Int J Clin Exp Med 2019;12(6):7450-7457
www.ijcem.com /ISSN:1940-5901/IJCEM0092573

Original Article

Comfortable nursing mitigates postoperative pain and improves quality of life for patients with advanced cancer

Zhang Zhang, Xiujuan Zeng, Xuxia Huang, Qihua Kuang

Medical Oncology, Sun Yat-sen University Cancer Certer, Guangzhou, Guangdong, China

Received February 14, 2019; Accepted March 12, 2019; Epub June 15, 2019; Published June 30, 2019

Abstract: Objective: The aim of the current study was to explore the efficacy of comfortable nursing in improving postoperative pain and quality of life for patients with advanced cancer. Methods: Prospective analysis was performed on the medical records of 245 patients with advanced cancer. Of these, 149 patients receiving comfortable nursing care were enrolled as the research group. The remaining 96 patients receiving routine nursing care were enrolled as the control group. Participant clinical data and self-rating depression scale (SDS) and self-rating anxiety scale (SAS) scores, before and after nursing, were compared. Pain scores, nursing satisfaction, and quality of life (EORTC-QLQ-C30) scores were also compared before nursing (T1), at Day 7 (T2), at Day 14 (T3), and at Day 21 (T4). Results: After nursing, SDS and SAS scores of the research group were significantly lower than those of the control group ($P < 0.050$). Pain scores of patients in both groups at T2 were significantly lower than those at T1 ($P < 0.050$). Scores gradually decreased from T2 to T4 ($P < 0.050$). Patient nursing satisfaction in the research group was 92.62%, significantly higher than the rate of 68.75% in the control group ($P < 0.001$). Moreover, patient symptom-related scores in the research group were lower than those in the control group ($P < 0.001$). A similar pattern was also identified for function scores ($P < 0.001$). Quality of life scores in the research group were significantly better than those in the control group ($P < 0.001$). Conclusion: For patients with advanced cancer, comfortable nursing can mitigate pain, effectively, with significant improvements in emotions and quality of life. Therefore, comfortable nursing should be promoted in clinical practice.

Keywords: Comfortable nursing, cancer, pain, quality of life

Introduction

Regarding clinical treatment for cancer, surgical resection combined with chemotherapy or radiotherapy is currently the most popular method [1]. However, surgical trauma and side effects developing from treatment involve acute pain, continually aggravating as treatment continues [2]. Because of pain, patients often experience difficulties in performing normal activities, as well as with diet and sleep. They may also develop enormous psychological and mental stress, often contributing to dropping out of treatment [3]. Thus, intervention against postoperative pain is one of the key links in deciding prognosis. With continuous developments in research, more studies have proven that effective nursing care can alleviate pain experienced by patients [4-6]. The most representative method is comfortable nursing. As a standard, it is a specific and creative method that can pacify patients physiologically and psychologically [7]. In the current study, patients were provided comfortable nursing, showing great breakthroughs.

The current study retrospectively analyzed cancer patients receiving comfortable nursing care during treatment, aiming to determine the application value of comfortable nursing in cancer treatment, providing reference for clinical practice.

Materials and methods

General data

In this study, 245 patients with advanced cancer were prospectively analyzed. Of the 245

patients, 149 patients receiving comfortable nursing were enrolled in the research group, including 87 men and 62 women aged between 31 and 74 years (average age = 50.92±11.94 years). The remaining 96 patients receiving regular nursing care were enrolled in the control group, including 60 men and 36 women aged between 30 and 78 years (average age = 51.68±12.73 years).

Inclusion and exclusion criteria

Inclusion criteria: Patients with clinical symptoms conforming to the *Guidelines for Diagnosis of Cancer* (2016 Edition) [8]; Patients diagnosed through biopsies performed in the Pathological Department; Patients that received surgical resection along with chemotherapy or radiotherapy after diagnosis; Patients with perfect clinical data; Patients cooperating with the treatment arrangement of the medical staff; Patients aged between 32 and 78 years old.

