



# Unmet Supportive Care Needs of Iranian Cancer Patients and its Related Factors

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## ARTICLE INFO

### Article Type:

Original Article

### Article History:

Received: 17 Dec. 2014

Accepted: 17 Jul. 2015

ePublished: 1 Dec. 2016

### Keywords:

Cancer  
Caring  
Needs  
Social support

## ABSTRACT

**Introduction:** Investigation of supportive care needs of cancer patients is important to implement any supportive care programs. There is no relevant studies investigated supportive care needs of Iranian cancer patients and factors affecting such needs. So, the aims of present study were to determine the unmet supportive care needs of Iranian cancer patients and its predictive factors.

**Methods:** In this descriptive- correlational study 274 cancer patients in one referral medical center in North West of Iran participated. For data collection, demographic and cancer related information checklist and Supportive Care Needs Survey (SCNS) was used. Logistic regression was used for data analysis of un-adjusted and adjusted Odds Ratios (ORs) for patients needs and analysis of variables of study based on Backward LR procedure SPSS Ver.13.

**Results:** More than fifty percent of participants reported unmet needs in 18 items of SCNS. Most frequent unmet needs were related to health system and information domains and most meet needs were related to sexuality and psychological domains. The result of logistic regression identified predictors of each domain of supportive care needs. The variable such as sex, age and living situation were most important predictors of unmet needs.

**Conclusion:** The results showed that Iranian cancer patients have many supportive care needs in different domains. In general female cancer patients are at risk of more unmet supportive care needs. So, health care professionals should be more sensitive to fulfillment of supportive care needs of female.

**Please cite this paper as:** Jabbarzadeh Tabrizi F, Rahmani A, Asghari Jafarabadi M, Jasemi M, Allahbakhshian A. Unmet supportive care needs of Iranian cancer patients and its related factors. J Caring Sci 2016; 5 (4): 307-16. doi:10.15171/jcs.2016.032.

## Introduction

Cancer is the second most common cause of death in the world today, and is recognized as a major threat to common health by many governments. In countries where the western lifestyle is followed, cancer accounts for a quarter of the deaths.<sup>1</sup> Similarly, in Iran cancer is treated as an issue of increasing importance. It is the third leading cause of death and the second leading cause of non-communicable chronic diseases.

Despite the advances in cancer treatment, the prognosis of cancer remains unsatisfactory. It causes various physical and mental

disorders in patients such as social isolation and spiritual pain<sup>2,3</sup> which affect their daily lives. Accordingly, the need for supportive care is increasing and it is vital to support the patients with cancer.<sup>2</sup> Today, the provision of supportive care is the equivalent of proper diagnosis and treatment.<sup>4</sup>

The first step to develop and provide supportive care is to thoroughly investigate the patient's situation in order to identify his or her supportive care needs.<sup>5</sup> The identification of these needs is essential to high-quality care and the patients' satisfaction.<sup>6,7</sup> Many studies have addressed supportive care needs of cancers patients; most of these studies have

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been conducted in the West,<sup>8,9</sup> or in Eastern countries such as Hong Kong, Taiwan and Japan.<sup>10,11</sup> The results of these studies, however, is different from each other; in some studies, the patients' physical needs are the top priority and treated as the essential supportive care needs,<sup>10,12</sup> while in the others the patients' psychological needs are considered as their first supportive care needs.<sup>13</sup> According to a systematic review by Carey *et al.*, cancer patients' physical and psychological needs as well as information needs are all important and need to be addressed in supportive care.<sup>14</sup>

The other discrepancy among the studies is the reported number of cancer patients' unknown needs. In some studies<sup>7,15</sup> especially the ones in non-western countries<sup>10,11</sup> most of cancer patients' needs are concluded to be unknown, while in the other studies the patients' supportive care needs are reported to be known and addressed.<sup>6,16</sup>

Studies show that differences in cultures and clinical care centers influence cancer patients' supportive care needs; thus, it is important to consider these differences before an ideal care plan can be developed and implemented.<sup>6</sup> The nature and degree of cancer patients' supportive care needs are influenced by their cultures. The objective of the present study was to identify factors which predict Iranian cancer patients unmet supportive care needs.

