

RESEARCH ARTICLE

The Nature of Hope among Iranian Cancer Patients

Rashed Afrooz¹, Azad Rahmani^{2*}, Vahid Zamanzadeh¹, Farahnaz Abdullahzadeh¹, Arman Azadi³, Safieh Faghany¹, Asgar Pirzadeh⁴

Abstract

Background: Hope is an important coping resource for cancer patients. Types and sources of hope and hope-inspiring strategies are not well investigated among Iranian cancer patients. The aims of present study were therefore to investigate the nature of hope and some demographic predictors of hope among Iranian cancer patients. **Materials and Methods:** This descriptive-correlational study was undertaken among 200 cancer patients admitted to an educational center affiliated to Ardabil University of Medical Sciences, Iran. Participants were selected using a convenience sampling method. The Herth Hope Index and other validated questionnaires were used to investigate level of hope and types and sources of hope, as well as hope-inspiring strategies. Data were analyzed using SPSS statistical software. **Results:** The overall score for hope was 31 from total scores ranging between 12 and 48. Some 94% of patients mentioned 'return to normal life' and 'complete healing of disease by drugs and physicians' as their main hopes. The most important sources of hope reported by patients include spiritual resources, family members, healthcare workers, and medicines and treatments available for the disease. Relationship with God, praying/blessing, controlling the signs and symptoms of the disease, and family/health care workers' support were the main hope-inspiring strategies. Patients who had a history of metastasis, or who were older, illiterate, divorced/widowed and lived with their children reported lower levels of hope. On the other hand, employed patients and those with good support from their families had higher levels of hope. **Conclusions:** The study findings showed moderate to high levels of hope among Iranian cancer patients. Accordingly, the role of spiritual/religion, family members and health care workers should be considered in developing care plans for these patients.

Keywords: Hope - cancer patients - maintaining hope - Iran

Asian Pac J Cancer Prev, 15 (21), 9307-9312

Introduction

Cancer is one of the main health problems in the world and its prevalence rising at an alarming rate (Baykal et al., 2009). It has been estimated that the annual incidence of 10 million new cancer cases in 2000 will rise to 15 million by 2020 (Kanavos, 2006). In our country, Iran, cancer is the third leading cause of death and more than 30 thousand people dies because of cancer every year (Eaton., 2003; Kamangar et al., 2006).

Cancer patients may face many problems in the physical, mental, socio-economic, spiritual, and cultural dimensions of their life (Hann et al., 2002; Abdi et al., 2007; Missel and Birkelund., 2011). Therefore, cancer patients need lots of coping resources to deal with these problems (Mousavi et al., 2009). Spirituality/religion (Puchalski., 2001; Overcash., 2004), social support (Tavakol and Naseri., 2012), creating meaning in life (Kang et al., 2009), and family/healthcare workers' support (Ben-Zur et al., 2001; Overcash., 2004; Rafii et

al., 2009) have been recognized as important sources for coping with cancer.

Hope is another important source that can helps cancer patients cope more efficiently at all stages of disease (Mack, 2007; Mun, 2007; McClement and Chochinov, 2008; Feuz, 2012). Hope also has undeniable effects on humans' health (Nekolaichuk et al., 1999; Elliott and Olver., 2007). These effects include but not limit to greater tolerance to pain and other physical problems (Cohen and Ley., 2000; Saleh and Brockopp., 2001), enhancement of confidence and spiritual beliefs, and improvement of social relations in cancer patients (Vellone et al., 2006).

Some of the major properties of the concept of hope include focus on the future, positivity, realism, and goal-directness (Benzein and Saveman., 1998). According to the importance of hope for cancer patients, most of studies exploring this concept have been conducted among cancer patients (Duggleby et al., 2007). So, maintaining and inspiring of hope is the core of care for cancer patients (Duggleby et al., 2007; Tutton et al., 2009). The literature

¹Medical Surgical Department, Nursing and Midwifery Faculty, ²Hematology and Oncology Research Center, Tabriz University of Medical Sciences, Tabriz, ³Public Health Department, Nursing and Midwifery Faculty, Ilam University of Medical Sciences, Ilam, ⁴Faculty of Medicine, Ardabil University of Medical Sciences, Ardabil, Iran *For correspondence: azad.rahmani@yahoo.com

review revealed some studies that surveyed level of hope among Iranian cancer patients. These studies reported that most of Iranian cancer patients had moderate to high levels of hope (Mogimian and Salmani., 2010; Baljani et al., 2011; Aghahosseini et al., 2012).