Exclusion criteria: Patients with complicated cases caused by cerebrovascular or cardiovascular diseases; Patients with severe organ failure; Patients with mental disorders; Patients with physical disabilities; Patients tolerant to surgical resection; Patients with a history of radiotherapy or chemotherapy; Patients that were pregnant; Patients with immune-related infections; Patients that were transferred to other hospitals during treatment. This study was approved by the Ethics Committee of the Sun Yat-sen University Cancer Certer. All subjects provided written informed consent before enrollment.

Methods

Routine nursing care for patients in the control group involved the following: Education of cancer-related knowledge, basic life nursing, regular physical examinations for symptoms, analgesia for cancer pain, nursing care for treatment, and necessary psychological interventions.

In addition to regular nursing care adopted for patients in the control group, patients in the research group underwent the following nursing protocols: 1) Organization of a specialized team: A specialized team for comfortable nursing care was established to stipulate specific nursing care protocols in accordance with individual differences of patients. They evaluated and investigated the latter, adjusting nursing care protocols based on results and establishing a targeted nursing method for patients; 2) Clinical nursing care: Nurses minimized external stimuli to guarantee quietness, tidiness, and light strength. They cleaned the skin of patients with warm water while they were guided in performing relaxing exercises in a comfortable position. This provides a healthy rehabilitation environment for patients; 3) Diet nursing: Patients were advised to eat fresh and digestible food, instead of oily ones. They were also advised to supplement with crucian, quails, or nuts, appropriately. When necessary, enteral nutrition support was adopted by jejunostomy, which was designed to ensure nutritional support; 4) Psychological intervention: Education for patients was carried out patiently to popularize disease-related knowledge, introduce cured cases, remind patients of the normal reactions to treatment, and enhance their confidence toward recovery. Moreover, psychological counseling was adopted immediately for patients, helping to alleviate negative emotions and pain. Patients were encouraged to participate in activities with other patients to divert their attention, aiming to maintain the mental health of patients; 5) Drug intervention: Nurses familiarized themselves with the major effects and adverse reactions of drugs, precisely controlling the dose and timing of drugs. They closely monitored adverse reactions following the administration of medication, designed to avoid medication errors. Any adverse reactions were reported immediately to the physicians; 6) Pain nursing: Pain levels were scored regularly and results were reported to the physicians. For patients with mild pain, nurses adopted the simple relaxing therapy (use of music or TV programs) to divert their attention. For patients with acute pain, three-step analgesia was considered. Patient nursing was performed from the time of surgery and ended before discharge. Patients were asked to come to the hospital for reviews every month after surgery. Follow-ups were conducted regularly, investigating patient prognosis.

Outcome measures

Self-rating depression scale (SDS) and self-rating anxiety scale (SAS) scores were used to evaluate patient depression and anxiety, res-

pectively. Pain was evaluated using the standards of Goyal et al. [9] before treatment (T1) and at Day 7 (T2), Day 14 (T3), and Day 21 (T4). Mild pain with no effects on regular life was scored from 0 to 3 points. Moderate pain with effects on regular life was scored from 4 to 6 points. Acute pain with severe effects on regular life was scored from 7 to 10 points. Nursing satisfaction was evaluated at the time of discharge using an anonymous questionnaire, with a total score of 100 points. The questionnaire evaluated patient satisfaction with nurses, nursing skills, and benefits of nursing. The criteria were as follows: Very satisfied ≥ 90 points; Satisfied = 80-90 points; Needs improvement = 60-79 points; Poor ≤ 60 points. Nursing satisfaction was computed as follows: Nursing satisfaction = (Very satisfied + Satisfied)/total × 100%. Quality of life was assessed for cancer patients using EORTC-QLQ-C30 scores [10]. Symptoms (tiredness, pain, nausea, vomiting, inappetence, insomnia, and dreamful sleep) and function levels (cognitive, emotion, physical, social, and role function) were also assessed. Points were transformed into standard scores (0-100 points) using the range-transformed linearity formula. High symptoms scores represent insignificant symptoms, while high function scores indicate promising function. Before discharge, an investigation concerning quality of life was performed, independently, only after patients were fully aware of the items.

