RESEARCH ARTICLE

Effects of hospice care combined with mindfulness-based stress reduction therapy on negative emotions along with living quality in patients with advanced tumours

Qianqian Xu[1], Xinyan Zhang[2], Yiying Liu[3]*

Abstract

Objective: To disclose the impact of hospice-care in combination with mindfulness-based stress reduction therapy on negative emotions and quality of life in patients with advanced tumours.

Method: The study was conducted at the Fuyang People's Hospital, Fuyang, China, from August 2021 to October 2022, and comprised patients with advanced malignant tumours who underwent therapy. They were randomised into control group A receiving routine nursing, and observation group B receiving hospice-care combined with mindfulness-based stress reduction therapy. The pain score, negative emotions, sleep quality, self-efficacy, quality of life and satisfaction with nursing were compared between the groups. Data was analysed using SPSS 20.

Results: Of the 114 patients, 57(50%) were in group A; 31(54.4%) males and 26(45.6%) females with mean age 64.23±12.41 years (range: 45-83 years). There were 57(50%) patients in group B; 28(49.1%) males and 29(50.9%) females with mean age 63.54±12.36 years (range: 40-88 years) ($p>0.05$). Post-intervention, group B subjects had lower pain, lower depression and anxiety, higher sleep quality, higher self-efficacy, higher quality of life, and higher satisfaction with nursing compared to group A ($p<0.05$).

Conclusion: Hospice-care combined with mindfulness-based stress reduction therapy could relieve negative emotions, and promote the quality of life of patients with advanced tumours.

Keywords: Tumours, Hospice-care, Mindfulness, Stress reduction therapy, Negative emotions, Quality of life.

(JPMA 75: S-106 [Suppl. 02]; 2025) **DOI: https://doi.org/10.47391/JPMA.SRPH-18**

Introduction

Morbidity and mortality in malignant tumour cases have shown a rising trend in recent years, threatening human health.[1] There were 457,000 new cancer cases and 300,000 deaths in China in 2020, and cancer emerged as the major cause of death in China.[2] Although the survival period of some cancer patients has been extended owing to advancements in medical science, the prognosis for patients with advanced cancer has not been really improved because the treatment has little effect on such cases, which not only increases patients' pain, but also puts a heavy burden on the families of the patients.[3] Death is an unavoidable objective fact of life, and for patients with advanced cancer, the last leg of the journey of life needs the most care and love.[4]

Hospice-care is a service for terminally ill patients who are expected to live for half-a-year at the most.[5] It provides comprehensive care to patients and their families with the help of multidisciplinary care teams, including physical, psychological, social as well as spiritual care, to promote the quality of life (QOL), and enable the patients to live peacefully and with dignity for the rest of their lives, while maintaining the physical and mental health of their families.[6] As reported previously, interdisciplinary collaborative hospice-care improves the emotion and QOL in terminal geriatric cancer patients.[7]

The target of nursing for patients with advanced cancer is not to cure the disease, but to enable the patients to face death peacefully in a pain-free and comfortable state.[8] Relevant studies have manifested that patients with advanced cancer possess a high demand for hospice-care, and the most important demand is for effective pain control and management.[9] Studies have confirmed that mindfulness-based stress reduction therapy is widely used in various aspects of mental illness and pain management, which can make patients have longer pain tolerance, less pain intensity, fewer psychological pressure and improved QOL.[10] Cherkin et al. suggested that mindfulness-based stress reduction therapy is an effective treatment method for patients with chronic low back pain.[10] Nijjar et al. indicated that mindfulness-based stress reduction therapy improved short-term psychosocial wellbeing of cardiac patients during their first year of recovery.[11]

The current study was planned to explore the impact of

[1,2]Department of The Palliative Care Ward of the Oncology, Fuyang People's Hospital, Fuyang, Anhui 236000, China; [3]Department of Nursing, Fuyang People's Hospital, Fuyang, Anhui 236000, China.

Correspondence: Yiying Liu. e-mail: yan20230107@163.com

ORICID: 0009-0007-4124-2048

hospice-care in combination with mindfulness-based stress reduction therapy on negative emotions And QOL of patients with advanced tumours.

