International Journal of Community Medicine and Public Health
Mithrason AT et al. Int J Community Med Public Health. 2017 Nov;4(11):4145-4150
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20174818

Original Research Article

Physical problems and needs of patients in palliative care center

Arun T. Mithrason[1]*, Gomathy Parasuraman[2]

Department of Community Medicine, [1]DM WIMS, Naseera Nagar, Wayanad, Kerala, [2]Saveetha Medical College, Thandalam, Kanchipuram, Tamil Nadu, India

Received: 25 August 2017
Revised: 19 September 2017
Accepted: 20 September 2017

***Correspondence:**
Dr. Arun T. Mithrason,
E-mail: arunmithrason@gmail.com

ABSTRACT

Background: Palliative care provides care in the relief of pain and other distressing symptoms by early identification and impeccable assessment. The problems of the people suffering from incurable diseases are multiple and multi-dimensional. Also, suffering caused by the same problem differs among individuals. To provide effective and quality palliative care services, the health care team needs quality information about what the patients really need and what are their priority problems from their own point of view. This study aims to find out the problems and needs of palliative care patients.
Methods: A cross sectional study was done in 'Jeevodaya Hospice care Centre', located in North Chennai in Mathoor, Manali. 60 patients were included in the study. Questionnaire on problems and needs in palliative care was used to cover the physical problems. Data was analyzed using SPSS version 17.
Results: The most common physical problems perceived by the study subjects were pain (100%), insomnia (93.3%), fatigue (88.3%) and loss of appetite (83.3%).
Conclusions: This study indicates a need for more professional attention for palliative care patients. This does not imply dissatisfaction with present care. In fact, it is a desire for future care and room for improvement, not a judgment of the quality of care in the present or past.

Keywords: Palliative care, Physical problems, Pain, Insomnia, Fatigue, Loss of appetite

INTRODUCTION

Over the last few decades, health care services have advanced both scientifically and technically thus benefitting many patients with severe and acute diseases. But there are certain diseases which are challenging to mankind. Some of them are the diseases of the nervous system, auto immune disorders, blood dyscrasia, HIV/AIDS, cancers, etc. The problems of the people suffering from incurable diseases are multiple and multi-dimensional. Also, suffering caused by the same problem differs among individuals. Therefore such patient's require expert trained support that is holistic in scope. Patients' families also undergo a great deal of trauma while caring for the patient. Therefore, palliative care provides support to patients' families also.

As defined by WHO, palliative care aims to improve the quality of life of patients and their families facing any life-threatening illness. Palliative care provides care for the relief of pain and other distressing symptoms by early identification and impeccable assessment. It regards dying as a normal process. It neither hastens nor postpones death, instead, it offers a support system to help patients live as actively as possible until they die. This holistic approach also addresses the physical, psychological and spiritual aspects of patient care and

supports the family as well as care givers during the illness and into bereavement.[1,2]

In the mid-1980s, palliative care was introduced to India. Since then with the efforts of committed individuals, including Indian health professionals as well as volunteers, in collaboration with international organizations and individuals from other countries, hospice and palliative care have developed in India.[3] Around 138 organizations are identified which are currently providing hospice and palliative care services, in around 16 states or union territories. These services are usually concentrated in large cities and regional cancer centers, with the exception of Kerala, where services are more widespread.[4]

To provide effective and quality palliative care services, the health care team (provider's) needs quality information about what the patients really need and what are the priority problems from their own point of view. Hence, a health system research is needed. Health system research provides the quality of information on which health care providers base their decisions.

Hence this study aims to find out the problems and needs of palliative care patients in palliative care centers in Chennai. This study is a health system research which will give quality information to the health providers so that the health care rendered to the terminally ill patients can be better modified for the good of the suffering patients.

METHODS

A cross sectional study was done in 'Jeevodaya Hospice care Centre', located in North Chennai in Mathoor, Manali, India. Study was conducted from May to September 2010 (5 months). 60 patients who were not very ill, able to talk comfortably and who had good mental state as per the mini mental state examination were included in the study. Questionnaire on problems and needs in palliative care was used. After extensive textbook and literature search in Palliative care, the common physical problems and needs in palliative care were identified. According to the previous studies on problems and needs of patients in palliative care the PNPC (problems and needs in palliative care) questionnaire developed by Bart H.P. Osse was a valuable tool to develop the questionnaires.