Statistical methods

SPSS 24.0 software (SPSS Inc., Chicago, IL, USA) was used for statistical analysis. Enumerated data, including gender, TNM stage, and nursing satisfaction, are presented in the form of rates (%) and were compared between research and control groups using Chi-squared test. Measurement data, including hospitalization period and QLQ-C30 scores, are expressed as mean ± standard deviation and were compared with *t*-tests between research and control groups. SDS, SAS, and GCQ scores were analyzed with repeated measures ANOVA.

Results

Comparison of baseline clinical data

There were no significant differences in patient clinical data concerning age, weight, body mass index (BMI), disease course, gender, residence, smoking history, alcoholic intake, exercise, cancer types, TNM stage, degree of differentiation, lymphatic metastasis, combined disease, and history of chronic pain ($P > 0.050$), suggesting comparable data of patients (**Table 1**).

SDS and SAS scores

Before nursing, there were no significant differences in SDS and SAS scores between research and control groups ($P > 0.050$). After nursing, scores of both groups were significantly lower than those before nursing ($P < 0.050$). SDS and SAS scores in the research group were (49.15±4.62) points and (46.62±4.58) points, respectively. These scores are significantly lower than the (55.27±5.08) points and (55.68±5.49) points recorded in the control group ($P < 0.050$) (**Figures 1** and **2**).

Pain scores

At T1, T2, T3, and T4, pain scores of patients in the research group were (8.62±0.82) points, (6.43±1.24) points, (4.06±0.93) points, and (2.68±1.42) points, respectively. Scores in the control group were (8.59±0.78) points, (6.57±1.31) points, (5.94±1.58) points, and (4.87±1.16) points, respectively. At T1 and T2, pain scores of both groups were not significantly different ($P > 0.050$). However, at T3 and T4, the research group had significantly lower scores, compared with the control group ($P < 0.050$). Additionally, pain scores of patients in both groups at T2 were significantly lower than those at T1 ($P < 0.050$). Scores at T3 were lower than those at T2 and scores at T4 were lower than those at T3. (All $P < 0.050$) (**Figure 3**).

Nursing satisfaction

Nursing satisfaction of patients in the research group was 92.62%, significantly higher than the 68.75% in the control group ($P < 0.001$). Moreover, 69.80% of patients in the research group were very satisfied with nursing care, with only 1.34% deeming it as poor. In contrast, 43.75% of patients in the control group were satisfied with nursing care, with 12.50% deeming it as poor (**Table 2**).

Quality of life

All symptom-related scores in the research group were lower than those in the control

Table 1. Patient clinical data [n (%)]

	Research group (n = 149)	Control group (n = 96)	X^2 or t	P
Age	50.92±11.94	51.68±12.73	0.641	0.468
Body weight	76.34±12.68	74.82±13.08	0.893	0.373
BMI	24.68±6.86	25.18±7.14	0.541	0.589
Course of disease (week)	3.69±0.96	3.53±1.07	1.200	0.231
Gender			0.411	0.521
Male	87 (58.39)	60 (62.50)		
Female	62 (41.61)	36 (37.50)		
Place of residence			0.042	0.837
Rural	39 (26.17)	24 (25.00)		
Town	110 (73.83)	72 (75.00)		
Smoking			0.685	0.408
Yes	98 (65.77)	68 (70.83)		
No	51 (34.23)	28 (29.17)		
Drinking			0.645	0.422
Yes	76 (51.01)	54 (56.25)		
No	73 (48.99)	42 (43.75)		
Movement			0.091	0.763
Yes	19 (12.75)	11 (11.46)		
No	130 (87.25)	85 (88.54)		
Type of cancer			0.224	0.999
Liver cancer	25 (16.78)	17 (17.71)		
Gastric cancer	32 (21.48)	22 (22.92)		
Lung cancer	21 (14.09)	13 (13.54)		
Esophageal cancer	25 (16.78)	18 (18.75)		
Breast cancer	27 (18.12)	18 (18.75)		
Colorectal cancer	10 (6.71)	8 (8.33)		
Differentiation			0.127	0.939
Highly differentiated	27 (18.12)	17 (17.71)		
Medium differentiation	53 (35.57)	36 (37.50)		
Low differentiation	60 (40.27)	43 (44.79)		
Lymphatic transfer			0.727	0.394
Yes	104 (69.80)	62 (64.58)		
No	45 (30.20)	34 (35.42)		
Pathological staging			0.152	0.697
I~II	39 (26.17)	23 (23.96)		
III~IV	110 (73.83)	73 (76.04)		
Combined diseases			0.416	0.519
Yes	59 (39.60)	42 (43.75)		
No	90 (60.40)	54 (56.25)		
Chronic pain history			0.085	0.770
Yes	27 (18.12)	16 (16.67)		
No	122 (81.88)	80 (83.33)		