## Materials and methods

This was a descriptive-correlational study that conducted in a teaching hospital in East Azerbaijan Province, Iran. This teaching hospital is affiliated to Tabriz University of Medical Sciences and is a referral center for cancer treatment in Northwest of Iran.

Based on a pilot study, by using G\*power software it was determined that a sample size of 130 participants would provide sufficient power of study ( $1 - \beta = 0.8$ ).

The researchers selected the potential participants from hospital wards and out-patients clinics. Then, after giving information about the aim and methods of the study to all patients, data were gathered with selected

instruments. About literate patient filled out the questionnaire themselves after giving short verbal information about the filling of the questionnaire. Regarding illiterate patients, data were collected using face to face interview conducted by researchers.

A total of 310 eligible cancer patients were invited to participate in this study. The inclusion criteria for these cancer patients were including: 18 years or above, having definite diagnosis of any type of cancer, physically or mentally able to participate in the study, and be aware of their exact diagnosis for at least 3 month.

Twenty patients reject the invitation to participate in the study and 16 ones did not fill out the questionnaire completely.

Thus, finally 274 cancer patients participated in the study. Cancer patients were assessed using the following instrument:

Some basic demographic characteristics of participants (including age, sex, marital status, educational level, job, and living situation) and disease-related information (including time passed since diagnosis and received treatments) were collected using a checklist developed by researchers. It should be noted that received treatments were obtained from patients' medical records.

The long form of SCNS (the Supportive Care Needs Survey), was used to investigate the unmet supportive care needs of cancer patients.<sup>17</sup>

Long form of SCNS contains 59 items covering five domains of cancer patients' needs: psychological (22 items), health system and information (15 items), physical and daily living (7 items), patients care and support (8 items), sexuality (3 items), and no specific items (4 items).

Patients reported their supportive care needs in each items based on 5-point Likert scale (1=not applicable or no need, 2=satisfied, 3=low need, 4=moderate need, and 5=high need).

Two independent experts as English-Persian translators translated together the English version of the SCN-SF34 into Persian for the purpose of the study. The questionnaire was

reviewed by 12 academic faculties from Tabriz University of Medical Sciences for face and content validity and minor revisions were made based on their feedback. The internal reliability coefficients (Cronbach Alpha) of the translated questionnaire was substantial, greater than 0.90.

The data analyses were performed using SPSS software version 13, SPSS Inc., Chicago, IL, USA. Descriptive statistics including frequency, percentage, mean and median were used to analysis the demographic characteristics, cancer related information, and unmet supportive care needs of participant.

Binary logistic regression (LR) was used for analysis of un-adjusted and adjusted Odds Ratios (ORs) for patients needs and analysis of study variables based on Backward LR procedure. According to backward strategy, at first, all of the independent variables imported in to the model, thus the less important variables considering correlation were removed until the criteria were met (considering  $P < 0.01$ ).

One important issue in this study was to find out the awareness of cancer patients about their exact diagnosis. According to previous researches in Iran many Iranian cancer patients are not aware of a cancer diagnosis<sup>18,19</sup> and there is a taboo space around the cancer diagnosis.<sup>20</sup> So, in order to find out the awareness of cancer patients about cancer diagnosis and to prevent of unwanted disclosure, the awareness of patients about their exact diagnosis was obtained from their caregivers and or health care professionals and then checked with patients within short private interview.

The present study was approved by regional ethics committee at Tabriz University of Medical Sciences (ethics code: 91.2). All patients were informed about the aim and methods of the study and all of them signed the written informed consent.

## Results

In this study, most of the participants were female (56%), married (76%), educated at primary level (33%), house worker (45%), and

living with their partner and children (62%). The mean age of the patients was 42 years and the mean of the time passed since diagnosis was 24 months.