This questionnaire consists of twenty two elements which are pertaining to physical problems among palliative care patients. Also, patients back-ground information was collected which includes information on the socio-economic and socio-demographic profiles like name, sex, address, religion, number of family members, educational status, occupation, type of family, family income and marital status.

The questionnaire was administered to the study subjects, after getting informed consent, according to the time comfortable for the individual patients. Therefore, interviewing per patient took lots of time. Enough time breaks were given according to patients requests. Time taken to answer the background information, socio-economic and socio-demographic data along with general and clinical examination was approximately 45 minutes. The time taken to answer the problems and needs questionnaire was approximately 4 hours. The interview questions were not asked continuously but in three divided time schedules comfortable for the patients and according to the institution timings. Whenever a patient felt tired and not interested to answer, the interview was withheld and resumed after sometime.

The study was approved by institutional ethics committee. Data analysis was done in SPSS 17. Individual problems asked through questionnaire are expressed in proportions and percentage.

RESULTS

70% of the patients in this study were in the age-group of 40-59 years. Among the study subjects the males and females were equally distributed. The age and sex distribution of the patients are shown in Table 1.

Table 1: Age and sex distribution of palliative care patients.

Age group (yrs)	Males (%)	Females (%)	Total (n=60) (%)
<40	3 (5)	5 (8.3)	8 (13.3)
40-59	21 (35)	21 (35)	42 (70)
>60	6 (10)	4 (6.7)	10 (16.7)

Of 60 subjects in the study, 14 (23.3%) patients had breast cancer, 11 (18.3%) patients had cancer of oral cavity and 11 (18.3%) patients had cancer stomach. Other patients included carcinoma of cervix, lung, pancreas, rectum, thyroid, liver, colon, oesophagus, prostate, ovary and osteosarcoma (Figure 1).

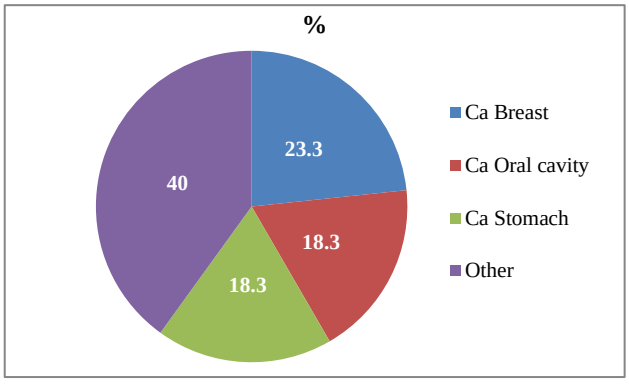

Figure 1: Disease profile of palliative care patients.

Physical problems perceived by the study subjects are given in Table 2. Pain was the most common and severe neurological problem perceived by palliative care patients. 83.3% of subjects in the study complained of lack of appetite as the most common gastrointestinal problem. 50% of subjects complained of shortness of breath as the most common respiratory problem. Among the constitutional problems insomnia (perceived by 93.3%) was the main complain followed by fatigue (perceived by 88.3%).

Table 2: Physical problems and their severity among palliative care patients.

Physical problems	Perceived (%)	Severely perceived (%)
Gastrointestinal problems		
Lack of appetite	83.3	26
Constipation	75	22.2
Change of taste	71.7	11.6
Vomiting	58.3	25.7
Mouth Problems	43.3	52
Swallowing problems.	33.3	60
Diarrhea	26.7	6.3
Respiratory problems		
Shortness of breath	50	23.3
Cough	38.3	13
Neurological problems		
Pain	100	56.7
Numbness	51.7	19.4
Incontinence	16.7	50
Constitutional problems		
Insomnia	93.3	44.6
Fatigue	88.3	35.8
Lack of concentration	70	14.3
Non-healing ulcer	38.3	69.6
Edema	38.3	17.4
Hot flushes	30	0
Loss of hair	18.3	27.3
Other problems		
Itching	36.7	4.5
Impaired vision	13.3	0
Impaired hearing	13.3	0

DISCUSSION

Patients with life limiting conditions often have multiple symptoms. The most common physical problems perceived by the study subjects were pain (100%), insomnia (93.3%), fatigue (88.3%) and loss of appetite (83.3%). Pain is the most common symptom in patients suffering from malignant or non-malignant chronic disease which makes their life unenjoyable.[5] In our study, all the 60 subjects complained of pain and 56.7% perceived it as a severe problem. There are many studies that showed pain as the most common problem among palliative care patients.