group (t = 17.284, $P < 0.001$). A similar pattern was also observed for function scores ($P < 0.001$). Patients in the research group obtained a score of (65.27±7.04) points, significantly higher than the (50.15±6.82) points (t = 16.412, $P < 0.001$) in the control group (**Tables 3**, **4**).

Discussion

Postsurgical pain in cancer patients refers to diverse types of pain and a complicated pathogenesis, generally manifesting as persistent or intermittent long-term pain. This, in turn, severely affects cancer treatment [11]. During onset and treatment of cancer, patients usually experience terror, anxiety, and pessimism. These are amplified by cancerous pain. These negative emotions often lead to patients rejecting and dropping out of treatment [5]. In the treatment of cancer, three-step analgesia is the most common nursing protocol applied, alleviating cancerous pain in over 70% of patients. However, it fails to work on postoperative pain for some patients [12]. Thus, finding ways to minimize the negative effects of postoperative pain has become a critical issue in clinical studies.

Concerning manageable intervention methods, choice of nursing patterns is quite critical. In nursing care, comfortable nursing care is a kind of integral pattern that requires the medical staff to not only possess the professional knowledge of nursing care but also be fully aware of the disease-related knowledge. The latter knowledge aims to maintain the optimal physiological and psychological status of patients, helping them to cooperate with treatment [13]. At present, the application value of comfortable nursing care has been proven in the management of diverse diseases [14, 15]. However, its

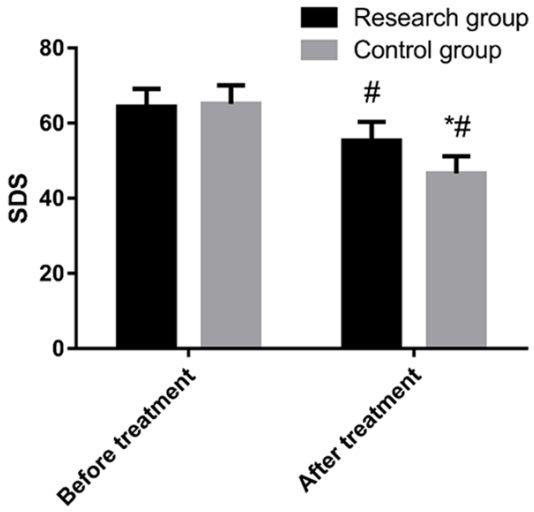

Figure 1. SDS scores of research and control groups before and after nursing. *Represents a comparison with the post-treatment study group SDS score, P < 0.050. #Compared with the SDS.

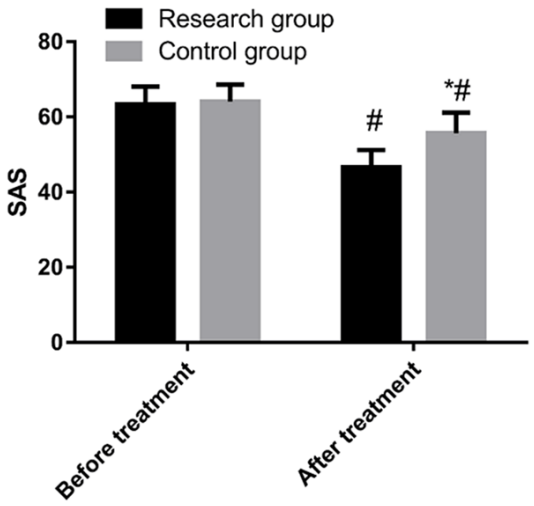

Figure 2. SAS scores before and after nursing. *Representative vs. post-treatment study group SAS score, P < 0.050. #Compared with the SAS score before treatment within the same group, P < 0.050.

application value has not yet been fully examined in minimizing postoperative pain for cancer patients. Considering significant breakthroughs in the application of comfortable nursing care for cancer patients in this hospital, this study aimed to prove its application value in reducing postoperative pain of cancer patients using well-designed experiments.