In addition, other aspects of the concept of hope such as types of hope, sources and hope-inspiring strategies have been considered by other studies. For example, main sources of hope in Western literature include hope for recovery and healing, having long life, death with dignity, return to normal life, maintaining quality of life, and family/healthcare workers' support. In addition, these studies recommended strategies such as relieving pain, controlling physical symptom, providing relevant information, and providing support for promoting hope among cancer patients (Ballard et al., 1997; Cohen and Ley., 2000; Benzein et al., 2001; Saleh and Brockopp., 2001; Clayton et al., 2005; Reynolds., 2008; Cross and Schneider., 2010). However, it should be noted that as evident, there are no clear consensus among Western literature about types of hope, sources and hope-inspiring strategies among cancer patients (Benzein et al., 2001; Vellone et al., 2006; Reynolds., 2008).

To the best of our knowledge, there are inadequate studies that examined types and sources of hope, as well as strategies for promoting hope among Iranian cancer patients. Additionally, hope is a concept that related to culture and religion (Holt, 2000; Beres, 2002). So, the results of studies in western countries are often not applicable in Eastern contexts. So, the aims of present study were to investigate the nature of hope and some demographic predictors of hope among Iranian cancer patients.

Materials and Methods

This descriptive-correlational study was conducted in an educational center affiliated to Ardebil University of Medical Sciences, Ardebil, Iran. This center has one in-patient ward and two out-patient clinics. The study population included all patients who met the following criteria: (a) having confirmed cancer diagnosis; (b) be at least 18 years old; (c) willing to participate in the study; and (d) at least 3 months passed since they were aware of exact diagnosis. Patients with any chronic diseases or severe psychological disorder were excluded. The sample size (n=195) was calculated based on a pilot study of 30 patients. Considering sample attrition, a convenience sample of 230 cancer patients was invited to participate in the study. Overall, 200 cancer patients accepted to be enrolled (response rate=87%).

The instrument for data collection composed of three parts. The first part was to collect the demographic characteristics of patients. The second part included Herth Hope Index (HHI), a self-reporting scale that quantifies the level of hope, developed by Herth in 1989 (Herth, 1992). This scale has 12 items classified according to a four-point Likert scale ranging from 1 (not true at all) to 4 (always true). Two of the items (3 and 7) are scored in the reverse. The total score of HHI is 12 to 48 points; the higher the score, the greater the level of hope. This scale has been

used in some Iranian studies (Pourghaznein et al., 2003; Pourghaznein., 2004; Aghahosseini et al., 2010). The third part of instrument was a questionnaire that measured types of hope (8 items), sources (14 items) and hope-inspiring strategies (20 items). This questionnaire designed according to an Iranian qualitative study (Rahmani et al., 2011) and some related literature (Ballard et al., 1997; Benzein et al., 2001; Clayton et al., 2005; Reynolds, 2008; Cross and Schneider, 2010).

About types of hope, each patient could specify one types of hope. But for sources and hope-inspiring strategies it was possible to specify more than a choice. For using the scale, HHI was translated into Persian and then, its accuracy and fluency confirmed by two Persian-English translators. The scale's face and content validity were assessed and verified by the expert panel constituted ten academic members. The final version of the questionnaires was tested for reliability in a pilot study involving 30 cancer patients. A Cronbach-Alpha coefficient value for HHI was 0.87.

Before the data collection, the study proposal was approved by the Regional Ethics Committee of Tabriz University of Medical Sciences. Next, researchers were referring to the in-patient ward and both out-patient clinics from March 2013 to May 2014. Patients who met criteria for the study were identified and all eligible patients were invited to participate. After being presented basic information, willing patients were asked to participate in a private interview for data collection. All patients who participated in the study gave informed consent. One of the main challenges of this study was to identify patients who knew their final diagnosis. So, according to the Ethics Committee guidelines, at first, patient relatives or healthcare workers were asked regarding patients awareness of their diagnosis. If there was any ambiguity, that information was confirmed by patients during a short and private interview.