Patients and Methods

The study was conducted at the Fuyang People's Hospital, Fuyang, China, from August 2021 to October 2022 and comprised patients with advanced malignant tumours who underwent therapy. They were randomised using the random number table method into control group A and observation group B. All the patients signed the informed consent form. This study was approved by the Ethics Committee of Fuyang People's Hospital., Fuyang, China. Group A patients received routine nursing methods, including diet nursing, disease health education, psychological counselling, rational use of analgesic medicines, and close observation of patients' vital signs and disease changes.

Group B patients received hospice-care combined with mindfulness-based stress reduction therapy. A hospice-care team composed of doctors, nurses, pain physicians, dietitians and psychologists was established. In addition to the patient's medical history, the team collected relevant data, including the patients' current symptoms, treatment expectations, social and cultural background, family socioeconomic status (SES), and the psychological status of the patients and their family members. The team then held a meeting with the family. A hospice-care plan was developed based on treatment expectations and opinions of the patients and their family members. Respecting patients' right to informed decision-making, hospice staff fully communicated with their families, chose the right time to strategically inform the patients of their condition, and gave patients a certain amount of time to fulfil their final wishes. The hospice staff communicated more with patients, listened carefully to understand the actual ideas of the patients, evaluated the psychological situation of the patients, and tried to alleviate the patients' anxiety, tension and other negative emotions. The staff communicated with the family members of the patients, relieved their pain, guilt and other negative emotions. This was done to improve the psychological state of the family members, to reduce the impact of the family members' negative emotions on the patients. The family members were encouraged to care more about their patients with optimism, so that the patients felt loved. In psychological communication, death education was gradually introduced to eliminate the element of fear among the patients. For patients with special requirements, psychologists could intervene to improve the mentality of patients and their families in the face of death.

The hospice staff provided patients with a comfortable ward environment and private space, with temperature and humidity in the room being kept in a suitable range. The staff prepared 4-5 pillows of different shapes for the patients, so that they could adopt the appropriate position and posture that made them comfortable. The staff assisted the patients' family members to clean the patients' bodies every day, and played some light music in the room to relieve the patients' anxiety and help them sleep. Strengthening pain management. The nurses strictly followed the "three-step" principle of drug administration. They closely observed adverse reactions among patients after taking drugs, and promptly disposed them off. The staff could use a combination of music, massage, acupuncture and other methods to relieve patients' pain.

Patients with advanced tumours are in a state of consumption, but, due to the influence of chemotherapy drugs and opioid analgesics, the patients have multiple conditions, such as loss of appetite and constipation, and it is necessary to develop an individualise diet plan according to the status and preferences of the patients. For patients who could not eat, nasal feeding diet was provided, if necessary.

With respect to the mindfulness-based stress reduction therapy, a specific process was followed. The psychological consultant introduced theoretical knowledge and relevant operating procedures of mindfulness-based stress reduction to the patients, distributed the guidance manual and video and audio materials among the patients, taught them the correct breathing method, and guided them in performing exercises. The psychological consultant taught the method of walking meditation to the patients, taught them relevant skills, shared experiences, and encouraged them to apply the results in their daily lives.[3] For body scanning, the patients were asked to lie flat on their backs, closed their eyes, and adjust their breathing. The psychological consultant directed the patients' attention from the toes, gradually scanning and experiencing the sensations of various parts of the body, up to the top of the head. For breathing meditation, the patients were made to sit in a comfortable position, and focus on breathing. When a strong emotion or feeling, like fear, pain, anger and anxiety, arose, the patients paid attention to the feeling, experienced it, and observed its emergence and disappearance without judgment. When the sensation subsided, the psychological consultant directed patients' attention back to their breathing.

The mindfulness meditation was combined with Hatha yoga to relax the skeletal and muscular system of the patients. The psychological consultant guided the patients in enhancing the perception and awareness of the body

while practicing yoga movements.

The psychological consultant also guided the patients in applying mindfulness to the usual walking activity during which the patients focussed their attention on their feet and felt the contact between the body and the ground. The psychological consultant guided the patients in reviewing all these steps, and helped the patients make a schedule, and exercise as planned for 60 minutes once every day.

Outcome parameters were assessed using the Visual Analogue Scale (VAS) score[12] to compare the pain perception between the groups. The total score was 10 points, with higher scores indicating more severe pain.

The changes in negative emotions were compared between the groups using the Self-rating Anxiety Scale (SAS) along with the Self-rating Depression Scale (SDS).[13] The total score of SAS and SDS was 100 points, and the cut-off score was 50. If the score of SAS and SDS was >50 points, it meant that the patient had anxiety and depression.