Results of this study indicated that SAS and SDS scores in the research group were higher

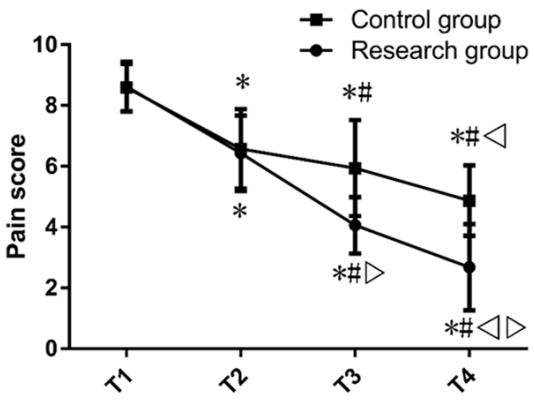

Figure 3. Pain scores of research and control groups. *Represents a comparison with the pain score of the same group at T1, P < 0.050. #Represents a comparison with the pain score of the same group at T2, P < 0.050. ◁Represents a comparison with the pain score of the same group at T3, P < 0.050. ▷Represents a comparison with the pain score of the control group, P < 0.050.

than those in the control group, suggesting that comfortable nursing care can alleviate emotional changes in cancer patients. This may be attributed to psychological counseling and emotional intervention provided by nurses. Counseling and intervention may mitigate or eradicate negative feelings and enhance patient awareness of the diseases, as well as confidence in recovery. These factors will eventually improve prognosis. This is in accord with results obtained by Hessler et al. [16] and Zhao et al. [17] in studying the impact of nursing models on patient psychological factors.

Although no significant differences were found in pain scores of research and control groups at T1 and T2, pain scores in the research group were significantly lower than those in the control group at T3 and T4. This finding suggests that, at the early stage, both nursing care protocols showed promising analgesic effects on the disease. However, at Day 14, comfortable nursing care was more efficient in ameliorating cancerous pain. At the early stages of treatment, three-step analgesia worked efficiently in ameliorating cancerous pain for patients in both groups. However, because of persistent or intermittent attacks of cancerous pain, the efficacy of the three-step analgesia attained its threshold. Eventually, the lack of other interventions for patients in the control group contributed to acute decreases in analgesic effects. This is consistent with the results of Chou et al.

Table 2. Comparison of nursing satisfaction

	Research group (n = 149)	Control group (n = 96)	X^2	P
Very satisfied	104 (69.80)	22 (22.92)		
Satisfaction	34 (22.82)	42 (43.75)		
Needs improvement	9 (6.04)	18 (18.75)		
Not satisfied	2 (1.34)	14 (12.50)		
Satisfaction rate	92.62	68.75	23.872	< 0.001

Table 3. Patient symptom-related scores

	Research group (n = 149)	Control group (n = 96)	t	P
Exhausted	42.16±7.45	52.66±9.16	9.678	< 0.001
Pain	30.54±8.04	48.63±7.69	17.284	< 0.001
Nausea	37.68±8.62	50.14±10.77	10.083	< 0.001
Vomiting	32.17±10.58	50.66±8.68	14.163	< 0.001
Loss of appetite	31.84±7.42	45.16±7.22	13.700	< 0.001
Insomnia	36.94±8.42	49.31±8.14	11.242	< 0.001

Table 4. Patient functional ratings

	Research group (n = 149)	Control group (n = 96)	X^2	P
Cognitive function	65.27±7.04	50.15±6.82	16.412	< 0.001
Emotional function	61.33±9.64	52.37±8.14	7.462	< 0.001
Physical function	70.27±8.68	60.16±6.52	9.688	< 0.001
Social function	79.16±5.56	69.62±7.04	11.613	< 0.001
Role function	75.34±7.86	64.18±6.26	11.611	< 0.001

[18] in the study of postoperative pain in cancer patients. In contrast, in the research group, a daily assessment of pain strength and duration guaranteed appropriate treatment at the time of the pain attack. This not only pacified patients with an improvement in tolerance to pain but also reduced the risk of adverse reactions of analgesics administration, thus facilitating recovery. Results are consistent with the results of Boryri et al. [19] in a study on comfort nursing for labor pain.

