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ORIGINAL ARTICLE

The Structural Model To Explain Depression After Diagnosis Of Intestinal Cancer Based On Illness Perception And Social Support

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Key words: Depression, Intestinal cancer, Illness perception, Social support

ABSTRACT

Introduction: Depression among cancer patients have a significant and negative impact on quality of life, adherence to therapy and disease returning and also have an important effect on burden of disease. Using structural equation modelling, this study aims at investigating the role of illness perception and social support in predicting depression in patients with intestine cancer.

Methods: In a cross sectional study a total of 300 patients with intestinal cancer were selected by convenience sampling. The population of study was the patients of Shahid Beheshti and Kamkar hospitals in city of Qom and Tehran's Imam Khomeini hospital in the year 2015. They were asked to complete the research instruments. Illness Perception Questionnaire (IPQ), Multidimensional Scale of Perceived Social Support (MSPSS) and the Beck Depression Inventory for Primary Care(BDI-PC) was used for data collection. Using SPSS and LISREL software and methods of exploratory factor analysis, confirmatory factor analysis and structural equation models data were tested.

Results: The results showed that illness perceptions predict 76% and perceived social support predict 50% of variance of depression directly. In addition, illness perception is an important mediator in the relationship between social support and depression and factor of family social support predicts directly 10% and by mediating of illness perception 30% of the variance of depression.

Conclusion: The variables of illness perception and social support have an important role in predicting depression in patients with intestine cancer diagnosis and should be noticed during treatment for intestine cancer. *JOURNAL OF IRANIAN CLINICAL RESEARCH* 2016;2(1): *135- 142.*

INTRODUCTION

Depression and cancer commonly co-occur. Cancer affects patients both physically and emotionally. Researchers have noted to the importance of the psychological state of cancer patients and the need for continuous assessment [1]. Should notice the treatment process affected by the mental state of patients. Finding and treating cancer at an early stage can help patients' servive. This group of patients are an important part of cancer patients and psychological factors has an important role in their lives. A great deal of progress has been made in treating and survival cancers in recent decades. Studies in National Cancer Institute in the United States has shown that the possibility of a 5-year survival after having colon cancer from 48.7% of patients in 1975 reached to 68.5% of patients in 2006 [2, 3].

Depression is the most common mental disorder among cancer patients and also is the main psychological disorder that makes disabilities in cancer patients [4]. Many studies have shown the prevalence of depression after cancer diagnosis [5, 6]. The outbreak has been different. Grassi and Rossetti found that prevalence of depression 15%, Prieto, Atala, Blnch et al., reported 9% and Sanchez, Vrlkyz, Lee et al., have reported a rate of 24-50 percent after diagnosis [7-9]. Studies have shown existing of depression in both groups of patients cancer survivors and those who were not

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managed to cure the disease [10, 11]. The importance of depression diagnosis and and its complications such as negative or depressed mood, lack of positive mood and affection, physical symptoms of depression and fatigue has emphasized in researches specially in those who survive after diagnosis [12].

The burden of cancer in the next decade upward trend will remain according to the predictions made in the recent studies, cancer cases will rise from 14 to 22 million in the next two decades as well as cancer is one of three leading cause of death throughout the world [13]. The country studies show that cancer with thirty thousand deaths in a year is one of three leading cause of death in Iran and it is more than traffic accidents victims [14]. Cancer of the gastrointestinal tract is the first leading cause of death among men and the second leading cause of death among women in our country [15]. Intestine cancer, including cancer of the small intestine or Crohn, cancer of the colon or rectum and colorectal cancer are an important part of cancer of the digestive tract.

Depression in cancer plays an important role in the Global Burden of Cancer. Increased economic burden resulting from effects on quality of life and psychological adaptation[16], impact of copay on poor adherence to medical recommendations [17], the rate of return of cancer or survival[18], worsening of symptoms, especially various pains[19] reduced survival and the weakened immune system [20]

Studies in the field of patients mood disorders have shown that there is an important relationship between patients' cognitive perception about their disease with depression [21]. Studies have shown the effect of providing education about the necessary cares as well as education about the disease and cognitive-behavioral therapy and using experience and knowledge of others in reducing depression in patients [27]. It is possible that the education affect on individuals' perception of illness [22].