The 8-item Athens Insomnia Scale (AIS) was used to compare the changes in sleep quality before and after the intervention in the groups.[14] The items were scored on a 4-point scale, with total score <4 indicating no sleep disorder, and >6 indicating insomnia.

Before and after the intervention, the Chinese Strategies Used by People to Promote Health (C-SUPPH) was implemented to assess patients' self-efficacy,[15] positive attitude and self-stress reduction. They were rated on a 0-40 scale, with higher scores indicating stronger self-efficacy.

The QOL of the groups was compared using the Cancer Quality of Life Questionnaire-Core30 (QLQ-C30),[16] whichi mainly included 5 aspects: physical function, emotional function, cognitive function, role function, and social function. The total score of each item was 100 points, and the QLQ-C30 score was proportional to the QOL of patients.

The satisfaction of patients with nursing was assessed using the institutional questionnaire, which included nursing content, nursing attitude, etc. The total score of the questionnaire was 100 points, with >90 = very satisfied, 60-89=satisfied, and <60=unsatisfactory. Nursing satisfaction was considered the total of very satisfied and satisfied categories.

Data was analysed using SPSS 20. Measurement data was expressed as mean±standard deviation, and *t*-test was used for comparison. Statistical data was expressed as frequencies and percentages, and chi-square test was used for comparison. P<0.05 was taken as statistically significant.

Results

Of the 114 patients, 57(50%) were in group A; 31(54.4%) males and 26(45.6%) females with mean age 64.23±12.41 years (range: 45-83 years). There were 57(50%) patients in group B; 28(49.1%) males and 29(50.9%) females with mean age 63.54±12.36 years (range: 40-88 years) ($p>0.05$).

Prior to intervention, no significant difference was noted in VAS scores between the groups ($p>0.05$). Post-intervention, the VAS score decreased in both groups ($p<0.05$), but group B had lower VAS score compared to group A ($p<0.05$) (Figure 1).

Prior to intervention, no significant difference was noted in negative emotions between the groups ($p>0.05$). Post-intervention, the SAS and SDS scores decreased in both the groups ($p<0.05$), but the reduction was more significant in group B than in group A ($p<0.05$) (Figure 2).

Prior to intervention, no significant difference was noted in AIS score between the groups ($p>0.05$). Post-intervention, the AIS score decreased in both the groups ($p<0.05$), but

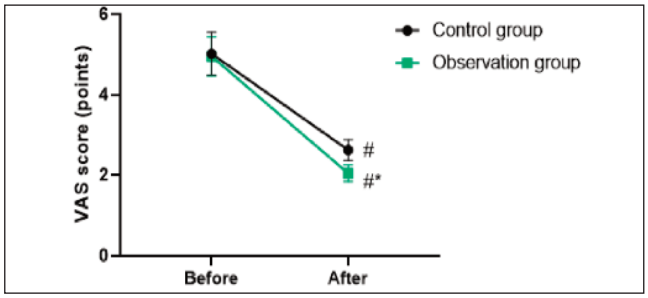

Figure-1: Visual analogue scale (VAS) score in the groups.

*#p<0.05 compared to baseline, *p<0.05 compared to control group.*

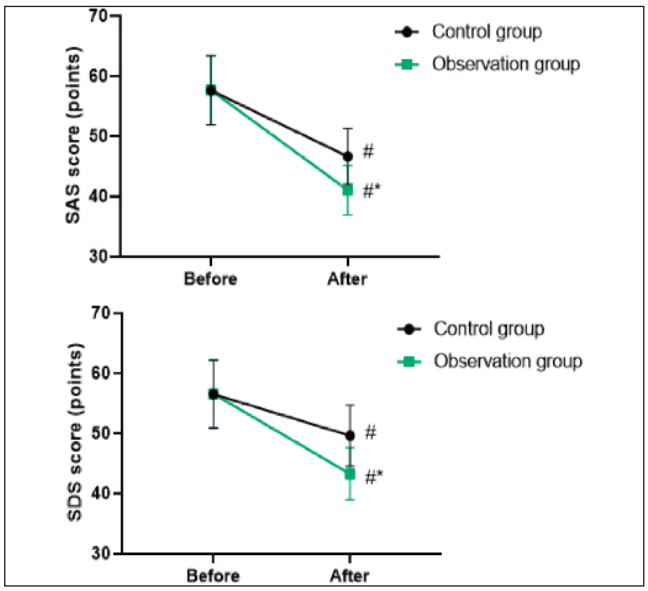

Figure-2: Negative emotions in the two groups.