In addition, the current study compared nursing satisfaction of patients between research and control groups. It was found that patients in the research group were more satisfied than those in the control group, suggesting that comfortable nursing care is more applicable for cancer patients. During comfortable nursing care, patients were satisfied physiologically and psychologically with thoughtful and meticulous care. Appropriate communication with patients also mitigated negative feelings and minimized doctor-patient disputes. Increased confidence toward the medical staff also improved patient compliance. This, in turn, ameliorated prognosis. Wainwright et al. [20] and Singh et al. [21] also mentioned in their study that doctor-patient relationships are also one of the key factors in improving rehabilitation.

Regarding quality of life scores, patients in the research group had higher quality of life scores than those in the control group. Results suggest that comfortable nursing care can effectively increase patient quality of life. This could be attributed to the following factors: 1) Comfortable nursing care can improve patient attitudes toward the disease, thereby helping them understand that negative feelings can only interrupt their recovery; 2) It minimizes the effects of cancerous pain on patients and improves recovery; 3) It helps reduce disputes between the medical staff and patients, thereby maximizing the efficacy of treatment; and 4) In comfortable nursing care, patients are monitored closely for any anomalies, averting the exacerbation of patients due to other factors. These factors are in accord with those examined by other scholars [22-24].

Present results confirm that comfortable nursing care is applicable for treatment of cancer patients. However, there were some limitations to the current study. First, this study had a small sample size or singleness in the structure of population. Second, inadequate cases of other types of cancers may have contributed to the absence of corresponding statistical analysis. Thus, in the future, long-term follow-ups should be carried out, continuing to improve the study design and optimizing results.

In conclusion, for patients with advanced cancer, comfortable nursing can effectively mitigate pain, with significant improvements in emotions and quality of life. Therefore, comfort-

able nursing care should be promoted in clinical practice.

Disclosure of conflict of interest

None.

Address correspondence to: Zhang Zhang, Medical Oncology, Sun Yat-sen University Cancer Certer, No.651, Dongfeng East Road, Guangzhou 510060, Guangdong, China. Tel: +86-15800280780; E-mail: zhang1122linna@163.com

References

[1] Jaaback K and Johnson N. Intraperitoneal chemotherapy for the initial management of primary epithelial ovarian cancer. Cochrane Database Syst Rev 2006; 11: CD005340.

[2] Pavlova NN and Thompson CB. The emerging hallmarks of cancer metabolism. Cell Metab 2016; 23: 27-47.

[3] Manchikanti L, Kaye AM, Knezevic NN, Mcanally H, Slavin K, Trescot AM, Blank S, Pampati V, Abdi S and Grider JS. Responsible, safe, and effective prescription of opioids for chronic non-cancer pain: American society of interventional pain physicians (ASIPP) guidelines. Pain Physician 2017; 20: S3.

[4] Carlson CL. Effectiveness of the world health organization cancer pain relief guidelines: an integrative review. J Pain Res 2016; 9: 515-534.

[5] Marschall U, L'Hoest H, Radbruch L and Häuser W. Long-term opioid therapy for chronic noncancer pain in Germany. Eur J Pain 2016; 20: 767-776.

[6] Hu C, Zhang H, Wu W, Yu W, Li Y, Bai J, Luo B, Li S. Acupuncture for pain management in cancer: a systematic review and meta-analysis. Evid Based Complement Alternat Med 2016; 2016: 1720239.

[7] Vincent JL, Shehabi Y, Walsh TS, Pandharipande PP, Ball JA, Spronk P, Dan L, Strøm T, Conti G and Funk GC. Comfort and patient-centred care without excessive sedation: the eCASH concept. Intensive Care Med 2016; 42: 962-971.