Another variable which various studies have shown that associated with mood disorders in cancer patients is perceived social support. As well numerous studies have shown that treatment in group have an important affect for reducing anxiety and depression in cancer patients. Results of a meta-analysis showed that interventions that improve the patient's social relationships were significantly associated with increased chance of survival in their first two years after diagnosis and improve psychological well-being of patients [26]. Some studies suggest that applying cognitive models make better understanding of mechanisms linking relationships and social support to health problems [26]. According to self-regulation model, people respond to threatening disease on the basis of of their perception of the symptoms or social messages they receive. Individual's perception of disease such as its effect on their life, controllability and it's consequences, worry about illness and personal control it. However studies [25, 27, and 41] have shown the relationship between perceived social support and illness perception in patients with depression, detailed examination of the relationship between these variables and depression in cancer patients has not been studied. Most studies that have taken place are in the field of clinical interventions and meta-analyzes showing the impact of the mentioned variables while a strong relationship between illness perceptions and perceived social support and depression in cancer patients has not been examined. Considering the high prevalence of depression among cancer patients and its effects on quality of life, recurrence, adherence to treatment and patients survival, Detailed examination of the relationship between depression and disease-related variables such as perceived social support and illness perception is very important to design effective intervention programs. So there were the main questions that what relations are there between perceived social support, illness perception and depression? And is the illness perception as a mediator in the relationship between social support and depression after diagnosis of intestinal cancer.

MATERIALS AND METHODS

This study was a cross-sectional study in the year 2015 which used correlation Study. The population included all patients with intestinal cancer were referred to Sahid Beheshti and Kamkar hospitals in city of Qom and Imam Khomeini hospital in Tehran. The sample included 312 patients with intestinal cancer who were selected by convenience sampling based on inclusion and exclusion criteria. Inclusion criteria were: A definite diagnosis of cancer of the small intestine or large at the time of research, patient agreement for enter the study. Exclusion criteria were: Previous history of psychiatric disorders in patients, other medical diseases that reduce life expectancy in patients, cognitive disorders and end stage patients at the ending days of life.

Data was collected using three questionnaires; 1- Beck Depression Inventory for Primary Care (BDI-PC): This questionnaire was developed by Beck and colleagues for use in medical centers with remove the physical questions from the