Data were analyzed using SPSS version 13. Descriptive statistics such as the frequency, percentage, mean and standard deviation were used to describe demographic data, levels, types and sources of hope and hope-inspiring strategies. Relationships between patients' characteristics with levels of hope were assessed by inferential statistics including independent samples t-tests, one-way ANOVA, and Pearson's correlation as appropriate.

Results

According to demographic and disease-related data, most of patients were female (52%), married (88%), illiterate (53.5%), housekeeper (51%), and lived with their spouses and children (71.5%). All of them received chemotherapy treatments and 62% and 17.5% of them received surgery and radiotherapy respectively. Gastro-intestinal cancer (45%) was the most common types of their diagnosis. Recurrence and metastasis were reported by 15.5% and 20% of participants respectively. The mean age of participants was 54.8 years; the time passed since diagnosis was 10.8 month; time passed since recurrent and metastasis was 3.9 month.

The overall score for hope in this study was 31.4.

Table 1. Type, Sources and Strategies of Hope among Participants

N (%)	Variable Type of hope	N (%)	Variable Type of hope
5 (2.5)	Maintaining morale the process of disease	75 (37.5)	Complete healing of disease by drugs and physicians
112 (56)	Return to normal life	1 (0.5)	Complete healing of disease by miracle
0 (0)	Acquisition of longevity	3 (1.5)	Not disabled
1 (0.5)	Maintaining quality of life	3 (1.5)	Comfortable death
N (%)	Sources for hope	N (%)	Sources for hope
135 (67.5)	Child	127 (63.5)	Physicians
15 (7.5)	Relatives	117 (58.5)	Nurses
41 (20.5)	Friends & co-workers	124 (62)	Medicines and treatments available for the disease
200 (100)	God	70 (35)	Scientific advancements in cancer treatments
182 (91)	Prophets and Imams	120 (60)	Spouse
119 (59.5)	Financial resources	26 (13)	Father
0 (0)	Complementary medicine	34 (17)	Mother
N (%)	Hope- inspiring strategies	N (%)	Hope- inspiring strategies
0 (0)	Avoid of relationship with cancer patients	169 (84.5)	Controlling the signs and symptoms of the disease
52 (26)	Be informing about scientific advancements in oncology	122 (61)	Receiving support from family
109 (54.5)	Visit the holy places and shrines	194 (97)	Relationship with God
6 (3)	Resting at home	6 (3)	Suitable self-care behaviors
101 (50.5)	Spending time with family	109 (54.5)	Proper caring behaviors of nurses
25 (12.5)	Traveling	58 (29)	Not thinking about the disease
25 (11)	Planning for the future	26 (13)	Setting appropriate goals for the future
174 (87)	Blessing	50 (25)	Receiving information about the disease
164 (82)	Praying	54 (27)	Relationship with healed patients
132 (66)	Appropriate manner of physician	19 (9.5)	Reading the stories of healed patients

Table 2. The Relationship between Hope and Some Characteristics of Cancer Patients

Variables	Subgroups	Mean (SD)	p-value
Sex	Male	31.85 (8.10)	p= 0.50
	Female	31.09 (7.75)	
History of recurrence	Yes	32.09 (7.69)	p= 0.62
	No	31.34 (7.69)	
History of metastasis	Yes	29.30 (8.83)	p= 0.04
	No	32.00 (7.59)	
Education level	Illiterate	29.63 (7.46)	p= 0.001
	Primary	32.03 (7.90)	
	Diploma	36.83 (7.06)	
Marital status	University degree	37.40 (7.36)	p= 0.001
	Single	37.37 (7.70)	
	Married	31.80 (7.68)	
	Widow/divorce	24.75 (6.79)	p= 0.001
	With spouse	32.33 (6.41)	
	With spouse and children	31.67 (7.96)	
Living situation	With children	24.00 (6.31)	p= 0.004
	With parents	37.22 (7.22)	
Job	Clerk	40.25 (4.16)	p= 0.004
	Retired	29.63 (7.96)	
	Hand worker	31.70 (7.60)	
	Housekeeper	31.05 (7.76)	
	Unemployed	33.20 (8.75)	
Support from family	Very bad	18.50 (9.19)	p= 0.001
	Bad	18.28 (4.64)	
	Average	25.04 (6.42)	
	Good	32.76 (5.94)	
	Very good	40.16 (6.01)	
Type of cancer	Gastro-intestinal	30.94 (6.97)	p= 0.14
	Hematologic	34.41 (9.07)	
	Breast	31.15 (7.80)	
	Lung	29.09 (5.94)	
	Other	30.67 (9.24)	
Age in years			p= 0.001
Time passed since diagnosis in month			p= 0.82
Time passed since recurrent and metastasis by month			p= 0.29