Iyer et al found that more than 90% of the patients expressed pain in their study.[6] 87.5% of cancer patients reported pain in another study by Nilmana et al.[7] Pain results either from illness and its treatment or co-occurring illnesses. Increase in the intensity of pain is usually seen in the last four months before death and it is linked to nociceptive or neuropathic mechanisms or both pain types.[8]

Generally, pain is recognized as a multidimensional experience with sensory, affective, cognitive, and behavioral dimensions. As a sensory experience, pain is moderate to severe in intensity among patients receiving palliative care or those at the end of life.[9-14] Pain is commonly reported as possessing complex qualities and variable in its pattern often in more than one location.[15] It is also associated with an affective dimension that includes distress and suffering.[11,15,16] AHRQ's 2002 evidence review documented the contribution of cancer-related pain to fatigue, impaired function, and a range of other psychosocial dimensions of health.[17]

Pain imposes limitations on lifestyle, which is influenced by physical, emotional, social and spiritual factors. Often it is not fully eliminated despite the administration of analgesics and other therapies.[18] Palliative care consult service is associated with greater attention to pain and symptoms for hospitalized patients than those who do not receive palliative care.[19]

Insomnia was the second most common physical problem among palliative care patients. 93% complained of insomnia and 44.6% perceived it as a severe problem in our study. In a study done by Chiu et al, the prevalence of insomnia was found to be 44.8%.[20] In another study done by Wang et al, the prevalence of sleep disturbance among cancer patients was 68.27%.[21] Declan Walsh et al in their study found the prevalence of insomnia among cancer patients as 49%.[22] Some studies have found the prevalence of insomnia in cancer patients to be as low as 16%.[23] This variation may be because insomnia is viewed as a normal reaction to the cancer diagnosis and treatment, insomnia may be viewed as a lesser priority than the cancer treatment, and practitioners may lack the knowledge to diagnose and treat this problem.[22] High prevalence in our study, is because we have recorded all sleeping problems. The major cause of sleep disturbance in palliative care patients was due to uncontrolled pain, leg cramps, worry and guilt, idiopathic.

Fatigue was the third most common physical problem among palliative care patients. The European Association of Palliative Care (EAPC) defines fatigue as a subjective feeling of tiredness, weakness or lack of energy.[24] The prevalence of fatigue usually ranges from 48-78% in palliative care patients.[25] In our study, 88.3% subjects complained of getting fatigue soon. Out of which, 35.8% perceived it as a severe problem. Fatigue can be because of cancer itself or its treatment. Its onset may precede the diagnosis of cancer or it may occur at any stage in the

course of the illness or its treatment with chemotherapy, radiotherapy, or surgery and may be even present for prolonged periods of time following completing the treatment. It's characterized by easy tiring and reduced performance, generalized weakness resulting in reduced ability to initiate movement, mental fatigue which is characterized by poor concentration, impaired memory, and mood changes.[26]

In patients with advanced cancer, it usually coexists with a number of other symptoms that may include pain, anorexia, nausea, vomiting, dyspnea, difficulty sleeping, anxiety, or depression.[27] Of these, malnutrition/ cachexia is a major contributor to fatigue. The loss of muscle mass resulting from progressive cachexia provides a reason for profound weakness and fatigue. Even in the presence of normal protein and caloric intake and normal body weight, structural and biochemical muscle abnormalities are found in cancer patients.[28] Vogelsang et al in their study reported the prevalence of fatigue in their subjects to be 60 to 90 percent.[29] Chiu et al in their study reported the prevalence of fatigue and weakness to be 82.3%.[20] Wang et al in their study reported the prevalence of fatigue to be 88.6%.[21] Declan Walsh et al in their study reported the prevalence of easy fatigue to be 69% among palliative care patients.[22] Lack of appetite was the most common gastrointestinal symptom among palliative care patients. In our study, 83.3% of the patients had lack of appetite and of that 26% perceived it as a severe problem. In a study done by Walsh et al, among 1000 cancer patients, one-third of the patients had severe loss of appetite.[22] In another study done by Hui et al, 74-83% of patients in palliative care units had anorexia.[30] Anorexia may be because of the direct effect on oral intake due to dysphagia, early satiety, xerostomia, nausea/ vomiting, taste disturbance, mucositis, constipation, bowel obstruction, dental issue, etc., or, because of indirect effect on oral intake due to delirium, drowsiness, dyspnea, depression, etc. Inflammatory response and neurohormonal changes may also cause loss of appetite. The reduced oral intake eventually leads to weight loss and decreased quality of life.[25]

