Original Article

Examining the Unmet Needs of Family Caregivers of Cancer Survivors and their Related Factors in Clients Referring to Oncology Clinics and Offices

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Abstract

Background: The complex process of caring for cancer survivors can affect various aspects of caregivers' needs and health. The present study was conducted to determine the unmet needs of family caregivers of cancer survivors and their related factors. **Materials and Methods:** This descriptive cross-sectional study included 314 family caregivers of cancer survivors. The required data were collected using a demographic characteristic form and the Comprehensive Needs Assessment Tool using the simple random sampling method. The main inclusion criteria for family caregivers were being 18–70 years old, lacking other chronic physical or mental illnesses, being willing to participate in the research, and not being a member of a treatment team. The collected data were analyzed in SPSS V.18. **Results:** Most of the participants were female, married, and urban citizens. The mean (SD) total score of unmet needs was obtained at 74.97) 19.67(, which indicated a medium-to-high level of the unmet needs of caregivers. It was found that the mean score of unmet needs in caregivers had a significant relationship with gender, marital status, education level, occupation, relationship with the patient, living with the patient in the same place, and the income status of caregivers, as well as with patients' gender, education level, occupation, income status, travel for treatment, type of insurance, type of treatment, and place of treatment ($p < 0.005$). **Conclusions:** It seems necessary to pay attention to the unmet needs, consider interventional programs to satisfy these needs, and take into account the factors related to these needs.

Keywords: *Cancer, caregivers, needs assessment, survivors*

Introduction

The burden of cancer in developing countries is rising, driven by factors such as population growth, an increasing elderly population, and cancer-causing lifestyles, including smoking, low physical activity, and poor nutrition.[1] According to the World Health Organization (WHO), by the end of 2021, 58.30% of cancer deaths occurred in Asia, a continent where 59.50% of the world's population lives.[2] Asia is the most populous and diverse region, where 60% of the world's population is living. Due to the continuing socioeconomic development and improvement in healthcare services, life expectancy in Asia has significantly increased. It has been estimated that the proportion of people aged 60 years or above could reach 25% by 2050, which is expected to increase the burden of cancer substantially in Asian countries.[3] This is while statistics show that about 70% of cancer deaths occur in low- and middle-income countries.[4] A total of 184,481 new cancer cases will occur in Iran in 2035. The predicted number of new cases for esophageal cancer (2.17 times), gastric cancer (2.44 times), and prostate cancer (2.42 times) is higher than for other types of cancer. According to the research results, the cancer burden in Iran is increasing, which requires special attention.[5] Progress in cancer screening and early diagnosis, progress in treatment, and provision of supportive care have played roles in reducing cancer mortality;[6] therefore, the number of cancer survivors is increasing.[7] According to the guidelines of the International Cancer Institute and other organizations, such as the Center for Disease Control and Prevention, the term survivor begins at the time of cancer diagnosis and expands to the rest of life.[6] As cancer survival rates increase,

How to cite this article: Mirzahoseini S, Nourmohammadi H, Pakzad R, Raiesifar A. Examining the unmet needs of family caregivers of cancer survivors and their related factors in clients referring to oncology clinics and offices. Iran J Nurs Midwifery Res 2026;31:253-62.

Submitted: 14-Oct-2024. **Revised:** 09-Sep-2025. **Accepted:** 16-Sep-2025. **Published:** 07-May-2026.

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Access this article online

Website: https://journals.lww.com/jnmr

DOI: 10.4103/ijnmr.ijnmr_344_24

Quick Response Code:

the demand for care and support from family and friends also increases.[8] Also, since cancer treatment has become more complicated and is mostly performed in an outpatient setting, the care and wellbeing of such patients have become more dependent on informal caregivers.[9] A primary caregiver is defined by a cancer patient as the person who has the greatest involvement in supporting the patient throughout the course of the illness.[10] In Iran, informal caregiving is often provided by family members at home, who are known as family caregivers.[11,12] Iranian families often take on patient care due to their deeply rooted family ties and relationships. Therefore, the psychological needs and desire for assistance for family caregivers of Iranian patients will increase. By addressing the social and family needs of cancer survivors' family caregivers, this rich resource can be utilized to improve the patient's condition and reduce the complications of cancer treatment because family participation in implementing treatment measures has always been associated with positive results.[13,14] Family caregivers are the family members of patients who help patients with daily tasks, such as eating and other regular activities, and provide them with psychological, emotional, and social support, as well as communicate with the healthcare system regarding changes in the conditions and medications of patients.[1] Family caregivers, who are the main but unpaid care partners, are more affected by meeting the multidimensional needs of cancer patients and play an important role in treatment, the management of treatment-related symptoms, and the provision of emotional, social, and spiritual support to their patients.[7] In other words, cancer is a family disease, and the WHO recommends treating patients and their caregivers as "a unit of care," focusing on their welfare.[15] Keeping a balance between the caring role and personal needs is one of the problems of family caregivers of cancer patients. The complex process of caring for cancer patients can result in imbalance and stress in the family caregiver's life, which in turn influences his/her physical, mental, and social health.[1] The findings of a study by Kilic showed that 81% of caregivers of cancer patients were affected by the disease process, and that the quality of life of female caregivers was lower than that of male caregivers. Moreover, the quality of life of caregivers with a higher level of education or a better economic status was higher than that of those with a lower status in these two fields.[16]