The data analysis shows that more than fifty percent of participants reported that their supportive care needs were not satisfied according to the score of 18 items of SCNS (Table 1). This means that participants have many unmet supportive care needs. The score of participants in five domains of SCNS based on 100 score is reported in table 2. As evident in this table, participants reported more needs in health system and information score and less needs in sexuality domain.

The result of backward logistic regression for identifying predictors of supportive care needs of cancer patients is presented in Table 3.

Regarding psychological needs, analysis showed that these needs were higher in females, house workers, participants who living alone (compared with patients who living with their parents) and participants who living with parents (compared with patients who living with their spouses).

In term of health system and information needs, analysis showed that these needs were more frequents in females. Also, these needs is decreased by increasing in age and time passed since awareness of exact diagnosis.

Regarding physical and daily living needs, these needs were further in females, in patients who living alone (compared with patients who living with their parents), living with their spouse (compared with patients who living with their parents), and living with spouse and children (compared with patients who living with their parents). Also, these needs is increased by increasing in any years of old, number of children and time passed since awareness of exact diagnosis.

## Discussion

It seems that Iranian cancer patients have some unmet supportive care needs especially in health system and information and physical and daily living domains.<sup>21</sup> The aim of this article was to access factors which predict Iranian cancer patients unmet supportive care

**Table 1.** Most frequent unmet supportive care needs of participants

Items	Domain	N (%)
No being able to do the things you used to	P & D	199 (73.4)
To have one member of hospital staff with whom you can talk about all aspects of your disease	H & I	194 (71.6)
To be informed about cancer that is under control or diminishing	H & I	192 (70.8)
To be informed about things you can do to help yourself get well	H & I	179 (66.8)
Lack of energy/ tiredness	P & D	176 (65.2)
Concern about financial situation	N	172 (63)
To be given information about aspects of managing your illness and side effects at home	H & I	169 (62.1)
To be informed about your test results as soon as possible	H & I	163 (60.4)
Change in usual routine and lifestyle	P	160 (60.2)
Concern about getting to and from the hospital	N	163(59.9)
Concern about the worries of those close to you	P	160 (59.7)
To be adequately informed about the benefits and side effects of treatments before you chose to have them	H & I	161 (58.8)
Worry that the result of treatment are beyond your control	P	156 (57.4)
Making the most of your time	P	153(56.3)
Waiting a long time for clinic appointment	P & S	147 (54.6)
To be given explanations of those tests for which you would like explanations	H & I	146 (53.3)
Feeling down or depressed	P	145 (53.1)
To be given written information about the important aspects of your care	H & I	136 (50.2)

P = psychological; H & I = health system and information; P & D = physical and daily living; P & S = patients care and support; N = no specific items

**Table 2.** The score of participants in each domains on supportive care needs survey

Items	Mean (SD)*
Psychological	59.70(16.80)
Health system and information	70.89(16.22)
Physical and daily living	65.92(18.18)
Patients care and support	57.71(15.32)
Sexuality	49.39(28.01)

The scores is based on 100 score; \*SD = standard deviation

**Table 3.** Results of logistic regression for patient's needs and analysis of study variables based on Backward LR procedure

Variable	Adjusted			Un-adjusted		
	OR*	95% CI <sup>e</sup>	P	95% CI	P	OR
<b>Psychological</b>						
<b>Sex</b>						
Male	0.27	16 to 0.44	<0.001	0.17 to 0.49	<0.001	0.29
Female	Referent	-	-	-	-	-
<b>Age</b>	1.01	0.99 to 1.03	0.267	-	-	-
<b>Number of child</b>	1.08	0.97 to 1.20	0.158	-	-	-
<b>Time in month</b>	0.99	0.99 to 1.00	0.28	-	-	-
<b>Marriage</b>						
Single	0.76	0.43 to 1.33	0.34	-	-	-
Married	Referent	-	-	-	-	-
<b>Job</b>						
Employee	0.71	0.34 to 1.49	0.36	-	-	-
House worker	2.68	1.36 to 5.30	0.005	-	-	-
Farmer	1.02	0.42 to 2.48	0.96	-	-	-
Other	Referent	-	-	-	-	-