original questionnaire and is set to separate psychological and cognitive symptoms from physical symptoms to diagnosis depression that occurs in physical patients.[31]. Studies have shown that this scale has better performance than Hospital Anxiety and Depression Scale [32]. This is a 7-point scale and is had acceptable reliability and validity. In Iran Cronbach's alpha is obtained 0.88 and test- retest coefficient 0.74 [33]. The construct validity of the questionnaire was 0.87 compared with hospital anxiety and depression scale. In peresent study, to examine the construct validity of the questionnaire, exploratory factor analysis with principal components and Varimax rotation was conducted. Statistical analysis by SPSS showed that the questionnaire consists of a factor that explains 59.05 percent of the observed variance. The Confirmatory factor analysis showed an appropriate goodness of fit. Therefore, this factor used to evaluate the structural model. 2- Multidimensional Scale of Perceived Social Support (MSPSS): This questionnaire has been developed by Zeman and colleagues (1988) to measure perceived social support from family, friends and the important people in one's life. This scale has 12 items and persons answer on a scale of 7 choice of a score 1 for strongly disagree to score 7 for strongly [34]. Brewer and his colleagues in 2008 in a sample of 788 young people from high school reported Cronbach's alpha 0.86 for the internal validity of the instrument [35]. In Iran Salimi and his colleagues reported Cronbach's alpha coefficient in three dimensions of social support received from family 0.89, friends 0.86 and 0.82 for important people in one's life [36]. In the present study, the factor analysis ability of the scale was investigated by Kaiser-Meyer-olkin test and Bartlett sphericity test. The KMO = 0.89 represents the sampling adequacy of scale and Bartlett's test specification of 42.3880, p= 0.0001 which indicates that the correlation matrix is not zero and therfore use of factor analysis is justified. Statistical analysis by SPSS showed that the questionnaire consists of three factors that explain 79.83 percent of the observed variance and Cronbach's alpha of three factors; family, friends and special person was 0.95, 0.87 and 0.89. The Confirmatory factor analysis showed an appropriate goodness of fit therefore, the evaluation of the structural models of these factors will be used. 3- Illness Perception Questionnaire (IPQ): In this study the short form of this scale used. The questionnaire included 9 subscales that its revised form was designed by Broadbent and colleagues. All subscales (except for questions about illness causation) will be answerd on a scale ranging from zero to ten. Each subscale measures a component of the perception of illness. Five subscales measure cognitive reactions to illness which include the perception of the consequences (item 1), duration of illness (item 2), personal control (item 3), controlling by treatment (item 4) and recognition symptoms (item 5). Two subscales measure worry about illness (item 6) and emotional reactions (item 8) and one subscale measures an ability to understaning the illness (item 7). Orientation of causality is an open question (item 9) that the patient is asked to make the list three of the most important factors that causes the illness. The reliability of the questionnaire with test-retest for each of the subscales was 0.48 from (item of the ability to understaning the illness) to 0.70 = (outcomes of the illness). [37] Cronbach's alpha in Persian version of the scale was 0.84 and correlation coefficient was 0.71[38]. After performing study, to examine the construct validity of the questionnaire, exploratory factor analysis with principal components and Varimax rotation was conducted. Data analysis by SPSS showed that the questionnaire consists of a factor that explains 77.6 percent of the observed variance. The Confirmatory factor analysis showed an appropriate goodness of fit. Therefore, this factor used to evaluate the structural model.

After determining the factors of all questionnaires using exploratory and confirmatory factor analysis, were entered into the Structural Equation Modeling. The data were analyzed using Pearson's correlation coefficient and path analysis by structural equation model.

RESULTS

The first aim was that is there the significant association between the three factors of perceived social support and depression? Data analysis by SPSS showed that social support component Including family, friends and special people have a significant negative correlation with depression ($r = - 0.67$, $P < 0.01$)(figure1).

Results showed that there is a significant negative correlation between existing factors in social support and depression. Goodness of fit index were: SRMR = 0.05, GFI = 0.89, CFI = 0.98, RMSEA = 0.05 so that the index represents the fit of the model was satisfactory. The results showed that social support of friends, family and specific person have a significant negative correlation with depression. Family support predicts 30% percent and support of friends and specific person predicts 8% and 2% of the variance of depression.

The second aim was to examine the association between the illness perception and depression. Results showed a significant correlation between illness perception and depression (r = 0.25, P < 0.01). Goodness of fit index were satisfactory; SRMR = 0.04, GFI = 0.86, CFI = 0.98, RMSEA = 0.06 illness perception predicts 76 percent of the variance of depression.

The third aim was to examine the association between the variable of illness perception and perceived social support. The family factor of social support showed a significant negative correlation with illness perception, but factors of specific person and friends did not show a significant relationship with illness perception. Due to insignificant contribution of these factors in explaining the variance of illness perception, the model was tested by dropping them again. The results showed a significant negative correlation between family support and illness perception (figure2). Fitting indicators were SRMR = 0.05, GFI = 0.94, CFI = 0.98, RMSEA = 0.07, AGFI = 0.86. These indicators represents the fit of the model was satisfactory. The results showed that family support predicts 49 percent of the illness perception variance.

The third goal of the current study was to test whether illness perception moderated the association between perceived social support and depression. To examine this structural model, considering that family factor of perceived social support only significantly associated with illness perception and Single factor of illness perception predicts depression, only these two factors entered the model (figure2, 3).