Despite investigations in this regard, various aspects of the problems faced by family caregivers have remained unknown, with unmet needs being one example. Unmet needs can be defined as a set of necessary health services and related activities designed to help patients and their families during the process of diagnosis, treatment, follow-up, and recovery from cancer.[17] Caregivers' needs are influenced by cultural values, beliefs, family systems, society's policies, available resources, and economic situations. The results of studies on the problems and needs of family caregivers of cancer patients in Iran have shown significant levels of anxiety and depression, considerable mental pressure, and an average quality of life in this group of people.[18] The results of a study in Iran show that caregivers who had been in care for 6 months to 2 years reported more psycho-emotional problems.[19] The results of a qualitative study in Iran show that family caregivers of cancer patients reported several unmet needs, such as the need for informational support, physical support, relief from psychological insecurity, spiritual reinforcement, practical support, and companionship from the care team.[20] Despite the increasing prevalence and incidence of cancer in Iran, little information is available about the dilemmas and needs of family caregivers of cancer patients. Most of the studies conducted in this area are qualitative and patient-centered. Studies also show that the current Iranian healthcare system is mainly focused on cancer patients and does not see family caregivers as recipients of services. It is clear that family caregivers play an important role in treating and caring for cancer patients. It is also important to understand the problems these people face. Figuring out what they need and what makes them unhappy will help solve these issues and keep caregivers' physical and mental health from getting worse. The reason for this importance is that caregivers and affected patients are considered a care unit that will influence each other in the overall treatment and care process and also save costs and help the healthcare system. This study used a descriptive-analytical method to find out the unmet needs of family caregivers of cancer survivors in Ilam province. It did this by taking into account how cultural and social factors affect the amount and type of unmet needs of caregivers (for example, when a family member with a closer emotional connection to the patient takes on the care role instead of an outside caregiver). The findings of this research, by detailing the unmet needs of family caregivers and the related factors, can facilitate more effective planning to address these needs. This, in turn, has the potential to enhance the quality of care provided to cancer patients and support their family caregivers.

Materials and Methods

The present cross-sectional study was conducted on 314 family caregivers of cancer patients who were referred to the hospital and its subspecialty clinic from November 2022 to May 2023. The formula below was used to find the minimum sample size, which was 314 people. The mean (standard deviation) for healthcare staff (as a subdomain for the Comprehensive Needs Assessment Tool (CNAT-C) questionnaire) was found to be 1.89 (0.90), which is in line with a study by Shin *et al*.[21] (REF), and the level of confidence was 95%. The level of precision was 10%. The subjects were included in the study via the simple random sampling method. To select the participants, a list of all eligible persons was provided, and then 314

people were selected using a random selection approach. The inclusion criteria for the patients entailed: 1) having passed at least 3 months since the cancer diagnosis and 2) lacking a mental illness (according to the patient's report). The inclusion criteria for family caregivers were: 1) being 18–70 years old, 2) being able to communicate, 3) lacking other chronic physical or mental illnesses, 4) not being a member of a treatment team, and 5) being willing to participate in the research. $\delta = 2.44$, $\alpha = 0.01$, $Z (1-\alpha/2) = 2.57$, $n = 314$, $\sigma = 16.82$.