*SD = standard deviation

Table 1 showstypes and sources of hope, and hope-inspiring strategies in the study population. A total 94 percent of patients referred to 'return to normal life' and 'permanent healing facilitated by doctors and drugs' as their main types of hope. The most important sources of hope identified by patients include spiritual beliefs, family, healthcare workers, and scientific advancements in cancer

treatments. Moreover, complementary medicine, friends and parents were the least important sources.

Spiritual strategies, family support, controlling the signs and symptoms of the disease, and strategies used by physician and nurses were the most hope-inspiring approaches. As well, avoid relationships with other cancer patients, suitable self-care behaviors, and resting at home were the least used strategies to maintain hope among cancer patients.

The associations of hope with some demographic and disease-related data are displayed in Table 2. As shown in this table, patients with history of metastasis had lower hope scores and the score of hope was decreased by increasing in age of patients. The study finding also revealed other influencing factors on patients hope which include education, marital status, living situation, employment, and family support. In this regard, Turkey's Post-hoc test showed that patients who were illiterate, divorced/widowed and lived with their children had lower levels of hope. In contrast, employed patients and those with good support from their families had higher levels of hope.

Discussion

The aim this study was to examine the nature of hope in Iranian cancer patients. According to extensive literature review, this is one of the first studies which assessed some hope related factors such as types and sources of hope, and hope-inspiring strategies among Iranian cancer patients.

The study finding showed cancer patients had moderate to high levels of hope. Some other national and international studies have been reported similar findings (Vellone et al., 2006; Mogimian and Salmani, 2010; Baljani et al., 2011; Aghahosseini et al., 2012; Oztunc et al., 2013; Abdulbaqi and Hijazeen, 2014). Therefore, the finding of this study highlighted the importance of

existing evidence.

One of the hope related variable which investigated in this study was types of hope. Most of patients referred to 'return to normal life' and 'permanent healing facilitated by doctors and drugs' as their main types of hope. This finding is incongruent with some Western studies that reported hope for recovery/healing and return to normal life as main types of hope in cancer patients (Clayton et al., 2005; Reynolds, 2008). Despite lack of related studies in Iran, in a qualitative study, 'belief in treatment' was the core category of the process of inspiring hope in Iranian cancer patients (Rahmani et al., 2011). The fact that 94 percent of patients were reported these two types of hope more than others, indicate the extents of 'belief in treatment' in Iranian cancer patients. It seems inappropriate information disclosure to Iranian cancer patients resulted in their poor knowledge regarding diagnosis/prognosis, is one of important factors that cause inordinate belief in treatment.

The most important sources of hope reported by patients include spiritual resources (God, prophet, Imams), family (offspring, spouse), and treatment resources (healthcare workers, scientific advancements in cancer treatments). Pourghaznein et al. (2003) and Rahmani et al. (2011) also reported God, family, physician/nurses statements, and adequate amount of monetary supplies as hope-inspiring resources in Iranian cancer patients (Pourghaznein et al., 2003; Rahmaniet al., 2011).

This is also supported by Sajadian and Montazeri (2011) who stated faith, reliance in God/ spiritual powers, and family support, especially spouse, as main sources of hope in Iranian patients with breast cancer (Sajadian and Montazeri., 2011). These findings are also congruent with other western studies who reported God, family and healthcare workers as sources of hope for cancer patients (Ballard et al., 1997; Cohen and., 2000; Duggleby and Wright., 2004; Vellone et al., 2006). However, spiritual resources reported by almost all patients are the interesting findings of this study.

In this study relationship with God, praying/blessing, controlling the signs and symptoms of the disease, and obtain support from family/physicians were the most hope- inspiring strategies. These findings are consistent with Cross and Schneider (2010), and Clayton et al. (2005) studies who reported relieving pain, controlling physical symptoms, and gaining others' support as the main hope-inspiring strategies (Clayton et al., 2005; Cross and Schneider., 2010).