As can be seen in Figure 4 Significant positive correlations were observed between the variables in the model. There was significant chi-square fit index (X 2 = 19.472, P < 0.001) by the (df =124). Other fitting indicators were SRMR = 0.04, GFI = 0.86, CFI = 0.98, RMSEA = 0.08, AGFI = 0.82. These indicators represents the fit of the model was satisfactory. Also the path coefficients estimated by standard methods revealed that in this model, family support predicts directly 10% and by mediating of illness perception 30% of the variance of depression. This is a substantial portion of depression in patients with intestinal cancer. Should be noticed the results showed that there were no significant difference between data collected from two hospitals.

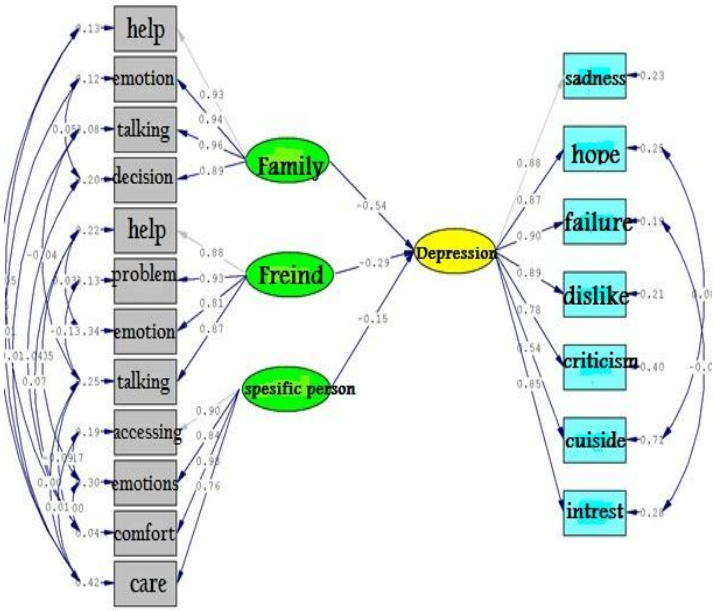

Figure 1. The structural relationship between social support and depression

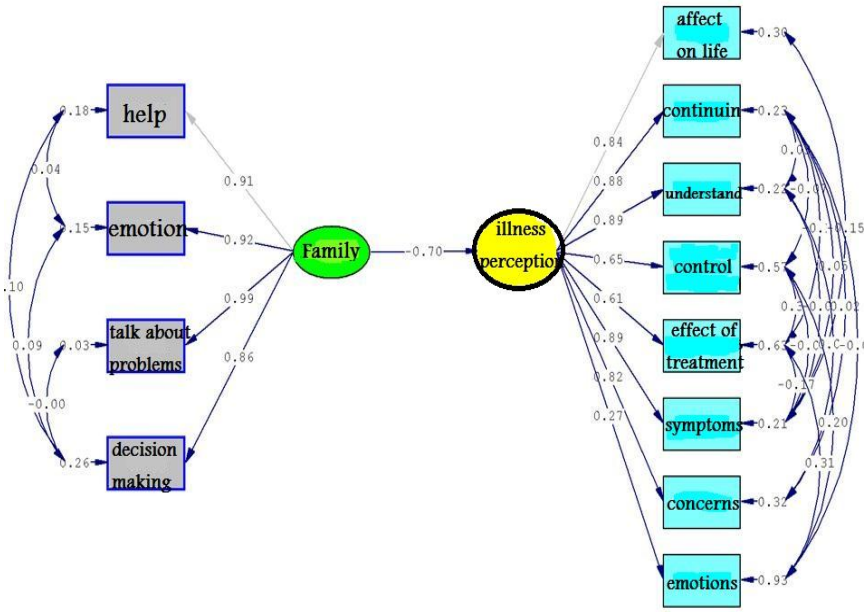

Figure 1. The structural relationship between social support and illness perception