This study used the CNAT-C questionnaire. In addition to demographic and clinical variables, this questionnaire also assesses caregivers' needs. This 41-item questionnaire consists of seven dimensions, including healthcare staff, psychological problems, physical symptoms, information, social and religious/spiritual support, practical support, and hospital facilities/services. The items were rated on a 4-point Likert scale (unnecessary, low, moderate, severe). Scores ranged from 0 to 123, with higher scores indicating more unmet needs.[1] This questionnaire was used in Iran in the study by Ashrafian *et al*.[1] in 2017 under the title of Unmet Needs of Family Caregivers of Cancer Patients Referred to Hospital. In their study with 30 family caregivers of cancer patients, the alpha coefficient for the entire scale was 0.87, and for each subscale, it was in the range of 0.29-0.83. To check the reliability of both the Comprehensive Needs Assessment Tool and the related questionnaire made by the researcher in this study, face validity and qualitative content validity were used. To this end, the questionnaire was distributed among 10 nursing and oncology specialists, and their comments were applied. To check the reliability of the questionnaire, it was given to 20 family caregivers, and the internal consistency was assessed using alpha calculation ($\alpha = 88.50$). To retest the questionnaire, it was given to the same people again 2 weeks later, and the intra-class correlation coefficient level was obtained at 98.90, which confirmed the high reliability of this questionnaire. After the necessary coordination, the researcher referred to the Oncology Center of Mostafa Khomeini Hospital and the Blood and Oncology Subspecialty Clinic to select the samples. Samples were selected from the Oncology Center of Mostafa Khomeini Hospital on Saturdays to Mondays, while clinics were visited on Tuesdays to Thursdays. After the selection of subjects and providing them with the objectives of the study, they were asked to complete the questionnaires used in the study. Before completing the questionnaire, the objectives and importance of the study were explained to the family caregivers, and they were assured that the questionnaire data would remain completely confidential and that participants could withdraw from the study at any time.

Mean and standard deviation were used to describe quantitative data, while the percentage was used to describe qualitative data. A T-test was used to determine if there was a significant difference between the means of the two groups, and a one-way analysis of variance (ANOVA) was used for a comparison of more than two group means. In addition, simple linear regression and multiple linear regression were used to examine the crude and simultaneous effects of the studied variables on the unmet needs score. To make linear regression, we looked at how certain variables were related to the unmet needs score. These variables included the patient's age, the caregiver's income, the patient's income, travel history for treatment, more costs due to travel, the patient's insurance coverage, changes in the caregiver's job because of a family member's illness, hospitalization history, the type of treatments received, the place where medical services were provided, and the patient's role in the family. Then, the variables that showed a significant association were considered eligible for inclusion in the multiple linear regression analysis. It is important to remember that the Enter Approach was used to create the multiple linear regression model that was used to look at how the variables being studied affected the unmet needs score at the same time. In addition, the validation of the model was assessed by adjusted R-squared. The missing data were considered Missing Completely at Random (MCAR), and the analysis was done by the listwise or complete case approach to obtain unbiased estimates and conservative results. The data were analyzed in SPSS software (version 18) at a significance level of 0.05.

Ethical considerations

This research was approved by the Ethics Committee of Ilam University of Medical Sciences, Ilam, Iran (IR.MEDILAM.REC.1400.073). Before study enrolment, informed written consent was obtained for all study participants. All the procedures were followed in accordance with the Declaration of Helsinki.

Results

The study looked at 314 family caregivers of cancer survivors. Of these, 194 (61.80%) were women and the other 97 (31.10%) were spouses, daughters, and sons of the patient [Table 1]. The mean (SD) total score of unmet needs was 74.97) 19.67(, indicating moderate-level unmet needs among caregivers of cancer survivors. Higher scores indicate that a significant portion of caregivers had unmet needs. As shown in Table 1, over 90% of caregivers reported having unmet needs.

The highest and lowest mean (SD) scores of unmet needs pertained to the dimensions of information 16.6 0) 4.28) and spiritual support 3.40) 1.64). Moreover, 25.20% of subjects had a high need for psychological health, while in the social dimension, only 32.50% of cases had a high need. Table 2 displays the status of other dimensions, including the average, standard deviation, and frequency of unmet needs. Table 3 shows the relationship among the