\*OR: Odds Ratios, <sup>e</sup>CI: confidence interval

**Table 3.** (Continued) Results of logistic regression for patient's needs and analysis of study variables based on Backward LR procedure

Variable	OR*	Adjusted		Un-adjusted		
		95% CI <sup>€</sup>	P	95% CI	P	OR
<b>Live</b>						
Alone	5.25	1.69 to 16.31	0.004	1.08 to 11.44	0.04	3.51
Couple	0.72	0.29 to 1.82	0.049	0.21 to 1.48	0.24	0.56
Family	1.79	0.95 to 3.40	0.072	-	-	-
With parents	Referent	-	-	-	-	-
<b>Health</b>						
<b>Sex</b>						
Male	0.50	0.27 to 0.90	0.02	0.25 to 0.84	0.01	0.45
Female	Referent	-	-	-	-	-
<b>Age</b>	0.98	0.96 to 1.01	0.03	0.96 to 1.01	0.03	0.98
<b>Number of child</b>	1.05	0.92 to 1.2	0.46	-	-	-
<b>Time in month</b>	0.99	0.98 to 1.01	0.01	0.98 to 1.01	0.01	0.99
<b>Marriage</b>						
Single	0.94	0.47 to 1.87	0.85	-	-	-
Married	Referent	-	-	-	-	-
<b>Job</b>						
Employee	1.51	0.66 to 3.46	0.32	-	-	-
House worker	2.10	0.97 to 4.53	0.06	-	-	-
Farmer	2.47	0.80 to 7.64	0.11	-	-	-
Other	Referent	-	-	-	-	-
<b>Live</b>						
Alone	0.907	0.20 to 1.86	0.38	-	-	-
Couple	0.477	0.17 to 1.30	0.15	-	-	-
Family	1.198	0.54 to 2.67	0.66	-	-	-
With parents	Referent	-	-	-	-	-
<b>Support</b>						
<b>Sex</b>						
Male	1.09	0.67 to 1.77	0.72	-	-	-
Female	Referent	-	-	-	-	-
<b>Age</b>	0.10	0.97 to 1.01	0.27	-	-	-
<b>Number of child</b>	1.01	0.91 to 1.13	0.768	-	-	-
<b>Time in month</b>	1.00	0.99 to 1.01	0.92	-	-	-
<b>Marriage</b>						
Single	0.44	0.25 to 0.78	0.005	0.25 to 0.78	0.005	0.44
Married	Referent	-	-	-	-	-
<b>Job</b>						
Employee	0.61	0.29 to 1.27	0.19	-	-	-
House worker	0.49	0.25 to 0.96	0.04	-	-	-
Farmer	0.50	0.20 to 1.25	0.14	-	-	-
Other	Referent	-	-	-	-	-
<b>Live</b>						
Alone	0.56	0.21 to 1.50	0.25	-	-	-
Couple	0.61	0.25 to 1.49	0.28	-	-	-
Family	0.41	0.22 to 0.79	0.01	-	-	-
With parents						
<b>Physical</b>						
<b>Sex</b>						
Male	0.25	0.146 to 0.433	<0.001	0.10 to 0.79	0.02	0.28
Female	Referent	-	-			

\*OR: Odds Ratios, <sup>€</sup>CI: confidence interval



**Table 3.** (Continued) Results of logistic regression for patient’s needs and analysis of study variables based on Backward LR procedure