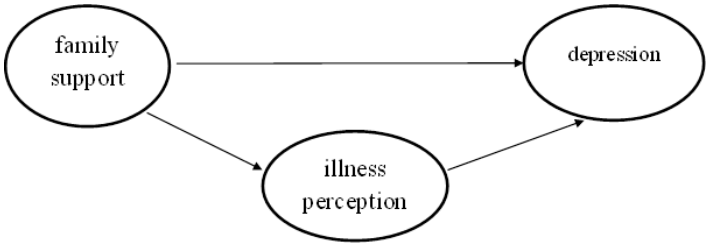

Figure 3. Conceptual Model of relationship between family support and depression directly and by illness perception as a mediator

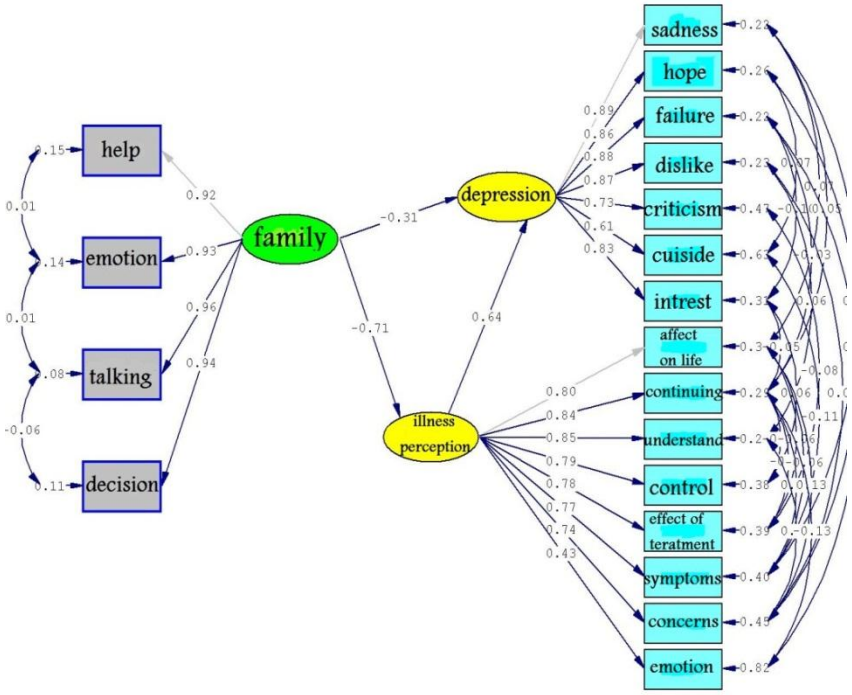

Figure 4. The Structural relationship model of relation between family support and depression directly and by illness perception as a mediator

DISCUSSION

Hence the present study was to evaluate the role of illness perception and social support in predicting depression in patients with intestine cancer diagnosis, studying depression phenomena in such a disease is a new area of research.

In our study illness Perception directly and significantly predicted depression in cancer patients. Some researchers have the same finding. Illness Perception is an important variable and after the formation, affects the psychological well-being in cancer patients [39, 40]. The results of a study that was conducted on 142 patients in Tehran Cancer Institute showed that the prevalence of depression among patients who were not informed of their disease was significantly lower than patients who were aware of the disease [23]. After diagnosis of illness, persons try to diagnose understand about it. How to deal with the illness in a patient takes shape based on the perceived concept and the meaning of illness in their mind. In our country the relationship between illness perception and Irritable Bowel Syndrome [24] and Coronary heart disease [25] has been approved.

Also social support directly and significantly predicted depression in cancer patients. Studies have reported social support oriented intervention in compare of cognitive behaviour training even is faster and more effective [41]. In our study factor of family support was found as the most important source of social support in patients with intestinal cancer. Results revealed that more perceived social support was associated with decreased depression and perception of illness severity. This finding was similar to previous studies about the effect of family oriented intervention in improving the Psychological well-being and quality of life in cancer patients [27], the importance of perceived social support from family [26], and improvements in managing symptoms, patients' perceived health, better function, and lower disease severity [29]. Family support and family-focused interventions either can improve the quality of life in patients or in their family. As there is some plans for the use of family-centred approaches to care of patients with advanced cancer[27], Supportive environment in groups make social support. Many patients have said they are willing to repeat the experience of participating in such therapeutic sessions and recommend others to participate in these sessions [28]. This finding show that all components of illness Perception such as some information about the disease, symptoms, emotional reactions and treatment make a real Perception of illness and this Variable after formation, effects on depression.