*#p<0.05 compared to baseline, *p<0.05 compared to control group. SAS: Self-rating Anxiety Scale, SDS: Self-rating Depression Scale.*

the difference was more significant in group B compared to group A (p<0.05) (Figure 3).

Prior to intervention, no significant difference was noted in C-SUPPH scores between the groups (p>0.05). Post-intervention, the scores were found elevated in both the groups (p<0.05), but the increase was more significant in group B than in group A (p<0.05) (Figure 4).

Prior to intervention, no significant difference was noted in QLQ-C30 scores between the groups (p>0.05). Post-intervention, the scores were found elevated in both the groups (p<0.05), but the difference was more significant in group B compared to group A (p<0.05) (Figure 5).

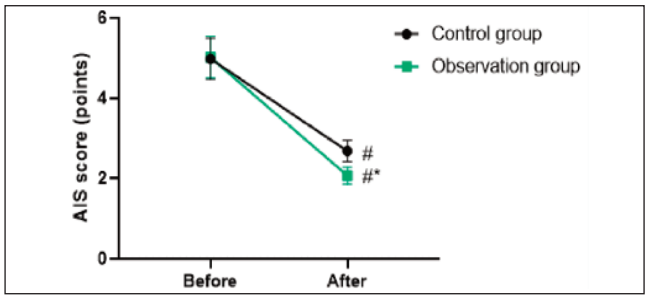

Figure-3: Sleep quality in the groups.

*#p<0.05 compared to baseline, *p<0.05 compared to control group. AIS: Athens Insomnia Scale.*

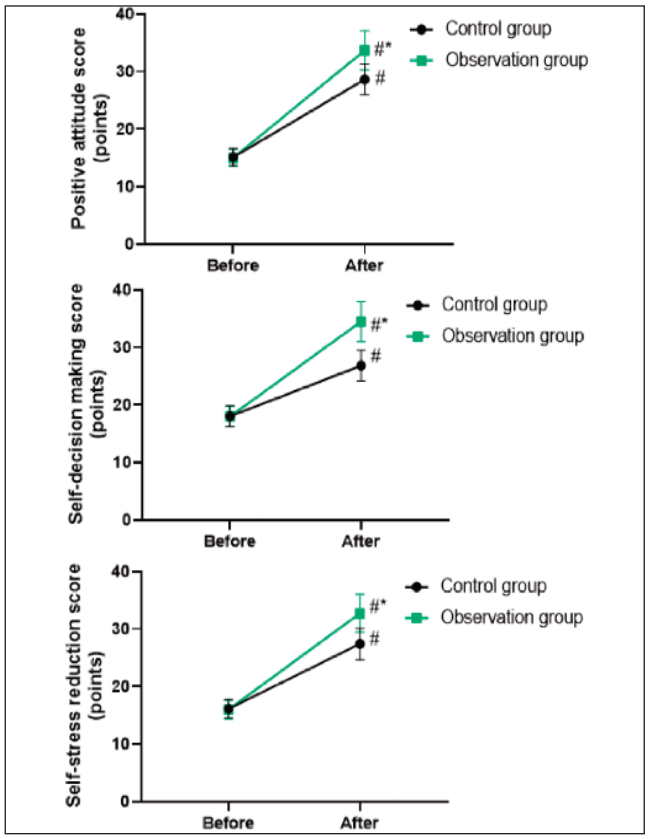

Figure-4: Self-efficacy in the study groups.

*#p<0.05 compared to baseline, *p<0.05 compared to control group.*

Group B subjects had higher nursing satisfaction compared to group A (p<0.05) (Table).