Similar to our findings, Reynolds (2008) reported spiritual beliefs, receiving support from family/friend/ healthcare workers, and controlling disease symptoms as main hope-enhancing strategies (Reynolds., 2008). As well as, in Juvakka and Kylma (2009) study, relationship with God and emotional support were the most hope-enhancing strategies in adolescents with cancer (Juvakka and Kylma., 2009). Similiary, Saleh (2001) reported that religion and decrease the side effects of treatments are important factors in enhancing hope among cancer patients (Saleh and Brockopp., 2001). These findings are consistent with the results of present study.

The results of present study showed that hope has a statistical significant relationship with some demographic

characteristics of cancer patients. The results of this study showed that married patients have higher levels of hope. On the other hand, results showed that patients with better social support, including married patients, have higher levels of hope. We can conclude from these results that social support is an important factor in inspiring hope for cancer patients. These results are consistent with other Iranian (Pourghaznein et al., 2003; Abdullah-zadehet al., 2011) and western studies (Vellone et al., 2006). Also, the results showed that younger patients have a higher level of hope. Results of previous studies regarding the relationship of hope with age were inconsistent. While some studies approved the results of present study (Rustoen and Wiklund, 2000; Duggleby et al., 2013), others were failed to demonstrate such a relationship (Pourghaznein et al., 2003; Felder, 2004; Vellone et al., 2006; Juvakka and Kylma., 2009; Zhang et al., 2010; Denewer et al., 2011). We believed that the relation between hope and age is related to educational level. Younger Iranian patients are more educated and have a more access to information about treatments and advancement in cancer treatments. Theses relationship demonstrated in previous qualitative study on Iranian cancer patients (Rahmaniet al., 2011). Also, we believed that relation observed between hope and job is related to higher educational level of patients with governmental job. Also, the results of previous studies regarding relationship between hope and educational level were inconsistent (Pourghaznein et al., 2003; Mogimian and Salmani, 2010; Zhang et al., 2010; Denewer et al., 2011). In addition, the results of previous studies regarding relationship of hope with sex (Rustoen and Wiklund., 2000; Pourghaznein et al., 2003; Felder., 2004; Vellone et al., 2006; Abdullah-zadeh et al., 2011), and type of cancer (Rustoen and Wiklund., 2000; Felder, 2004) was inconsistent. So, there is a need for more studies regarding predictors of hope among cancer patients.

The study findings can be used for designing effective strategies formaintaining and promoting hope among Iranian cancer patients. Finding showed high level of hope among Iranian cancer patients. So, hope can be used as a positive agent in caring for these patients. Furthermore, the study findings revealed that most of Iranian cancer patients having hope for complete recovery and returning to normal life. Accordingly, in caring for these patients, it should be considered that unwelcome disclosure can damage level of hope. Certainly, false hope is not a desirable outcome, but this is context-based issue which requires better understanding of conditions leading to such perceptions. Study finding also showed that spiritual, family, and healthcare worker resources have an important role in maintaining hope in Iranian cancer patients. So, the role of spiritual/religion, family members, and supportive behaviors should be considered in developing care plans for these cancer patients.

Despite the strength of this study, it also has some limitations. First, a convenience sample of cancer patients admitted to one educational center in north-western of Iran is not representing variation of all the country population. In relation to future research, replicating such studies in other Iranian cultures as well as, Middle Eastern countries is required. Also, understanding all factors that affects

positive perception of Iranian cancer patients regarding disease prognosis requires further studies.

Acknowledgements

This is a report of a database from thesis entitled "nature of hope among Iranian cancer patients" approved by Tabriz University of Medical Sciences. The authors wish to acknowledge all of the patients, whose contribution enabled the production of this article.