The present study examined the illness Perception as a mediator in the relationship between social support and depression and there were some significant association. Perceived social support from family had predicted a significant portion of the variance of depression by mediating of illness perception. This finding is consistent with the broader social support literature. cognitive components have been suggested as mechanisms linking relationships between social support to health problems[29] Other studies showed effects of social support; lower disease severity, managing symptoms, better function, and lower disease severity, controllability and consequences of disease[30]. It effects on perception of disease so that educational programs has effect in reducing of depression in cancer patients [24]. Family members bolster or undermine patients' self-efficacy for managing symptoms and engagement in healthy behaviors. They pressured them to be more active and provided autonomy support for their physical activity [29]. They respond more positive to nonverbal pain expression, improvements in patients' perceived health, better function, and lower disease severity [30]. Therefore social support may improve depression through impact on illness perception. Perceived social support have been boosted overall on coping skills, attitudes, perception of support, quality of life and decreasing negative effects of illness[37,42]. And helping patients overcome obstacles to adoptive coping and symptom management, symptom control [27].

Conclusion

In this study the role of two variables determined in predicting depression in patients with intestine cancer diagnosis. Social support and illness perception predict great amount of depression variance. The results of the present study suggest that illness Perception and social support especially from family have an important role on Psychological well-being in cancer patients and Therefore in treatment. Based on this study, is an important mediator variable between social support and depression and It is suggested to perform future interventions to improve this cognitive variable. Also social support it is necessary that social protection be considered as an important variable in treatment of intestinal cancer.