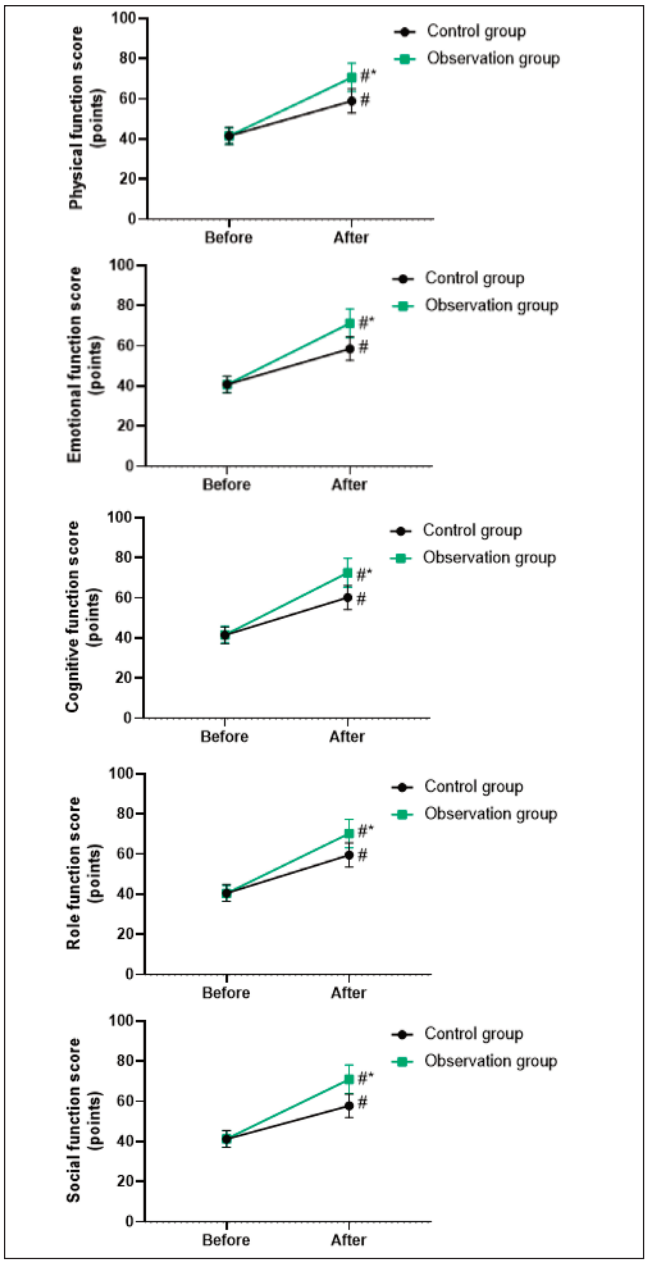

Figure-5: Quality of life comparison between the groups.

*#p<0.05 compared to baseline, *p<0.05 compared to control group.*

Table: Nursing satisfaction level in the two groups.

Groups	n	Very satisfied	Satisfied	Dissatisfied	Total satisfaction rate
Control	57	26	22	9	48 (84.21%)
Observation	57	30	25	2	55 (96.49%)
x^2					4.93
***p*-value**					0.03

Discussion

In recent years, the incidence of malignant tumours has increased globally, with increased morbidity and mortality, and a trend towards young patient profile.[17] Once diagnosed, the patients need to undergo a series of procedures, such as surgery, chemo-radiotherapy and targetted therapy, which make the patients suffer serious physical and psychological distress.[18] In addition, patients with advanced tumours represent the group closest to death. In the face of death, the psychological and physiological stress reactions are huge, and the mental pain is much higher than the physical pain.[19] Therefore, it is a clinical challenge to make patients get rid of such fear, despair, anxiety and other negative emotions, correctly face the disease, and objectively treat the disappearance of life.

Hospice-care is a new nursing model that puts patients first, fully respects their sovereignty, and shows their vitality,[20] mainly serving patients with short survival time closer to death. Although the ultimate goal of hospice-care is not to cure the disease, the patient's physical symptoms can affect psychological stress, and there is still a need to pay attention to the emotional influences of oedema, trauma and pain during the care process.[21] Through physical, psychological and humanistic care for patients, hospice-care provides great relief to the patients, reduces their pain and suffering, eliminates their negative emotions, and enables them to face death in a peaceful state of mind and spend the rest of their lives in as much comfort and with as much grace as possible.[22]

Mindfulness-based stress reduction is a kind of stress management method that has its origins in Zen Buddhism.[23] Its core ideas include "conscious awareness," "attention to the moment" and "no evaluation". Based on mindfulness, it can relieve stress and improve emotional management through meditation, which has been widely used in the field of chronic diseases and mental diseases.[24]