factors related to caregivers' unmet needs. As illustrated in this table, the mean (SD) score of female caregivers, 77.01) 18.69), was significantly higher than that of male caregivers, 71.69) 20.83) ($p = 0.020$). Moreover, the mean score of unmet needs for caregivers was significantly different according to their marital status ($p < 0.001$). The mean (SD) score based on education level also had a significant difference ($p < 0.001$), being the highest in illiterate subjects, 88.50) 12.11). Furthermore, the type of profession ($p < 0.001$), relationship to the patient ($F_{6,48} = 7306$, $p < 0.001$), living with the patient ($t_{312} = 2.16$, $p = 0.03$), and duration of acting as a caregiver ($F_{3,08} = 3310$, $p = 0.005$) showed a relationship with caregivers' unmet needs score. The information in Table 3 also shows that the caregivers' score of unmet needs was linked to the patient's gender ($p = 0.020$), level of education ($F_{5,33} = 4309$, $p < 0.001$), the caregivers' income ($F_{6,39} = 2311$, $p = 0.020$), and the patient's income ($F_{31,90} = 2311$, $p < 0.001$). Table 3 presents the status of other variables, highlighting the relationship between demographic and other related factors. Results of simple and multiple linear regression tests are shown in Table 4 to show how unmet needs are linked to related factors. Since only the variables that had a significant relationship in the simple model were included in the multiple models, the results of multilinear regression are explained here. Accordingly, there was an inverse relationship between the patient's income and unmet needs score (Coefficient: –10.89; $p < 0.001$). In other words, increasing income led to a decrease in the unmet needs score. A similar pattern was observed for the place of receiving medical services (b: –3.10; $P = 0.005$) and the role of the patient in the family (b: –1.61; $p = 0.013$). In the clinic, the score of unmet needs was 3.10 lower than in the office. Additionally, the overall mean score of unmet needs for mothers was 1.619 lower than that for spouses or fathers. The results of multiple regression also pointed out that with an increase in the number of hospitalizations, the score of unmet needs increased (b: 1.51; $p = 0.004$). Other variables in the table did not affect the score of unmet needs. The amount of R2-adj in the multiple models was also 24.80%, which means that the variables in the model explain nearly a quarter of the variation in the unmet needs score. Some of the things that were linked to unmet needs in the simple regression model were the caregiver's income, the patient's income, the history of traveling for treatment and the higher costs that come with it, the history of hospitalization, the type of treatment received, the location of medical services, and the patient's role in the family. These variables were then added to the multiples model.

Table 1: Frequency distribution of demographic characteristics of cancer survivors and their family caregivers

Variables		Number (percentage)
Gender of caregivers	Female	194 (61.80)
	Male	120 (38.20)
Marital status of caregivers	Single	114 (36.30)
	Married	181 (57.60)
	Other things	19 (6.10)
Education level of caregivers	Illiterate	16 (5.10)
	Elementary	14 (4.50)
	Guidance	24 (7.60)
	Medium	104 (33.10)
	Excellent	156 (49.70)
Gender of the patient	Female	189 (60.20)
	Male	125 (39.80)
Marital status of the patient	Single	24 (7.60)
	Married	262 (83.40)
	Other things	28 (8.90)
Education level of the patient	Illiterate	88 (280)
	Elementary	54 (17.20)
	Guidance	24 (7.60)
	Medium	92 (29.30)
	Excellent	56 (17.80)

Discussion

The present study was conducted to determine the unmet needs of family caregivers of cancer survivors and their related factors. Based on the results of the present study, the unmet needs of caregivers were at a medium-to-high level. The majority of family caregivers reported a medium level for their needs in the dimensions of mental health,

Table 2: Average, standard deviation, and frequency of unmet needs of family caregivers and its dimensions

Average Dimensions	Mean (SD)*	Frequency (%)		
		Low	Medium	High
Mental health	9.49 (3.90)	86 (27.40)	149 (47.50)	79 (25.20)
social support	8.65 (3.46)	60 (19.10)	152 (48.40)	102 (32.50)
Care workers	14.74 (4.91)	31 (9.90)	157 (50)	126 (40.10)
Information	16.6 0 (4.28)	9 (2.90)	133 (42.40)	172 (54.80)
Spiritual support	3.40 (1.64)	94 (29.90)	127 (40.40)	93 (29.60)
Hospital services and facilities	11.44 (3.70)	34 (10.80)	147 (46.80)	133 (42.60)
Operational support	10.66 (4.54)	60 (19.10)	128 (40.80)	126 (40.10)
Total	74.97 (19.67)	24 (7.60)	173 (55.10)	117 (37.30)

*SD: Standard deviation

Table 3: Relationship between demographic and other related factors to unmet needs in family caregivers of cancer survivors