It was also observed in our study that occurrence of anorexia was equal in both cancers of gastrointestinal tract as well as other cancers. Stomach cancer patients who had undergone gastrectomy complained of loss of appetite, as well as, patients with hepatocellular carcinoma, liver metastasis, cirrhosis, etc. complained of anorexia. Treatment for loss of appetite improved patients morale, reduced family anxiety, preserved optimal nutrition and delayed the onset of cachexia**.**

Cachexia is often seen in end-stage cancer, and in that context is called "cancer cachexia".[31] Refractory cachexia is seen in the last days of life due to inflammatory response, hyper metabolism and overall catabolic state with muscle loss.[30] Cancer related cachexia is seen in 50-80% of cancer patients with advanced and metastatic disease.[32] Cachexia weakens the body and promotes further spread of cancer.[32]

Other most commonly complained physical problem by palliative care patients are: constipation (75%), change of taste (71.7%), lack of concentration (70%) and vomiting (58.3%). Constipation is very common in palliative care patients and affects more than 50% of patients. Constipation is defined as infrequent or difficult defecation with reduced number of bowel movements, which may or may not be abnormally hard with increased difficulty or discomfort.[33] It is the second most common gastrointestinal symptom perceived by subjects in our study and 22.2% perceived this problem as severe. Constipation can be drug-induced due to opioids, antibiotics, antidepressants, antacids, neuroleptics, etc the patient is on, or, can be because of organic causes like tumor, diverticulitis, neurological disorder, endocrine disorder, metabolic cause, etc., or because of functional causes like prolonged colon passage, impaired defecation, low fiber diet, insufficient intake of fluids, immobility, etc.[34]

Studies show that up to 90% of patients treated with opioids complain of constipation.[35] Clement et al in their study found, morphine induced constipation as the major cause for constipation among cancer patients.[36] Untreated constipation can lead to abdominal pain and distension, nausea/ vomiting, anorexia, mental status changes, etc.

Change of taste was the third common gastrointestinal problem among palliative care patients in our study. Reported by 71.1% of patients and 11.6% perceived this as a severe problem. According to Twycross et al, 25-50% of cancer patients have diminished taste sensitivity.[37] It can be due to lack of appetite, medications, etc. Taste changes can lead to food aversions (or dislikes), loss of appetite, and weight loss.

Lack of concentration was complained by 70% of study subjects. It may be due to depression or medications like steroids, etc. Vomiting was the fourth common (58.3%) gastrointestinal problem among palliative care patients and of them which 25.7% perceived this problem as severe. Pereira et al in their study showed that nausea and vomiting are common symptoms in patients with advanced cancer, occurring in approximately 21% to 68% of these patients.[38] In a study done by Ground et al, the prevalence of nausea is 20-30% in all patients with advanced cancer, and this rises to 70% in the last week of life and 20% of all cancer patients develop vomiting.[39] In a study done by Fainsinger et al, nausea and vomiting was highest in advanced gynaecological cancers (42%) and advanced stomach cancer (36%).[40] It was observed that chronic nausea in the advanced cancer setting was often multifactorial. Medications that were frequently prescribed in this centre, such as opioids, nonsteroidal anti-inflammatory drugs resulted in nausea and vomiting.

Nausea and vomiting are demeaning, reduce patient's quality of life, and affect compliance with therapy. Nausea occurs both at early stage and in the advanced stage of cancer disease. Nausea and vomiting occur most frequently in woman, probably due to cancer type and increased sensitivity to drugs.[37] Nausea and vomiting commonly cause misery for people with advanced cancer 40 to 70 per cent patients and despite major advances anti-emetic drug development in the last two decades the incidence and severity of symptoms is largely unchanged.[41] In one third of patients increased use of drugs like morphine induce nausea by chemical action at chemoreceptor trigger zone.[42]