Variable	Adjusted			Un-adjusted		
	OR	95% CI	P	95% CI	P	OR
<b>Age</b>	1.07	1.04 to 1.09	<0.001	1.05 to 1.13	<0.001	1.08
<b>Number of child</b>	1.38	1.20 to 1.60	<0.001	-	-	-
<b>Time in month</b>	0.30	1.00 to 1.02	0.03	1.00 to 1.03	0.01	1.02
<b>Marriage</b>						
Single	1.695	0.95 to 3.03	0.07	-	-	-
Married				-	-	-
<b>Job</b>						
Employee	2.23	1.06 to 4.68	0.35	-	-	-
House worker	10.25	4.67 to 22.47	<0.001	0.91 to 8.68	0.03	4.91
Farmer	2.23	0.91 to 5.50	0.08	-	-	-
Other				-	-	-
<b>Live</b>						
Alone	4.9	1.65 to 14.50	<0.001	0.099 to 4.66	0.7	0.67
Couple	3.119	1.23 to 7.86	0.02	0.02 to 0.57	0.01	0.11
Family	5.78	2.93 to 11.38	<0.001	0.07 to 0.10	0.05	0.27
With parents	Referent	-	-	-	-	-
<b>Sexuality</b>						
<b>Sex</b>						
Male	0.25	0.150 to 0.43	<0.001	0.86 to 5.73	0.10	2.22
Female	Referent	-	-	-	-	-
<b>Age</b>	1.07	1.04 to 1.09	<0.001	0.95 to 0.97	0.02	0.97
<b>Number of child</b>	0.92	0.82 to 1.02	0.122	-	-	-
<b>Time in month</b>	0.99	0.98 to 1.00	0.17	-	-	-
<b>Marriage</b>						
Single	2.64	1.43 to 4.90	0.002	-	-	-
Married	Referent	-	-	-	-	-
<b>Job</b>						
Employee	7.69	3.22 to 18.35	<0.001	3.40 to 25.14	<0.001	9.24
House worker	3.02	1.34 to 6.79	0.010	2.36 to 29.62	0.001	8.36
Farmer	3.70	1.37 to 10.03	0.010	1.43 to 14.45	0.010	4.55
Other	Referent	-	-	-	-	-
<b>Live</b>						
Alone	2.33	0.86 to 6.36	0.01	-	-	-
Couple	2.33	0.93 to 5.85	0.07	-	-	-
Family	1.88	0.95 to 3.70	0.07	-	-	-
With parents	Referent	-	-	-	-	-

\*OR: Odds Ratios, €CI: confidence interval

needs.

In literature review there are some studies that reported cancer patients have low unmet supportive care needs,<sup>6,16</sup> but most of studies showed that cancer patient<sup>7,15</sup> have many unmet supportive care needs.

Although, it should be noted that the unmet supportive care needs as reported by participants of present study was higher than aforementioned studies. The results of present study showed that eight of eighteen most

frequent unmet supportive care needs of cancer patients are related to health system and information domain. Some previous studies in Iran confirm this finding and showed that Iranian cancer patients did not receive desired information about many aspects of their disease.<sup>18,19</sup> This finding is in some degree different from previous studies conducted in Western countries such as Australia, Canada, USA, and UK that reported health system and information domain is the

second or third domain that their needs is not met.<sup>8,13,22,23</sup> In other hand, the results of some studies in southwest of Asia showed that the needs from health care and information domain are between most frequent unmet supportive care needs of cancer patients.<sup>10-12,24</sup> Similarly, the result of a comparative study showed that Hong Kong breast cancer patients rate needs of health system and information domain as a most frequent unmet supportive care needs. German women consider needs from physical and daily living and psychological needs as a most frequent unmet supportive care they experienced.<sup>6</sup> So, it seems that, this finding approves this hypothesis that supportive care needs are culture dependent issue.<sup>6</sup>

The results of present study also indicated that psychological needs are the third category of unmet supportive care needs of Iranian cancer patients after needs in health system and information and physical and daily living domains. This finding is consistent with the results of other studies in non-Western countries.<sup>10-12,24</sup> It should be noted that previous Iranian studies reported that many of Iranian cancer patients do not aware of the prognosis of their diseases.<sup>20,25</sup> So, it may concluded non-disclosure of cancer prognosis for most Iranian cancer patients may result in to a situation that Iranian cancer patients reported lower levels of psychological supportive care needs.

The results of this study showed that females and patients who living alone are at risk of having more psychological unmet needs. In this regards one study showed that sex is not a predictor of psychological needs.<sup>24</sup> Another study showed that males have more unmet supportive care needs than females.<sup>23</sup> In spite of the results of previous studies<sup>23,24</sup> that most of them were conducted in Western countries, it is predictable that Iranian female cancer patients experiences more psychological needs.

