a society (9, 10). It can also be said that social capital is a tool with which one can strength one's resources or prevent the possible waste of those resources (9, 11).

According to studies, those who lived in areas with high and medium social capital had a lower chance of developing physical and mental illnesses than those who lived in areas with low social capital (12, 13). It has also been proven that social capital can be associated with mortality due to diseases such as cancer, violence in society, and suicide rates (9, 14). Because little research has been done on social capital, it is not possible to say for sure that a person with higher social capital will definitely have a better quality of life and be less likely to suffer from mental illness such as depression. According to studies, some reported articles on social capital (1, 6, 11) and some on depression were performed (15, 16), but the association between these two variables in cancer patients was not studied yet (11). In general, changes due to cancer or its treatments harm communication roles, sexual dysfunction and self-esteem of cancer patients. Cancer threatens the sense of independence and ability to play an effective role in the family and society; and causes a feeling of lack of competence and self-confidence. Therefore, a decrease in self-esteem in cancer patients is predictable, which can lead to reactions such as depression, anxiety, fear, violence,

communication problems and unwillingness to participate in self-care programs (6). None of the reviewed database was not examined the association between depression and social capital in cancer patients. Because of considerable prevalence of cancer and its impact on depression and social capital this research was designed. This study aim was determining the association between social capital and depression in cancer patients in the early stages of treatment.

Materials and Methods

This study is a descriptive-analytical study and was performed on cancer patients admitted to the oncology ward of Imam Khomeini Hospital in Sari, Mazandaran. Sampling method was accessible. 170 patients with cancer were selected from Imam Khomeini Hospital in Sari for consecutive days, if they met following the criteria; 1. Confirmation of cancer by an oncologist, 2. No history of treatment for more than one year, 3. Absence of death of a member of family in last 6 months, 4. Have at least one-month history of cancer, 5. No metastatic cancer. The sample size was estimated 170 people, based on the study entitled The effect of social capital enhancement on quality of life, treatment compliance and pain in patients with breast cancer and based on the variable variance of social capital (9).

$$N = \frac{z(n-1)^2 \cdot d^2}{d^2} \quad N = \frac{(1.96)^2 \times 20^2}{3^2} = 170$$

Data collection tools

The data collection tools in this study were questionnaires. These questionnaires include demographic information questionnaire, Beck depression and Onyx and Bullen social capital questionnaire. The demographic questionnaire included information such as age, sex, marital status, number of children, education, occupation, occupation of spouse, social and economic status, type of cancer, type of treatment, history of underlying disease and family history of cancer and. The Beck Depression Questionnaire was first compiled by Beck (2008) in 1961 to diagnose depression. The questionnaire includes 21 questions in which four response options are presented on a scale of 0 to 3. Criteria for measuring depression based on the Likert scale of the Beck depression questionnaire are divided into (0 to 13)

minimal depression, (14 to 19) mild depression, (20 to 28) moderate depression, (29 to 63) severe depression. Beck Depression Questionnaire, including 21 questions, standardized in several studies. The internal consistency of this scale and its retest reliability are 0.95 and 0.75 respectively, and the correlation of this scale with Hamilton anxiety scale-revised was 0.75 (17). Kaviani et al. studied the psychometric properties of this test in Iran. The results showed the satisfactory validity ($r = 0.72$) and reliability ($r = 0.83$) with a suitable internal consistency of $\alpha = 0.92$ (18).

The Social Capital Questionnaire was created by Onyx and Bullen in 2000 which has two main dimensions as structural and genitive social capital including 36 items and its main purpose is to measure the social capital of individuals. Sub dimensions of this questionnaire include proactivity (8 items), trust and politics (5 items), tolerance of diversity (2 items), and the value of life (2 items) for structural dimension and participating in formal community (7 items), neighborhood connections (6 items), connections with family and friends (3 items), and work connections (3 items) for cognitive dimension. The scoring method of this questionnaire is based on a 5-point Likert scale (very low, low, medium, high and very high). The very low option was given 1 score, the low option 2, the intermediate option 3, the very high option 4 and the high option 5 scores. The highest score for the whole questionnaire is 180 and the lowest score is 36. The scores are divided into (36-64), (65-96), (97-122), (123-151) and (152-180), which represent social capital at very low, low and medium, high and very high levels. Factor analysis performed by Varimax method, correlation coefficient was more than 0.7 and Cronbach's alpha was reported 0.83 (19).

Statistical analysis

After collecting the data, they were entered into SPSS16 statistical software. Chi-square and t-test were also used to investigate the association between social capital, depression and demographic characteristics. The association between social capital variables and depression with Pearson correlation coefficient was done. P-value less than 0.05 was considered significant.