CONCLUSION

Our study showed various physical problem perceived by palliative care patients which should not be left unmet. Though this study indicates a need for more professional attention, this does not imply dissatisfaction with present care. In fact, it is a desire for future care and room for improvement, not a judgment of the quality of care in the present or past.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Geneva: World Health Organization. "WHO Definition of Palliative Care" Available from: http://www.who.int/cancer/palliative/definition/en. Accessed on 23 July 2017.
2. Jaarsma T, Beattie JM, Ryder M, Rutten FH, McDonagh T, Mohacsi P, et al. Palliative care in heart failure: a position statement from the palliative care workshop of the Heart Failure Association of the European Society of Cardiology. Eur J Heart Failure. 2009;11(5):433-43.
3. McDermott E, Selman L, Wright M, Clark D. Hospice and palliative care development in India: a multimethod review of services and experiences. J Pain Symptom Management. 2008;35(6):583-93.
4. Wilkie DJ, Ezenwa MO. Pain and symptom management in palliative care and at end of life. Nursing outlook. 2012;60(6):357-64.
5. Connor SR, Bermedo MC, editors. Global atlas of palliative care at the end of life. Worldwide Palliative Care Alliance; 2014.
6. Iyer S, Taylor-Stokes G, Roughley A. Symptom burden and quality of life in advanced non-small cell lung cancer patients in France and Germany. Lung Cancer. 2013;81(2):288–93.
7. Nilmanat K, Promnoi C, Phungrassami T, Chailungka P, Tulathamkit K, Noo-urai P. Symptom management and its barriers among patients with terminal advanced cancer in Thailand. BMJ Supportive Palliative Care. 2012;2(Suppl 1):49.
8. Smith AK, Cenzer IS, Knight SJ, Puntillo KA, Widera E, Williams BA, et al. The epidemiology of pain during the last 2 years of life. Annals Internal Med. 2010;153(9):563-9.
9. Brechtl JR, Murshed S, Homel P, Bookbinder M. Monitoring symptoms in patients with advanced illness in long-term care: a pilot study. Journal of pain and symptom management. 2006;32(2):168-74.
10. Fadul NA, Osta BE, Dalal S, Poulter VA, Bruera E. Comparison of symptom burden among patients referred to palliative care with hematologic malignancies versus those with solid tumors. J Palliative Med. 2008;11(3):422-7.
11. Goebel JR, Doering LV, Shugarman LR, Asch SM, Sherbourne CD, Lanto AB, et al. Heart failure: the hidden problem of pain. J Pain Symptom Management. 2009;38(5):698-707.
12. Goy ER, Carter J, Ganzini L. Neurologic disease at the end of life: caregiver descriptions of Parkinson disease and amyotrophic lateral sclerosis. Journal of palliative medicine. 2008;11(4):548-54.
13. Kutner J, Smith M, Mellis K, Felton S, Yamashita T, Corbin L. Methodological challenges in conducting a multi-site randomized clinical trial of massage therapy in hospice. J Palliative Med. 2010;13(6):739-44.
14. Strassels SA, Blough DK, Veenstra DL, Hazlet TK, Sullivan SD. Clinical and demographic characteristics help explain variations in pain at the end of life. J Pain Symptom Management. 2008;35(1):10-9.
15. Fischer DJ, Villines D, Kim YO, Epstein JB, Wilkie DJ. Anxiety, depression, and pain: differences by primary cancer. Supportive Care in Cancer. 2010;18(7):801-10.
16. McMillan SC, Rivera HR Jr. The relationship between depressive symptoms and symptom distress in patients with cancer newly admitted to hospice home care. J Hospice Palliative Nursing. 2009;11(1):41-51.
17. Carr D, Goudas L, Lawrence D, Pirl W, Lau J, DeVine D, et al. Management of cancer symptoms: pain, depression, and fatigue. Evidence report/technology assessment. 2002;61:368-74.
18. Page AE, Adler NE, editors. Cancer care for the whole patient: Meeting psychosocial health needs. National Academies Press; 2008.
19. Pekmezaris R, Cooper L, Efferen L, Mastrangelo A, Silver A, Eichorn A, et al. Transforming the mortality review conference to assess palliative care in the acute care setting: a feasibility study. Palliative Supportive Care. 2010;8(4):421-6.
20. Chiu TY, Hu WY, Chen CY. Prevalence and severity of symptoms in terminal cancer patients: a study in Taiwan. Supportive Care Cancer. 2000;8(4):311-3.
21. Wang Y, Shen J, Xu Y. Symptoms and quality of life of advanced cancer patients at home: a cross-sectional study in Shanghai, China. Supportive Care in Cancer. 2011;19(6):789-97.