Variable		Mean±SD	Statistic (df)	*p*
Gender of caregivers	Female	77.01 (18.69)	*t*=2.34 (312)	0.020
	Male	71.69 (20.83)		
Marital status of caregivers	Single	69.81 (21.83)	*f*=9.02 (2, 311)	<0.001
	Married	76.94 (17.75)		
	Other things	87.32 (14.8)		
Address	City	73.64 (19.92)	*f*=1.46 (2, 311)	0.360
	Village	77.96 (18.57)		
	Suburbs	74.94 (20.87)		
Education of caregivers	Illiterate	88.50 (12.11)	*f*=5.33 (4, 309)	<0.001
	Elementary	77.33 (22.38)		
	Guidance	80.42 (13.91)		
	Medium	77.82 (19.36)		
	Excellent	70.50 (20)		
Job of caregivers	Unemployed	76.70 (23.42)	*f*=5.97 (5, 308)	<0.001
	Employee	69.35 (17.33)		
	Manual worker	91.72 (14.47)		
	Free	71.69 (17.84)		
	Housewife	79.49 (16.75)		
	Other cases	68.34 (20.67)		
Relative to the patient	Spouse	80.99 (15.84)	*f*=6.48 (7, 306)	<0.001
	Father	62 (1)		
	Mother	61.50 (7)		
	Brother	75.04 (25.10)		
	Sister	78.90 (10.15)		
	Daughter	76.38 (22.84)		
	Son	65 (19.83)		
	Other cases	54 (12.75)		
Living with the patient	Yes	76.17 (19.38)	*t*=2.16 (312)	0.030
	No	70.78 (20.24)		
Duration of awareness of the disease	3 months	78.64 (18.13)	*f*=2.46 (3, 310)	0.060
	3-6 months	75.52 (20.67)		
	6-12 months	68.24 (13.96)		
	>1 yr	74.64 (21.19)		
Duration of acting as a caregiver	3 months	78.89 (18.14)	*f*=3.08 (3, 310)	0.005
	3-6 months	74.78 (20.84)		
	6-12 months	68.24 (13.96)		
	>1 yr	74.64 (21.19)		
Gender of the patient	Female	72.17 (18.75)	*t*=–3.15 (312)	0.020
	Male	79.33 (20.34)		
Marital status of the patient	Single	77.33 (13.76)	*f*=0.88 (2, 311)	0.430
	Married	74.92 (20.18)		
	Other things	70.61 (20.51)		
Education level of the patient	Illiterate	80.75 (17.02)	*f*=5.46 (4,309)	<0.001
	Elementary	80.02 (17.46)		
	Guidance	69.05 (27.23)		
	Medium	69.88 (20.39)		
	Excellent	71.77 (17.51)		
Caregiver's income status	Income < expenditure	78.23 (20.20)	*f*=6.39 (2, 311)	0.002
	Income=expenditure	69.23 (18.27)		
	Income > expenditure	772.86 (18.60)		
Patient's income status	Income < expenditure	81.99 (17.93)	*f*=31.90 (2, 311)	<0.001
	Income=expenditure	68.21 (18.24)		
	Income > expenditure	58.77 (17.01)		

Contd...

Table 3: Contd...

Variable		Mean±SD	Statistic (df)	*p*
Travel history for treatment	Yes	76.77 (17.65)	*t*=2.91 (99)	0.015
	No	69.28 (24.31)		
More expenses due to travel	Yes	77.12 (17.56)	*t*=3.39 (108)	0.004
	No	68.59 (23.92)		
Type of insurance	No	73.54 (9.81)	*f*=10.53 (5, 308)	<0.001
	Health service	76.56 (16.88)		
	Social security	77.34 (20.56)		
	Armed forces	59.52 (22.92)		
	Rural	85.84 (15.61)		
	Other	66.45 (7.13)		
The impact of illness on the job	No	73.75 (19.76)	*f*=5.98 (4, 309)	<0.001
	Absence from work	76.38 (19.72)		
	Reprimand	80.95 (10.12)		
	Losing work	61.86 (20.63)		
	Reducing the quality of work	81.86 (17.88)		
Type of treatments received	Chemotherapy	71.61 (22.31)	*f*=4.16 (3, 310)	0.007
	Radiotherapy	60.50 (19.09)		
	Surgery	59.67 (6.11)		
	Mix	78.41 (16.49)		
Place of receiving medical services	Hospital	80.14 (15.45)	*f*=22.51 (3, 310)	<0.001
	Office	60.47 (23.59)		
	Clinic	81.43 (13.07)		
	Other	74.55 (18.67)		

Table 4: Association of unmet needs with related factors by simple and multiple linear regression