[8] Serratì S, De SS, Pilato B, Petriella D, Lacalamita R, Tommasi S and Pinto R. Next-generation sequencing: advances and applications in cancer diagnosis. Onco Targets Ther 2016; 9: 7355-7365.

[9] Goyal MK, Kuppermann N, Cleary SD, Teach SJ and Chamberlain JM. Racial disparities in pain management of children with appendicitis in emergency departments. JAMA Pediatr 2015; 169: 996-1002.

[10] King MT, Costa DS, Aaronson NK, Brazier JE, Cella DF, Fayers PM, Grimison P, Janda M, Kemmler G, Norman R, Pickard AS, Rowen D, Velikova G, Young TA, Viney R. QLU-C10D: a health state classification system for a multi-attribute utility measure based on the EORTC QLQ-C30. Qual Life Res 2016; 25: 625-636.

[11] Portenoy RK, Ahmed E. Cancer pain syndromes. Hematol Oncol Clin North Am 2018; 32: 371-386.

[12] Mercadante S and Portenoy RK. Breakthrough cancer pain: twenty-five years of study. Pain 2016; 157: 1.

[13] Yabrodi M and Mastropietro CW. Hypoplastic left heart syndrome: from comfort care to long-term survival. Pediatr Res 2016; 81: 142.

[14] Hunter PV, Hadjistavropoulos T, Thorpe L, Lix LM and Malloy DC. The influence of individual and organizational factors on person-centred dementia care. Aging Ment Health 2016; 20: 700-708.

[15] Lam V, Kain N, Joynt C and van Manen MA. A descriptive report of end-of-life care practices occurring in two neonatal intensive care units. Palliat Med 2016; 30: 971-978.

[16] Hessler JB, Schäufele M, Hendlmeier I, Junge MN, Leonhardt S, Weber J and Bickel H. Behavioural and psychological symptoms in general hospital patients with dementia, distress for nursing staff and complications in care: results of the general hospital study. Epidemiol Psychiatr Sci 2018; 27: 278-287.

[17] Zhao X, Cui L, Wang W, Su Q, Li X and Wu J. Influence of psychological intervention on pain and immune functions of patients receiving lung cancer surgery. Pak J Med Sci 2016; 32: 155.

[18] Chou R, Gordon DB, de Leon-Casasola OA, Rosenberg JM, Bickler S, Brennan T, Carter T, Cassidy CL, Chittenden EH and Degenhardt E. Management of postoperative pain: a clinical practice guideline from the American pain society, the American society of regional anesthesia and pain medicine, and the American society of anesthesiologists' committee on regional anesthesia, executive committee, and administrative council. J Pain 2016; 17: 131-157.

[19] Boryri T, Noori NM, Teimouri A and Yaghobinia F. The perception of primiparous mothers of comfortable resources in labor pain (a qualitative study). Iran J Nurs Midwifery Res 2016; 21: 239.

[20] Wainwright E, Wainwright D, Keogh E and Eccleston C. The social negotiation of fitness for work: tensions in doctor-patient relationships over medical certification of chronic pain. Health 2015; 19: 17-33.

[21] Singh M. Communication as a bridge to build a sound doctor-patient/parent relationship. Indian J Pediatr 2016; 83: 33-37.

[22] Nabolsi MM, Wardam L and Al-Halabi JO. Quality of life, depression, adherence to treatment and illness perception of patients on haemodialysis. Int J Nurs Pract 2015; 21: 1-10.

[23] Rha SY, Park Y, Song SK, Lee CE and Lee J. Caregiving burden and the quality of life of family caregivers of cancer patients: the relationship and correlates. Eur J Oncol Nurs 2015; 19: 376-382.

[24] Beerens HC, Zwakhalen SM, Verbeek H, Ruwaard D, Ambergen AW, Leino-Kilpi H, Stephan A, Zabalegui A, Soto M and Saks K. Change in quality of life of people with dementia recently admitted to long-term care facilities. J Adv Nurs 2015; 71: 1435-1447.