In the current study, the outcomes showed that post-intervention, group B patients had lower VAS, SAS, SDS and AIS scores compared to control group A, implying that hospice-care plus mindfulness-based stress reduction therapy could relieve pain, reduce negative emotions, and promote the sleep quality of patients with advanced tumours. Richard R Reich et al. indicated that mindfulness-based stress reduction therapy could improve psychological and fatigue symptom clusters of post-treatment breast cancer patients.[25] Liu et al. reported that interdisciplinary collaborative hospice-care could improve emotional function and symptoms of terminal geriatric cancer patients.[7] Yaadwinder Shergill et al. indicated that mindfulness-based stress reduction therapy could relieve chronic neuropathic pain of breast cancer patients.[26]

Moreover, the current study indicated that after intervention, group B patients had higher C-SUPPH, QLQ-C30 and nursing satisfaction scores compared to group A controls, reflecting that hospice-care in combination with mindfulness-based stress reduction therapy could promote the QOL, self-efficacy and nursing satisfaction among patients with advanced tumours. This was in line with previous studies.[27,28]

The current study has limitations as the sample size was not calculated, which could have affected the power of the study and the validity of the findings.

Conclusion

Hospice-care combined with mindfulness-based stress reduction therapy could relieve negative emotions, and promote QOL of patients with advanced tumours.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

References

1. Reardon MJ. Malignant tumor overview. Methodist Debakey Cardiovasc J 2010;6:35-7. doi: 10.14797/mdcj-6-3-35.
2. Qiu H, Cao S, Xu R. Cancer incidence, mortality, and burden in China: a time-trend analysis and comparison with the United States and United Kingdom based on the global epidemiological data released in 2020. Cancer Commun (Lond) 2021;41:1037-48. doi: 10.1002/cac2.12197.
3. Agosto Salgado S, Kaye ER, Sargi Z, Chung CH, Papaleontiou M. Management of Advanced Thyroid Cancer: Overview, Advances, and Opportunities. Am Soc Clin Oncol Educ Book 2023;43:e389708. doi: 10.1200/edbk_389708.
4. Siegel RL, Miller KD, Wagle NS, Jemal A. Cancer statistics, 2023. CA Cancer J Clin 2023;73:17-48. doi: 10.3322/caac.21763.
5. Currow DC, Agar MR, Phillips JL. Role of Hospice Care at the End of Life for People With Cancer. J Clin Oncol 2020;38:937-43. doi: 10.1200/jco.18.02235.
6. Ling M, Wang X, Ma Y, Long Y. A Review of the Current State of Hospice Care in China. Curr Oncol Rep 2020;22:99. doi: 10.1007/s11912-020-00959-y.
7. Liu Y, Shen Y, Pan Q, He H, Zou H, Huang Z, et al. Application of interdisciplinary collaborative hospice care for terminal geriatric cancer patients: a prospective randomized controlled study. Support Care Cancer 2022;30:3553-61. doi: 10.1007/s00520-022-06816-x.
8. Vila C, Reñones C, Ferro T, Peñuelas M, Del Mar Jiménez M, Rodríguez-Lescure Á, et al. Advanced breast cancer clinical nursing curriculum: review and recommendations. Clin Transl Oncol 2017;19:251-60. doi: 10.1007/s12094-016-1530-0.
9. Chapman EJ, Edwards Z, Boland JW, Maddocks M, Fettes L, Malia C, et al. Practice review: Evidence-based and effective management of pain in patients with advanced cancer. Palliat Med 2020;34:444-53. doi: 10.1177/0269216319896955.
10. Cherkin DC, Sherman KJ, Balderson BH, Cook AJ, Anderson ML, Hawkes RJ, et al. Effect of Mindfulness-Based Stress Reduction vs

Cognitive Behavioral Therapy or Usual Care on Back Pain and Functional Limitations in Adults With Chronic Low Back Pain: A Randomized Clinical Trial. JAMA 2016;315:1240-9. doi: 10.1001/jama.2016.2323.