Pervious Iranian studies have reported that females experience more stress after diagnosis of cancer and many of them were at risk of marital problems and even divorce.<sup>26</sup> The

interesting finding about psychological domain is that time since diagnosis was not a predictor of psychological needs. Also, some previous studies indicated that by increase in time passed since diagnosis the supportive care needs of cancer patients may decrease.<sup>9</sup> In this regards one pervious study conducted in Iran showed that many of Iranian cancer patients experiences a short term psychological distress after disclosure of their exact diagnosis.<sup>19</sup> This short term reaction is usually continue for some weeks to some month<sup>20</sup> and in this study only patients who be aware of their exact diagnosis for at least 3 months was participated. Another Iranian study reported that non-disclosure of cancer prognosis and belief in miracle cure are most important reasons for short term reaction of Iranian cancer patients to disclosure of their diagnosis.<sup>26</sup>

Previous Iranian studies showed that Iranian cancer patients have many informational needs<sup>18,19</sup> and these needs are further in male cancer patients and females were less willing to obtain information<sup>19</sup> and also, health care providers and family members are not interested to provide information for female ones.<sup>20,26</sup> Also, other Iranian study showed that Iranian cancer patients in early period of awareness of exact diagnosis avoid receiving information and their tendency to obtain information, especially about side effects and efficacy of treatments and life style changes increase in next periods after awareness of exact diagnosis.<sup>26</sup> So, the finding of this study is predictable by considering the results of previous studies.

Regarding physical and daily living needs, these needs were further in females or in patients who living alone.

Moreover, these needs increase by increase in any years of old, number of children and time passed since awareness of exact diagnosis. Like other domains, the results of previous studies showed that there is no agreement between them regarding the predictors of physical and daily living needs. For example, the results of one study showed that by increase in age the unmet physical and

daily living needs was increased.<sup>27</sup> Another study showed that these needs were further in younger patients.<sup>15</sup> It seems that, regarding time passed since diagnosis there was an agreement that by increase in this time the unmet physical and daily living needs of patients was increased.<sup>9</sup>

About patient care and support needs, married, house workers, and patients living with their spouses and children reported more needs. Like other domains the results of previous studies regarding predictive factors of patient care and support domain were inconsistent.<sup>8,25</sup> This finding is interesting because results of some previous qualitative researches reported that family and especially spouse and parents are most important resources of support for Iranian cancer patients.<sup>26</sup> So, approving this finding need more studies.

The results of present study have many clinical implications. First, the results showed that Iranian cancer patients have many supportive care needs in different domains. By considering this results with this fact that there is no formal and designed supportive care programs for Iranian cancer patients,<sup>28</sup> it is obvious that there is emergency need for designing and implementation of this programs for Iranian cancer patients. Second, the results showed that in present context the focus of such programs should be on informational and physical and daily living needs of patients. Third, there were different predictors for any domain of supportive care needs but in general female cancer patients are at risk of more unmet supportive care needs. So, health care professionals should be more sensitive to fulfillment of supportive care needs of female.

Like all researches, this study has some limitations that limit the generalizability of findings. First, this study was conducted in one medical center in Iran and even though this is the main referral center for North Western Iran, but does not cover all parts of Iran.

Second, it seems that the findings related to sexual health supportive care needs ought to

be interpreted with caution, so, there is a need for further studies for investigation the supportive care needs of different cultures in Middle East and maybe using other data collection methods like private interviews may increase the validity of results in sexual domain of supportive care needs.

## Conclusion

The results showed that Iranian cancer patients have many supportive care needs in different domains. In general female cancer patients are at risk of more unmet supportive care needs. So, health care professionals should be more sensitive to fulfillment of supportive care needs of female.

## Acknowledgments

This study is conducted by financial support of hematology and oncology research center affiliated to Tabriz University of Medical Sciences. Researchers are very grateful to all of cancer patients who accepted to participate in the present study.

## Ethical issues

None to be declared.

## Conflict of interest

The authors declare no conflict of interest in this study.

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