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REFERENCES

1. Polsky D, Doshi JA, Marcus S, Oslin D, Rothbard A, Thomas N, Thompson CL. Long-term risk for depressive symptoms after a medical diagnosis. Arch Intern Med. 2005;165(11):1260-66.
2. Hyunsoon C, Angela B, Mariotto AB, Schwartz LM, Luo j, Woloshin S. When Do Changes in Cancer Survival Mean Progress? The Insight From Population Incidence and Mortality. J Natl Cancer Inst Monogr. 2014; 49: 187-197.
3. Eric J. Feuer EJ, Rabin BA, Zou Z, Wang Z, Xiong X, Ellis JL, Steiner JF, Cynkin L, Nekhlyudov L, Bayliss E, Hankey BF. The Surveillance, Epidemiology, and End Results Cancer Survival Calculator SEER CSC: Validation in a Managed Care Setting. J Natl Cancer Inst Monogr. 2014; 49: 265-274.
4. Hart SL, Hoyt MA, Diefenbach M, Anderson DR, Kilbourn KM, Craft LL, Steel JL, Cuijpers P Mohr DC, Berendsen M, Bonnie S Stanton AL. Meta-Analysis of Efficacy of Interventions for Elevated Depressive Symptoms in Adults Diagnosed With Cancer. J Natl Cancer Inst. 2012 ; 104(13): 990–1004.
5. Mystakidou K, Tsilika E, Parpa E, Katsouda E, Galanos A, Vlahos L. Assessment of anxiety and depression in advanced cancer patients and their relationship with quality of life. Qual Life Res. 2005; 14(18);25-33.
6. Jadoon NA, Munir W, Shahzad M, Choudhry ZS. Assessment of depression and anxiety in adult cancer outpatients: a cross-sectional study. BMC Cancer. 2010; 29(10):594.
7. Grassi L, Rosti G: Psychiatric and psychosocial concomitants of abnormal illness behaviour in patients with cancer. Psychother Psychosom. 1999; 65:246-252.
8. Prieto JM, Atala J, Blanch J, Carreras E, Rovira M, Cirera E, Espinal A, Gasto C: Role of Depression as a predictor of mortality among cancer patients after stem-cell transplantation. J Clin Oncol .2005; 23:6063-71.
9. Ell K, Sanchez K, Vourlekis B, Lee PJ, Dwight-Johnson M, Lagomasino I, Muderspach L, Russell C. Depression, correlates of depression, and receipt of depression care among low-income women with breast or gynecologic cancer. J Clin Oncol. 2005;23(13):3052-60.
10. Mitchell AJ, Ferguson DW, Gill J, Paul J, Symonds P. Depression and anxiety in long-term cancer survivors compared with spouses and healthy controls: a systematic review and meta-analysis. The Lancet Oncol. 2013;14(8): 721–32.
11. Adler NE, Page AE. Cancer Care for the Whole Patient: Meeting Psychosocial Health Needs. 1th ed. National Academies Press (US); 2008.
12. Dalton SO, Laursen TM, Ross L, Mortensen PB, Johansen C. Risk for Hospitalization With Depression After a Cancer Diagnosis: A Nationwide, Population-Based Study of Cancer Patients in Denmark From 1973 to 2003. American Society of Clin Oncol. 2009;27(9):1440-5.
13. Agboola SO, Ju W, Elfiky A, Kvedar GC, Jethwani K. The Effect of Technology-Based Interventions on Pain, Depression, and Quality of Life in Patients With Cancer: A Systematic Review of Randomized Controlled Trials. J of Med Internet Res. 2015; 17(3):65.
14. Lin C, Burri A, Pakpour A. Premature Ejaculation and Erectile Dysfunction in Iranian Prostate Cancer Patients. Asian Pacific J Cancer Prev. 2016; 17(4): 1961-6.
15. Eghbali H. The Evaluation of structural model to explain depression after intestinal cancer. PhD thesis. Islamic Azad University of Karaj, Department of Health Psychology; 2015.
16. Badger TA, Braden CJ, Mishel MH, Longman A. Depression burden, psychological adjustment, and quality of life in women with breast cancer: patterns over time. Res Nurs Health. 2004; 27(1):19-28.
17. Rimer B, Keintz MK, Glassman B. Cancer patient education: reality and potential. Prev Med. 1985 Nov;14(6):801-18.
18. Fawzy FI, Canada AL, Fawzy NW: Malignant melanoma: Effects of a brief, structured psychiatric intervention on survival and recurrence at 10-year follow-up. Arch Gen Psychiatry. 2003 Jan;60(1):100-3.
19. Wallace KG. Analysis of recent literature concerning relaxation and imagery interventions for cancer pain. Cancer Nurs. 1997 Apr;20(2):79-87.
20. Steel JL, Geller DA, Gamblin TC, Olek MC, Carr BI. Depression, immunity, and survival in patients with hepatobiliary carcinoma. J Clin Oncol. 2007 Jun; 25(17): 397-405.
21. Leventhal H, Nerenz DR, Steele DJ. Illness representation and coping with health threats. In: Baum A, Taylor SE, Singer JE, editors. Social psychological aspects of health. Volume 4 of Handbook of psychology and health. 2nd ed. New Jersey: Erlbaum Associates;1984.p. 219-52.
22. Wells ME, McQuellon RP, Hinkle JS, Cruz JM. Reducing anxiety in newly diagnosed cancer patients: a pilot program. Cancer Pract. 1995 Mar-Apr; 3(2):100–104.
23. Tavoli A, Mohagheghi MA, Montazeri A, Roshan R, Tavoli Z, Omidvari S: Anxiety and depression in patients with gastrointestinal