Ethical Issue

After obtaining permission from the Ethics Committee and relevant authorities, the researcher referred to the hospital for conducting the sampling (IR.MAZUMS.REC.1398.810). Describing the goals and methods of the study, she identified the qualified patients, received written informed willingness from these patients and assured them about the confidentiality of their information. Then the questionnaires were distributed. If a question was vague, explanations were offered to the patients to make things clear. It should be noted that these explanations were given only in order to avoid ambiguity and were without bias.

Results

Demographic characteristics of the participants is shown in Table 1, according to which, the average age of 170 patients participating in this project was 54.3 ± 15.28 years.

Table1. Demographic Characteristics of t Cancer Patients (N= 170).

Variables	n	%
Sex	Male	93 54.7
	Female	77 45.3
Marital status	Single	17 10
	Married	132 77.6
	Widowed	16 9.4
	Divorced	5 2.9
Education	Undergraduate	88 51.8
	Diploma	38 22.4
	Associate	14 8.2
	Science	22 12.9
	Master of science	8 4.7
Number of children	0	20 11.8
	1	14 8.2
	2	46 27.1
	3	30 17.6
	4	22 12.9
	>5	38 22.4
Occupation	Unemployment	11 5.6
	Staff	25 14.7

	Free	39	22.9
	Laborer/Farmer	81	47.6
	Retired	14	8.2
Spouse occupation	No spouse	14	9.1
	Unemployment	16	8.2
	Staff	28	16.4
	Free	27	15.6
	Laborer/Farmer	76	44.7
	Retired	9	5.3
	Geographic area	City	74
Village		96	56.5
Socioeconomic status	Bad	44	25.9
	Average	116	68.2
	Good	10	5.9
Cancer type	Skin	4	2.4
	Lung	14	8.2
	Breast	22	12.9
	Prostate	8	4.7
	Gastro	30	17.6
	Clone	27	15.9
	Bladder	3	1.8
	Hemo	18	10.6
	Cervix	9	5.3
	lymph	8	4.7
	Thyroid	6	3.5
Type of treatment	Else	21	12.4
	Chemotherapy	155	91.2
	Radiotherapy	4	2.4
	Hormonotherapy	1	0.6
	Surgery	10	5.9
Underlying disease	Yes	72	42.4
	No	98	57.6
Family history of cancer	Yes	77	45.3
	No	93	54.7

The mean of depression in patients was 17.10 ± 37.48 which is in the range of mild depression. Patients with 40.6, 21.8, 22.4 and 15.3% had mild, low, moderate and severe depression, respectively. Therefore, the highest frequency of depression was in the mild class (Table 2).

Table 2. Frequency of patient's depression classification.

Level of depression	%	n
Mild depression	40.6	69
Low Depression	21.4	37
Moderate depression	22.4	38
Severe depression	15.3	26
Total	100	170

The mean social capital of patients was 110.02 ± 22.64 , which indicates moderate social capital with 1.8, 25.3, 47.6, 21.8 and 5.3%, with very low, low, medium, high and very high social capital. Therefore, most patients had moderate social capital (Table 3).

Table 3. Frequency of patient's social capital classification.

Level of social capital	%	n
Very low social capital	1.8	3
Low social capital	25.3	43
Moderate social capital	47.6	81
High social capital	21.8	37
Very high social capital	3.5	6
Total	100	170

According to Pearson correlation coefficient test, there is a significant inverse association between social capital and depression ($p=0.000$ and $r = -0.59$). In this way, with increasing social capital, depression in patients decreases. There was no statistically significant association between depression with the variables of age, education, marital status, occupation, spouse occupation, number of children, economic status, place of residence, family history of cancer, history of underlying diseases and type of treatment ($p>0.05$). There was no statistically significant

association between social capital with age, education, marital status, occupation, spouse occupation, number of children, economic status, place of residence, family history of cancer, history of underlying diseases and type of treatment ($p>0.05$). There was a significant difference in the mean of depression between men and women ($p= 0.01$, $t = 2.37$) and the average depression was higher in women than men (Figure 1).

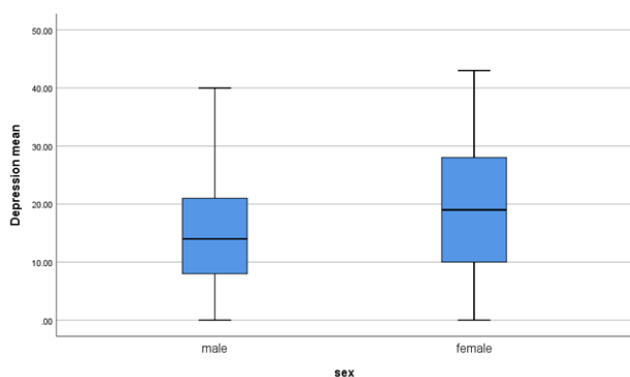


Figure 1. Comparison of depression mean in term of sex.