11. Nijjar PS, Connett JE, Lindquist R, Brown R, Burt M, Pergolski A, et al. Randomized Trial of Mindfulness-Based Stress Reduction in Cardiac Patients Eligible for Cardiac Rehabilitation. Sci Rep 2019;9:18415. doi: 10.1038/s41598-019-54932-2.
12. Karcioglu O, Topacoglu H, Dikme O, Dikme O. A systematic review of the pain scales in adults: Which to use? Am J Emerg Med 2018;36:707-14. doi: 10.1016/j.ajem.2018.01.008.
13. Dunstan DA, Scott N, Todd AK. Screening for anxiety and depression: reassessing the utility of the Zung scales. BMC Psychiatry 2017;17:329. doi: 10.1186/s12888-017-1489-6.
14. Soldatos CR, Dikeos DG, Paparrigopoulos TJ. Athens Insomnia Scale: validation of an instrument based on ICD-10 criteria. J Psychosom Res 2000;48:555-60. doi: 10.1016/s0022-3999(00)00095-7.
15. Yuan C, Qian H, Wang J, Lev EL, Yuan A, Hinds PS. Factorial structure of a scale: Strategies Used by People to Promote Health--Chinese version. Cancer Nurs 2015;38:e13-20. doi: 10.1097/ncc.0000000000000151.
16. Huang D, Zeng D, Tang Y, Jiang L, Yang Q. Mapping the EORTC QLQ-C30 and QLQ H&N35 to the EQ-5D-5L and SF-6D for papillary thyroid carcinoma. Qual Life Res 2024;33:491-505. doi: 10.1007/s11136-023-03540-9.
17. Patel A. Benign vs Malignant Tumors. JAMA Oncol 2020;6:1488. doi: 10.1001/jamaoncol.2020.2592.
18. Nasir A, Khan A, Li J, Naeem M, Khalil AAK, Khan K, et al. Nanotechnology, A Tool for Diagnostics and Treatment of Cancer. Curr Top Med Chem 2021;21:1360-76. doi: 10.2174/1568026621666210701144124.
19. Warth M, Zöller J, Köhler F, Aguilar-Raab C, Kessler J, Ditzen B. Psychosocial Interventions for Pain Management in Advanced Cancer Patients: a Systematic Review and Meta-analysis. Curr Oncol Rep 2020;22:3. doi: 10.1007/s11912-020-0870-7.
20. Mulville AK, Widick NN, Makani NS. Timely Referral to Hospice Care for Oncology Patients: A Retrospective Review. Am J Hosp Palliat Care 2019;36:466-71. doi: 10.1177/1049909118820494.
21. Kumar P, Wright AA, Hatfield LA, Temel JS, Keating NL. Family Perspectives on Hospice Care Experiences of Patients with Cancer. J Clin Oncol 2017;35:432-9. doi: 10.1200/jco.2016.68.9257.
22. Sharafi S, Ziaee A, Dahmardeh H. What are the outcomes of hospice care for cancer patients? A systematic review. Support Care Cancer 2022;31:64. doi: 10.1007/s00520-022-07524-2.
23. Khoury B, Sharma M, Rush SE, Fournier C. Mindfulness-based stress reduction for healthy individuals: A meta-analysis. J Psychosom Res 2015;78:519-28. doi: 10.1016/j.jpsychores.2015.03.009.
24. Janssen M, Heerkens Y, Kuijer W, van der Heijden B, Engels J. Effects of Mindfulness-Based Stress Reduction on employees' mental health: A systematic review. PLoS One 2018;13:e0191332. doi: 10.1371/journal.pone.0191332.
25. Reich RR, Lengacher CA, Alinat CB, Kip KE, Paterson C, Ramesar S, et al. Mindfulness-Based Stress Reduction in Post-treatment Breast Cancer Patients: Immediate and Sustained Effects Across Multiple Symptom Clusters. J Pain Symptom Manage 2017;53:85-95. doi: 10.1016/j.jpainsymman.2016.08.005.
26. Shergill Y, Rice DB, Khoo EL, Jarvis V, Zhang T, Taljaard M, et al. Mindfulness-Based Stress Reduction in Breast Cancer Survivors with Chronic Neuropathic Pain: A Randomized Controlled Trial. Pain Res Manag 2022;2022:4020550. doi: 10.1155/2022/4020550.
27. Chung V, Sun V, Ruel N, Smith TJ, Ferrell BR. Improving Palliative Care and Quality of Life in Pancreatic Cancer Patients. J Palliat Med 2022;25:720-7. doi: 10.1089/jpm.2021.0187.
28. Chang YC, Chiu CF, Wang CK, Wu CT, Liu LC, Wu YC. Short-term effect of internet-delivered mindfulness-based stress reduction on mental health, self-efficacy, and body image among women with breast cancer during the COVID-19 pandemic. Front Psychol 2022;13:949446. doi: 10.3389/fpsyg.2022.949446.