Variable	Simple			Multiple		
	Coefficient (95% CI)	*p*	R^2-adj%	Coefficient (95% CI)	*p*	R^2-adj%
Age of the patient	–0.07 (–0.24 to 0.09)	0.409	0.10	-	--	24.80
Caregiver's income status*	–3.73 (–6.54 to –0.93)	0.009	1.84	0.62 (–2.17 to 3.42)	0.661	
Patient's income status	–12.51 (–15.61 to –9.41)	<0.001	16.50	–10.89 (–14.15 to –7.64)	<0.001	
Travel history for treatment**	–7.48 (–12.58 to –2.42)	0.004	2.33	7.58 (–9.78 to 24.96)	0.391	
More expenses due to travel***	–8.52 (–13.49 to –3.57)	0.001	3.24	–12.51 (–29.72 to 4.69)	0.153	
Patient insurance coverage****	–0.241 (–1.962 to 1.479)	0.783	–0.30	-	-	
Change in caregiver job due to illness of family member*****	0.927 (–0.45 to 2.30)	0.188	0.02	-	-	
Hospitalization history	2.01 (1.01 to 3.02)	<0.001	4.45	1.51 (0.48 to 2.53)	0.004	
Type of treatments received[$]	2.25 (0.80 to 3.70)	0.002	2.61	1.12 (–0.28 to 2.53)	0.118	
Place of receiving medical services[$$]	–2.88 (–5.10 to –0.65)	0.011	1.70	–3.17 (–5.26 to –0.94)	0.005	
The role of the patient in the family[$$$]	–2.72 (–4.11 to –1.34)	<0.001	4.30	–1.61 (–2.89 to –0.34)	0.013	

*1: Income < expenditure; 2: Income=expenditure; and 3: income > expenditure. **1: Yes; 2: No. ***1: Yes; 2: No. ****1: NO; 2: Health service; 3: Social security; 4: Armed forces; 5: Rural; 6: Other. *****1: No; 2: Absence from work; 3: Reprimand; 4: Losing work; 5: Reducing the quality of work. [$]1: Chemotherapy; 2: Radiotherapy; 3: Surgery; 4: Mix. [$$]1: office; 2: clinic; 3: other. [$$$]1: Spouse; 2: Father; 3: Mother; 4: Brother; 5: Sister; 6: Daughter; 7: Son; 8: Other

social support, healthcare staff, spiritual support, and hospital services, as well as facilities, and a high level in the dimensions of information and practical support. Needs related to the mental health dimension of family caregivers of cancer survivors were looked at in this study. The results showed that most family caregivers had average mental health needs. The results of studies by Ashrafian *et al*. and Kim were in line with those of the current study, showing the high level of mental-psychological problems among the family caregivers of the patients. Therefore, family caregivers of cancer survivors are worried about their patients and need help with anxiety and depression.[1,22,23] According to the results of the study, it can be said that as the duration of treatment for cancer patients increases, the psychological needs of their family caregivers become more pronounced. Due to the lack of attention to these needs, there is an increase in the demand for caregivers in this area. Every year, a large number of cancer patients who have survived cancer require family care due to the consequences of treatment for a long time after the end of