References

- Abdi N, Taghdisi MH, Nagdi S (2007). The effects of hope promoting interventions on cancer patients. A case study in Sanandaj, Iran. *J Armağan Danesh*, **14**, 14-21. (Persian)
- Abdullah-Zadeh F, Agahosseini S, Asvadi-Kermani I, Rahmani A (2011). Hope in Iranian cancer patients. *IJNMR*, **16**, 288-91.
- Abu-Helalah M, Al-Hanaqta M, Alshraideh H, Abdulbaqi N, Hijazeen J (2014). Quality of life and psychological well-being of breast cancer survivors in Jordan. *Asian Pac J Cancer Prev*, **15**, 5927-36.
- Aghahosseini SS, Abdullah-zadeh F, Asvadi-Kermani I, Rahmani A (2010). The relation between awareness of cancer diagnosis and hope among cancer patients. *J Med Ethics Hist Med*, **3**, 67-72 (in Persian)
- Aghahosseini SS, Rahmani A, Abdollahzadeh F, Asvadi Kermani I (2012). The relation between awareness of cancer diagnosis and spiritual health among cancer patients. *J Caring Sci*, **1**, 67-72 (in Persian).
- Baljani E, Khashabi J, Amanpour E, Azimi N (2011). Relationship between spiritual wellbeing, religion, and hope among patients with cancer. *Hayat*, **17**, 27-37 (in Persian).
- Ballard A, Green T, McCaa A, Logsdon MC. A comparison of the level of hope in patients with newly diagnosed and recurrent cancer. *Oncol Nurs Forum*, **24**, 899-904.
- Baykal U, Seren S, Sokmen S (2009). A description of oncology nurses' working conditions in Turkey. *Eur J Oncol Nurs*, **13**, 368-75.
- Benzein E, Norberg A, Saveman BI (2001). The meaning of the lived experience of hope in patients with cancer in palliative home care. *J Palliat Med*, **15**, 117-126.
- Benzein E, Saveman B-I (1998). One step towards the understanding of hope: a concept analysis. *Int J Nurs Stud*, **35**, 322-9.
- Ben-Zur H, Gilbar O, Lev S (2001). Coping with breast cancer patient, spouse, and dyad models. *J Psychol Med*, **63**, 32-9.
- Beres L (2002). Negotiating images: popular culture, imagination, and hope in clinical social work practice. *J Citation Reports*, **17**, 429-47.
- Clayton JM, Butow PN, Arnold RM, Tattersall MH (2005). Fostering coping and nurturing hope when discussing the future with terminally ill cancer patients and their caregivers. *Cancer*, **103**, 1965-75.
- Cohen MZ, Ley CD (2000). Bone marrow transplantation: the battle for hope in the face of fear. *Oncol Nurs Forum*, **27**, 473-80.
- Cross A, Schneider M (2010). A preliminary qualitative analysis of the impact of hope on stroke recovery in women. *Top Stroke Rehabil*, **17**, 484-95.
- Denewer A, Farouk O, We'am Mostafa KE (2011). Social support and hope among Egyptian women with breast cancer after mastectomy. *Breast Cancer*, **5**, 93-103.
- Duggleby WD, Degner L, Williams A, et al (2007). Living with hope: initial evaluation of a psychosocial hope intervention for older palliative home care patients. *J Pain Symptom Manage*, **33**, 247-57.
- Duggleby WD, Ghosh S, Cooper D, Dwernychuk L (2013). Hope in newly diagnosed cancer patients. *J Pain Symptom Manage*, **46**, 661-70.
- Duggleby WD, Wright K (2004). Elderly palliative care cancer patients' descriptions of hope-fostering strategies. *Int J Palliat Nurs*, **10**, 352-9.
- Eaton L (2003). World cancer rates set to double by 2020. *BMJ*, **326**, 728.
- Elliott JA, Olver IN (2007). Hope and hoping in the talk of dying cancer patients. *Soc Sci Med*, **64**, 138-49.
- Felder BE (2004). Hope and coping in patients with cancer diagnoses. *Cancer Nurs*, **27**, 320-4.
- Feuz C (2012). Hoping for the best while preparing for the worst: A literature review of the role of hope in palliative cancer patients. *J Medical Imaging Radiation Sciences*, **43**, 168-74.
- Hann D, Baker F, Denniston M, et al (2002). The influence of social support on depressive symptoms in cancer patients: age and gender differences. *J Psychosom Res*, **52**, 279-83.
- Herth K (1992). Abbreviated instrument to measure hope: development and psychometric evaluation. *J Adv Nurs*, **17**, 1251-9.
- Holt J (2000). Exploration of the concept of hope in the Dominican Republic. *J Adv Nurs*, **32**, 1116-25.
- Juvakka T, Kylmä J (2009). Hope in adolescents with cancer. *Eur J Oncol Nurs*, **13**, 193-9.
- Kamangar F, Dores GM, Anderson WF (2006). Patterns of cancer incidence, mortality and prevalence across five continents: defining priorities to reduce cancer disparities in different geographic regions of the world. *J Clin Oncol*, **24**, 2137-50.
- Kanavos P (2006). The rising burden of cancer in the developing world. *Ann Oncol*, **17**, 15-23.
- Kang K-A, Im J-I, Kim H-S, et al (2009). The effect of logotherapy on the suffering, finding meaning, and spiritual well-being of adolescents with terminal cancer. *J Korean Acad Child Health Nursing*, **15**, 136-44.
- Mack JW, Wolfe J, Cook EF, et al (2007). Hope and prognostic disclosure. *J Clin Oncol*, **25**, 5636-42.
- McClement SE, Chochinov HM (2008). Hope in advanced cancer patients. *Eur J Cancer*, **44**, 1169-74.
- Missel M, Birkelund R (2011). Living with incurable oesophageal cancer. A phenomenological hermeneutical interpretation of patient stories. *Eur J Oncol Nurs*, **15**, 296-301.
- Mogimian M, Salmani F (2010). The Study of correlation between spiritual well-being and hope in cancer patients referring to seyedoshohada training-therapy center of Isfahan University of medical sciences. *J Qom University of Medical Sciences*, **6**, 40-5 (in Persian).
- Mousavi SM, Gouya MM, Ramazani R, et al (2009). Cancer incidence and mortality in Iran. *Ann Oncol*, **20**, 556-63.
- Mun Hong IW OR (2007). Hope among terminally ill patients in Singapore: An exploratory study. *Soc Work Health Care*, **45**, 85-106.
- Nekolaichuk CL, Jevne RF, Maguire TO (1999). Structuring the meaning of hope in health and illness. *Soc Sci Med*, **48**, 591-605.
- Overcash JA (2004). Using narrative research to understand the quality of life of older women with breast cancer. *Oncol Nurs Forum*, **31**, 1153-9.
- Öztunc G, Yesil P, Paydas S, Erdogan S (2013). Social support and hopelessness in patients with breast cancer. *Asian Pac J Cancer Prev*, **14**, 571-78.
- Pourghaznein T (2004). Study of the relationship between hope and self-esteem in renal transplantation patients. *J Yazd University of Medical Sciences*, **13**, 57-61 (in Persian).
- Pourghaznein T, Hoshmand P, Firouzi ET, Esmaili H (2003). The sources of inspiration and the level of hope among