cancer: does knowledge of cancer diagnosis matter? BMC Gastroenterol. 2007 Jul; 14(7):28.
24. Afshar H, Bagherian R, Foroozandeh N, Khorramian N, Daghaghzadeh H, Maracy MR, Adib P. The relationship between the perception of disease severity in patients with irritable bowel syndrome. J Isfahan Med School. 2011; 29(137):526-536.
25. Monirpoor N, Besharat M A, Khoosfi H, & Karimi Y. The role of illness perception on explaining post-CHD depression in patients under CABG and PCI. Social and Behav Sci. 2012;32: 74-78.
26. Yang YL, Sui GY, Liu GC, Huang DS, Wang SM, & Wang L. The effects of psychological interventions on depression and anxiety among Chinese adults with cancer: a meta-analysis of randomized controlled studies. BMC Cancer, 2014 Dec; 15(14):956.
27. Badr H. Psychosocial Interventions for Patients with Advanced Cancer and their Families. Amer J Lifestyle Medicine.2014 April; 4(10):1005-11.
28. Begbie SD, Kerestes ZL, Bell DR. Patterns of alternative medicine use by cancer patients. Med J Aust. 1996 Nov;165(10):545-8.
29. Martire LM, Lustig AP, Schulz R, Miller GE, Helgeson VS. Is it beneficial to involve a family member? A meta-analysis of psychosocial interventions for chronic illness.Health Psychol. 2004 Nov;23(6):599-611.
30. Martire LM, Schulz R, Reynolds CF, Karp JF, Gildengers AG, Whyte E M. Treatment of late-life depression alleviates caregiver burden. Journal of the American Geriatrics Society.2010; 58(1): 23-29.
31. Kelsen DP, Portenoy RK, Thaler HT, Niedzwiecki D, Passik SD, Tao Y, Banks W, Brennan MF, Foley KM. Pain and depression in patients with newly diagnosed pancreas cancer.J Clin Oncol. 1995; 13(3):748-55.
32. Wilhelm K, Kotze B, Waterhouse M, Pavlovic DH, & Parker G. Screening of Depression in Medically ill: A Comparison of Self-Report Measures, Clinician Judgment, and DSM-IV Diagnosis. Psychosomatics: J Cons Liaison Psych. 2004;45(6):461-9.
33. Montazeri A, Vahdaninia M, Ebrahimi M, Jarvandi S. The Hospital Anxiety and Depression Scale (HADS): translation and validation study of the Iranian version. Health Qual Life Outcomes. 2003 Apr; 28(1):14.
34. Edwards L M. Measuring Perceived Social Support in Mexican American Youth: Psychometric Properties of the Multidimensional Scale of Perceived Social Support Hispanic, Journal of Behavioral Sciences. 2004; 26 (2): 187-94.
35. Bruwer B, Emsley R, Kidd M, Lochner C, Seedat S. Psychometric properties of the Multidimensional Scale of Perceived Social Support in youth. Comprehensive Psych. 2008; 49: 195–201.
36. Salimi AR, Joukar B, Nikpour R. internet and communication: perceived social support and loneliness as antecedent variable. Psychological studies. 2009; 5(3): 81-102.
37. Broadbent E, Petrie KJ, Main J, Weinman J. The Brief Illness Perception Questionnaire . J Psychosom Res. 2006; 60(6): 631-7.
38. Bagherian R, BahramiEhsan H, Saneei H. Relationship Between History Of myocardial Infraction and Cognitive Representaion of myocardial Infraction. J Res in Psychol Health. 2008; 2(2): 29-39.
39. Husain MO, Dearman SP, Imran IB, Rizvi N, & Waquas WaheedmW. The relationship between anxiety, depression and illness perception in tberculosis patients in Pakistan. Clin Pract Epidemiol Ment Health. 2008 Feb; 26(4):4.
40. Lung S, Steinbeck K, Morise S, Kohn M, Twons S. & Bennet D. Chronic illness perception in adolescence: Implications for the doctor-patient relationship. J Paediatrics and Child Health.1997; 33(2): 107–112.
41. Newell SA, Sanson-Fisher RW, Savolainen NJ Systematic review of psychological therapies for cancer patients: overview and recommendations for the future.J Natl Cancer Inst. 2002 Apr 17;94(8):558-84.
42. Richardson MA, Post-White J, Grimm EA, Moye LA, Singletary SE, Justice B. Coping, life attitudes, and immune responses to imagery and group support after breast cancer treatment. Altern Ther Health Med. 1997 Sep;3(5):62-70.