their illness. This can cause confusion and anxiety in their families, leading to changes in their individual and social roles if these conditions continue.[22] The findings of another study conducted by Oechsle *et al*.[24] indicated that family caregivers of patients hospitalized in a specialized department of palliative care suffered from high psychological distress and related symptoms of anxiety and depression. This finding highlighted the strong need for psychological support as a central component of palliative care, not only for patients but also for their family caregivers. These studies looked at the needs of family caregivers of cancer survivors in terms of social and family support. They found that most of the family caregivers had moderate levels of social and family support needs. According to a study by Zavagli *et al*.,[12] caregivers' unmet needs for social support were shown by the fact that medical organizations and the community did not provide any supportive facilities and did not care about their wellbeing. According to the results of studies by Shin *et al*.[21] and Lee *et al*.,[25] the unmet needs of caregivers for cancer survivors were at a medium level in the dimension of social and family support. In Asian countries, there are strong family ties, and the participation of family caregivers in the direct care of cancer patients is much stronger from a cultural point of view. This fact has caused a decrease in the amount of social support by health service providers; therefore, with an increase in the responsibilities of family caregivers in Asian countries, an increasing level of need for social support is expected among them. However, due to the lack of a clear and standard definition of an institution or care facility center for cancer patients, this need has remained unmet among family caregivers. According to the study, most of the family caregivers of cancer survivors had a high level of need in the communication dimension of healthcare workers. This was found in the information dimension of their needs. The study by Ashrafian *et al*.[1] indicated a high level of unmet need in the area of exchanging information between healthcare personnel (doctors and nurses) and family caregivers of cancer patients referring to healthcare centers; the majority of these healthcare personnel were unwilling to answer their questions, which was consistent with the results of the present study. The results of these studies are consistent with the present study, indicating that healthcare personnel either do not have the necessary communication with family caregivers of cancer survivors or do not have enough time to answer their questions. Researchers looked at how much family caregivers of cancer survivors needed healthcare workers to communicate with them. They found that most of the family caregivers had an average level of need for healthcare workers to communicate with them. These findings from the study by Hsiao *et al*.[13] showed that families were more aware and less anxious when the treatment team was honest, when they had up-to-date information and were aware of it, when they were told about treatment methods and possible side effects, and when they were given the best treatment options. The results of studies by Hsiao *et al*.,[13] Khatri Chhetri *et al*.,[26] and other similar studies investigating the unmet needs of caregivers of cancer patients often reported high levels of unmet needs regarding the lack of communication with doctors and nurses, lack of information regarding their patient, or lack of assistance in personal care.[19,26,27] Regarding this, conducting assessments to establish more contact between nurses and patients' families and, most importantly, keeping the family informed about the patient's condition and announcing any changes by nurses can help reduce worries among family members. The study looked at the operational support needs of family caregivers of cancer survivors and found that most of them had high to medium levels of need in this area. In almost all the studies in the field of financial support for cancer patients, this dimension has been mentioned as the one that has a high level of unmet needs.[28,29] The results of studies by Ashrafian *et al*.[1] and Hashemi *et al*.[17] reported considerable financial and economic pressure among the family caregivers of cancer patients. which was in line with the results of the current study. However, the findings of a study in Italy showed no significant concern regarding the financial consequences among the family caregivers of cancer survivors.[12,27] This is probably because palliative care is available in these countries and caregivers were financially supported by the government and charitable organizations.[30] According to this study, family caregivers said they needed a medium amount of spiritual support. However, studies by Timmins *et al*.[31] and Rezaei *et al*.[32] found that family caregivers of cancer survivors had high levels of unmet spiritual needs. Spiritual people, especially those with a high level of spirituality, may believe that caring for their patients is valued by God; therefore, they would not consider it a difficult experience and would bear less caregiving burden. Moreover, stronger spiritual beliefs in a person, due to stronger beliefs in supreme power and stronger dependence, lead him/her to transfer a large part of his/her care responsibilities to this absolute power. The results of the present study regarding the needs related to the hospital services and facilities dimension of family caregivers of cancer survivors showed that the majority of family caregivers had high and medium levels of need in the hospital services and facilities dimension. The results of a study conducted on 188 family caregivers of cancer patients showed that the lack of appropriate provision of health care services and lack of welfare facilities were among the most prominent areas of unmet needs of caregivers,[33] which is in line with the results of this study. The results of the present study and other studies reviewed indicate that health centers are helpless in meeting the needs of most family caregivers of cancer patients. This should be addressed by professional care providers through the development of comprehensive care programs targeting family caregivers, with a focus on information needs and an appropriate communication process. According to the