- cancer patients. *Iranian Psychiatry Clinical Psychology*, **4**, 82-7. (Persian)
- Puchalski CM (2001). The role of spirituality in health care. *Proc Bayl Univ Med Cent*, **14**, 352-57.
- Rafii F, Rambod M, Hosseini F (2009). Perceived social support in hemodialysis patients. *Hayat*, **15**, 5-12. (Persian)
- Rahmani A (2011). The process of inspiring hope in Iranian cancer patients: A grounded theory. Tabriz faculty of nursing and midwifery. Tabriz University of Medical Sciences.
- Reynolds MAH (2008). Hope in adults, ages 20–59, with advanced stage cancer. *Palliat Support Care*, **6**, 259-64.
- Rustoen T, Wiklund I (2000). Hope in newly diagnosed patients with cancer. *Cancer Nurs*, **23**, 214-9.
- Sajadian AS, Montazeri A (2011). Exploring the experiences of Iranian women with breast cancer: A qualitative study. *Iranian J Epidemiol*, **7**, 8-16. (Persian)
- Saleh US, Brockopp DY (2001). Hope among patients with cancer hospitalized for bone marrow transplantation: a phenomenologic study. *Cancer Nurs*, **24**, 308-14.
- Tavakol M, Naseri RM (2012). Health and social capital inequalities among people affected/not affected by cancer referring to cancer institute of Tehran, Iran. *Payavard*, **6**, 10-21 (in Persian).
- Tutton E, Seers K, Langstaff D (2009). An exploration of hope as a concept for nursing. *J Orthopaedic Nursing*, **13**, 119-27.
- Vellone E, Rega ML, Galletti C, Cohen MZ (2006). Hope and related variables in Italian cancer patients. *Cancer Nurs*, **29**, 356-66.
- Zhang J, Gao W, Wang P, Wu Z-h (2010). Relationships among hope, coping style and social support for breast cancer patients. *Chin Med J*, **123**, 2331-35.