22. Walsh D, Donnelly S, Rybicki L. The symptoms of advanced cancer: relationship to age, gender, and performance status in 1,000 patients. Supportive Care Cancer. 2000;8(3):175-9.
23. Savard J, Morin CM. Insomnia in the context of cancer: a review of a neglected problem. J Clin Oncol. 2001;19(3):895-908.
24. Radbruch L, Strasser F, Elsner F, Gonçalves JF, Løge J, Kaasa S. Research Steering Committee of the European Association for Palliative Care (EAPC), et al. Fatigue in palliative care patients—an EAPC approach. Palliative Med. 2008;1:13-32.
25. Smets EM, Garssen B, Schuster-Uitterhoeve AL, De Haes JC. Fatigue in cancer patients. Br J Cancer. 1993;68(2):220.
26. Woof R. Asthenia cachexia and anorexia. In: Faull C, editor. Handbook of Palliative care. Oxford: Blackwell Sci; 1998: 272–283.
27. Berglund G, Bolund C, Fornander T, Rutqvist LE, Sjödén PO. Late effects of adjuvant chemotherapy and postoperative radiotherapy on quality of life among breast cancer patients. Eur J Cancer Clin Oncol. 1991;27(9):1075-81.
28. Beck SA, Mulligan HD, Tisdale MJ. Lipolytic factors associated with murine and human cancer cachexia. J National Cancer Institute. 1990;82(24):1922-6.
29. Vogelzang NJ, Breitbart W, Cella D, Curt GA, Groopman JE, Horning SJ, et al. Patient, caregiver, and oncologist perceptions of cancer-related fatigue: results of a tripart assessment survey. The Fatigue Coalition. Seminars Hematol 1997;34(3):4-12.
30. Hui D, dos Santos R, Chisholm GB, Bruera E. Symptom expression in the last seven days of life among cancer patients admitted to acute palliative care units. J Pain Symptom Management. 2015;50(4):488-94.
31. Davis MP, Dickerson ED. Cachexia and anorexia: cancer's covert killer. Supportive care in cancer. 2000;8(3):180-7.
32. Consul N, Guo X, Coker C, Lopez-Pintado S, Hibshoosh H, Zhao B. Monitoring metastasis and cachexia in a patient with breast cancer: a case study. Clin Med Insights Oncol. 2016;10:83.
33. Brurea E, Fadul N. Constipation and diarrhea. In: Bruera E, Higginson I, Von Gunten CF, Morita T, editors. Textbook of palliative medicine and supportive care. CRC Press; 2015.
34. Clemens KE, Klaschik E. Managing opioid-induced constipation in advanced illness: focus on methylnaltrexone bromide. Therap Clin Risk Management. 2010;6:77.
35. Rhondali W, Nguyen L, Palmer L, Kang DH, Hui D, Bruera E. Self-reported constipation in patients with advanced cancer: a preliminary report. J Pain Symptom Management. 2013;45(1):23-32.
36. Clemens KE, Klaschik E. Management of constipation in palliative care patients. Current Opinion in Supportive and Palliative Care. 2008;2(1):22-7.
37. Twycross R, Back I. Nausea and vomiting in advanced cancer. Eur J Palliative Care. 1998;5:39-45.
38. Pereira J, Bruera E: Chronic nausea. In: Bruera E, Higginson I, eds.: Cachexia-Anorexia in Cancer Patients. New York, NY: Oxford University Press; 1996: 23-37
39. Grond S, Zech D, Diefenbach C, Bischoff A. Prevalence and pattern of symptoms in patients with cancer pain: a prospective evaluation of 1635 cancer patients referred to a pain clinic. J Pain Symptom Management. 1994;9(6):372-82.
40. Fainsinger R, Miller MJ, Bruera E, Hanson J, MacEachern T. Symptom control during the last week of life on a palliative care unit. J Palliative Care. 1991;7(1):5-11.
41. Dunlop GM. A study of the relative frequency and importance of gastrointestinal symptoms, and weakness in patients with far advanced cancer: student paper. Palliative medicine. 1990;4(1):37-43.
42. Campora E, Merlini L, Pace M, Bruzzone M, Luzzani M, Gottlieb A, Rosso R. The incidence of narcotic-induced emesis. J Pain Symptom Management. 1991;6(7):428-30.

Cite this article as: Mithrason AT, Parasuraman G. Physical problems and needs of patients in palliative care center. Int J Community Med Public Health 2017;4:4145-50.