results of the present study, the greatest needs of caregivers were found in the dimensions of information, care workers, and hospital services and facilities. The majority of family caregivers reported the level of their needs in the dimensions of mental health, social support, healthcare staff, spiritual support, and hospital services and facilities at a medium level, and in the dimensions of information and practical support at a high level. Lack of proper provision of healthcare services, lack of comfort facilities, information about the patient, and emotional and psychological support were the most prominent areas of unmet needs of caregivers.[34] In general, the results of all reviewed studies revealed that the caregivers of cancer survivors showed a wide range of unmet needs. The different levels of these reported needs might be related to differences in cultural backgrounds, healthcare systems, and economic levels of the studied society. For instance, high-income countries or regions generally offer well-established healthcare systems that can facilitate the timely identification and resolution of healthcare problems. Based on the results of the present study, the mean scores of unmet needs among family caregivers were higher in cases who were married, illiterate, and workers; had the role of spouse; lived in the same house as the patient; were male patient caregivers; and were from a low-income family, as well as in those whose patient was a worker, traveled for treatment, had rural insurance, had lost their job, and needed combined cancer therapy, and place of treatment (hospital, office, clinic, other). Consistent with the results of the current study, those of studies by Braine *et al*.[35] and Morris *et al*.[36] revealed the relationship between the gender of caregivers of cancer patients and their caregiving burden showed that female caregivers of cancer patients experienced more unmet needs than male caregivers and that primary caregivers (i.e. parents and spouses) of cancer patients faced various challenges, such as lack of knowledge and feelings of incompetence, instability, frustration, confusion, and fatigue, which emerged as unmet needs. The consistency of the results of the mentioned study with those of the present study can raise the issue that family caregivers with a low level of education (primary and less) use the services of care centers less and, as a result, will have less social support. The findings of a study by Vahidi *et al*.[37] showed that the level of education could predict the variance of caregiver burden as well. Given that a low level of education is usually associated with lower socioeconomic status and that caregivers with a high level of education are supposed to use better coping strategies, comprehensive support seems vital for caregivers with a low level of education. In this regard, designing and implementing various supportive interventions seems necessary. Men, especially husbands, take on additional household chores and take care of patient and family needs that they may not usually be responsible for. As such, they need more attention from researchers as the negative impact of cancer on their wellbeing is recognized. Lack of access to psychosocial support services for this group of caregivers, due to the low level of awareness and knowledge on how to use the services, is associated with an increase in their unmet needs. The findings of a study by Boyden *et al*.[38] showed a relationship between the pressure of the financial care burden and the increase in the level of psychological needs among the families of cancer patients. Financial problems are also often reported by families in the form of job and career disruption and loss of income. These cases add more challenges to the care of patients by increasing the severity of difficulties, which is associated with increased stress and the level of needs in the family.[39] The results of Ahmadi *et al*.'s[40] study showed that factors related to the needs of caregivers of cancer patients included the number of patients hospitalized and the income status of parents and spouses, which is consistent with the results of the present study. Financial burden of care has the potential to affect other dimensions of caregiving, such as the emotional burden of caregiving. Financial difficulties are also often reported by families in the form of job and career disruption and loss of income. These issues create additional challenges for patient care by increasing the severity of hardships, which is associated with increased stress in the family and increased levels of needs. Since various criteria and tools have been used to examine the unmet needs of family caregivers of cancer patients in different studies, the comparison of factors related to the unmet needs of family caregivers of cancer survivors is faced with limitations. Moreover, the differences in sociocultural conditions and even economic status among countries cause differences in results regarding the factors related to the unmet needs of family caregivers. Due to the above heterogeneity among studies, it is necessary to perform further studies to collect and analyze data and determine the effects of individual and social factors on caregivers.

One of the limitations of the present study refers to the cross-sectional nature of this research that was conducted at one point in time. Moreover, the evaluation of unmet care needs in the current study was performed in only one province; therefore, contextual issues (i.e., sociocultural issues and health services) should also be considered when evaluating and interpreting the results. Although the results of this study can be useful for the development and implementation of appropriate interventions at the regional level, it seems necessary to conduct qualitative studies with a suitable approach to improve the level of deep experiences of family caregivers of cancer survivors so that the unmet needs can be comprehensively addressed by all involved parties, including patients, caregivers, and healthcare providers.

Conclusion

According to the results of the present study, the level of unmet needs of family caregivers was medium to high.

The greatest needs of caregivers were in the dimensions of information and healthcare staff. Furthermore, the mean score of unmet needs had a significant relationship with caregivers' characteristics, such as male gender, marital status, illiteracy, being a worker, being the patient's spouse, and living with the patient in the same house. In addition, the mean score of unmet needs had a significant relationship with some characteristics of patients, such as being a worker, low household income, history of traveling for treatment, rural insurance, history of job loss due to illness, the need for combined therapy, and treatment in the physician's office. Considering the importance of patients and their caregivers as a care unit, it is necessary to emphasize the overall wellbeing of the patient's caregiver and not just the patient, as well as improving the mental and social health of the caregivers of cancer survivors and reducing the symptoms and consequences of the post-treatment period in the cancer survivors. Care should be based on solving the unmet needs of caregivers according to their characteristics, including low-income families who have to travel for treatment and whose type of health insurance is rural insurance, as well as patients who have lost their jobs and need to use combined therapy and places of treatment, especially in low-income countries. Moreover, the provision of routine care in this area should be reduced.

Acknowledgements

The authors would like to tanks all patient and their family who participate in this project, as well as, all nurses in study settings (Research No: 14003013/138).

Financial support and sponsorship

Ilam University of Medical Sciences

Conflicts of interest

Nothing to declare.

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