Also, a statistically significant association was found between the two variables of social capital and sex ($p= 0.008$, $t = 2.66$) and social capital was less in women than men (Figure 2).

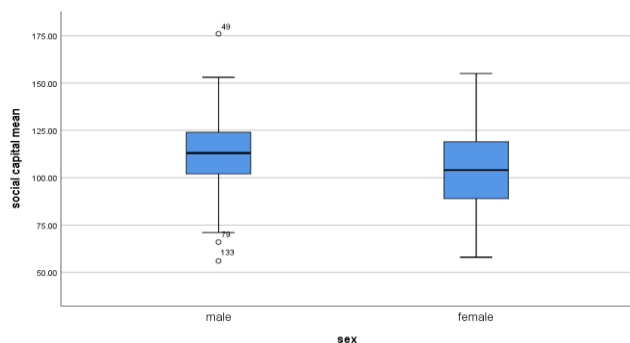


Figure 2. Comparison of social capital mean in term of sex.

Discussion

This study was designed to determine the association between social capital and depression in cancer patients. The results of the study showed that there is a significant inverse association between the rate of depression and social capital in cancer patients. The results of this study also indicate that most patients had mild depression and moderate social capital. In the present study, 40.6% of patients had mild depression and the rest suffered from more severe depression. In this regard, Goudarzian et al. (2017) in their study on

cancer patients, reported 68.7% of mild depression in this group (6). In the above study, the tool used to assess depression was different from the present study. Also, In another study, the depression incidence in breast cancer patients was 26% (20) in the study of Tsaras et al. (2018) depression had been reported in 38.2% of breast cancer patients (21). According to the results of Bener et al.'s (2017) study on breast cancer patients, 27.7% and 19.5% of these patients had moderate and severe depression, respectively (22). These results are similar to the present study, in which 22% of patients had moderate depression and 15% had severe depression. Also, in the above two studies, the study population was only patients with breast cancer. In a review article about cancer patient's depression, reported 15% and 20% of severe and mild depression, respectively (23). There were slight differences in the results of the above studies in comparison with the present study. The slight differences between studies could be due to different in designed factors such as study population and tools; also the culture and region countries were different.

In the present study, a statistically significant association was found between the variables of depression and sex, so that the rate of depression is higher in women than men. This may be due to hormonal differences, the social and cultural structures of society and the presence of more stressors in women (24, 25). According to the World Health Organization reports, depression is one of the ten leading causes of disability in the world (26). Also, in Iran depression counts third for the disease burden (27), which indicates the importance of this issue and related factors to its. One of the related factor to depression is social capital (28). The mean social capital of cancer patients in the present study was 110.2 ± 22.64 , which indicates moderate social capital. Like to the study of Ahmadi et al. (2019), the average social capital among patients with various types of cancer were 107.3 which is in the medium social capital group by the Onyx and Bullen questionnaire (29). Also, Kordan et al. (2020) in their study on people with cancer using a questionnaire Onyx and Bullen questionnaire reported that the mean social capital of people with cancer 118.60; Which is in the category of people with moderate social capital and is in accordance with the present study (30).

In the present study, a statistically significant association was found between the two variables of social capital and sex. So that social capital in the group of women is less than men. It can be due to patriarchy in society, less formal and informal participation of women in society and the cultural context of society (31).

One of the factors affecting depression is social capital. Li et al. (2018) in their study on patients with hypertension, stated that there is a significant inverse association between social capital and depression, which is in accordance with the results of the present study (32). Hosseini et al. (2015) also reported a significant direct association between the amount of social capital and quality of life of breast cancer patients (9). Because one of the dimensions of quality of life is depression; Based on the results of the present study, it seems that social capital can also improve the quality of life patients through its effect on depression. Regarding the importance of social capital, Kordan et al. (2019) in their study on cancer patients reported a significant inverse association between social capital and cancer recurrent (30). Same as to present research, the study of Prazzo et al. (2019) on HIV patients had shown a significant association between depression and low social capital (33). Also, Cohen-Cline et al. (2018) reported a significant association between depression and social capital (34).

Conclusion

According to the results of this study, social capital is one of the most important factors associated with depression. The results of this study provide implications for planning health care provider and policy makers. The planning could be done to improve mental health by raising the level of social capital. This can be created through implementation of items such as educating family, friends, patient caregivers and the healthcare team to support patients, raising awareness about the quality of communication, and building non-governmental pleasing organizations to raise the moral and social capital of these patients. There were limitations to this study, the most important of which was the inability of some participants to answer the questions of the questionnaire. Given the importance of this topic, it is suggested that more extensive research

on social capital be conducted with tools according to the specific cultural and social.

Author contributions

AKB and **MBN** contributed to the design and implementation of the research, to the analysis of the results and to the writing of the manuscript.

Conflict of interest

The authors declare that they have no conflict of interest.

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