

Psychological Intervention During Radiotherapy for Cancer Patients

Yu Luo, Kunhai Xiong, Qiao Lan, Yurui Wu, Fangzhen Qin, Yin Li, Liang Qin*

Lichuan People's Hospital, Lichuan 445400, Hubei Province, China

*Corresponding author: Liang Qin, m17371800290@163.com

Copyright: © 2024 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: The aim of this study was to investigate the effectiveness and applicability of psychological interventions for cancer patients during radiotherapy. By analyzing the background and significance of existing studies, it was found that radiotherapy has a significant impact on a patient's mental health status. As an important therapeutic tool, psychological intervention occupies an important position in radiotherapy. The specific applications of individual psychological intervention methods and group psychological intervention methods are explored, and corresponding assessment indexes and methods are proposed for assessing the effects of psychological interventions. Through in-depth discussions, the importance and necessity of psychological interventions during radiotherapy for oncology patients are concluded to provide strong support and guidance for future clinical practice.

Keywords: Cancer patients; During radiotherapy; Psychological intervention; Mental health; Methods and techniques; Effect assessment

Online publication: 5 July, 2024

1. Background and significance of the study

During radiotherapy, patients often face physical discomforts such as pain, nausea, and fatigue, as well as psychological stress and anxiety brought about by the treatment. Previous studies have found that more than 50% of cancer patients may experience psychological problems during radiotherapy, including depression, anxiety and insomnia^[1]. Psychological intervention can help patients actively cope with psychological distress during radiotherapy by providing emotional support, teaching coping strategies, and providing information.

By studying the theory and practice of psychological intervention during radiotherapy for cancer patients, we explore effective psychological intervention methods, provide more effective intervention strategies and measures for the mental health of cancer patients, help better cope with psychological distress during treatment, improve treatment effects, improve quality of life, strengthen the cooperation between the medical team and related organization, and establish a scientific system of psychological intervention, so as to provide cancer patients with more comprehensive and high-quality medical services for cancer patients.

2. Analysis of the psychological health status of cancer patients

In cancer treatment, the course of radiotherapy is usually long and requires daily treatment, which undoubtedly poses a great challenge to patients' psychological tolerance. On the one hand, patients often experience changes in their physical conditions during radiotherapy, such as pain, debilitation and insomnia, triggering anxiety and depression, which affect their mental health. Fatigue induced by radiotherapy can also lead to depression and lack of motivation, affecting patients' quality of life. On the other hand, the treatment process of radiotherapy requires patients to be continuously treated all the time, and this constant traveling back and forth or prolonged hospitalization causes psychological stress and inconvenience to patients, and this inconvenience and psychological stress negatively affects their mental health.

Numerous studies have shown that oncology patients who receive psychological interventions can significantly reduce anxiety and depression, increase life satisfaction, and improve treatment adherence [2-3]. Psychological intervention has an important position in oncology treatment, which helps patients cope with psychological distress during the treatment process by providing appropriate support and intervention, enhancing their psychological stress resistance, improving treatment adherence, and promoting the recovery process. Psychological interventions can not only reduce patients' psychological discomfort but also improve physical symptoms and life satisfaction. Therefore, it is of great significance to strengthen the practice and research of psychological intervention during radiotherapy to improve the overall treatment effect and quality of life of patients.

3. Psychological intervention methods and techniques

Psychological intervention is an action based on psychological theories and methods to promote mental health, disease prevention and rehabilitation by intervening in the mental processes and behaviours of individuals or groups. The concept of psychological intervention covers a wide range of interventions, including two categories: preventive and therapeutic interventions.

- (1) Preventive interventions focus on underlying psychological problems and aim to prevent the onset of psychological disorders. The core concept of preventive intervention is to reduce the risk of mental disorders and to protect and promote people's mental health through early intervention and effective intervention. Preventive intervention may include forms of mental health education, psychological counseling, psychological consultation, etc. Popularizing mental health knowledge and skills enhances the individual's psychological resilience, regulation and self-management ability.
- (2) Therapeutic interventions focus on individuals who already have psychological problems, aiming to improve their psychological state and functioning. Therapeutic intervention can include individual psychotherapy, family system therapy, medication and other forms of treatment through targeted intervention programmes to help individuals solve their psychological problems and restore their mental health.

According to the scope of the target of intervention, psychological intervention can be divided into two categories: individual psychological intervention and group psychological intervention.

- (1) Individual psychological intervention refers to interventions for individuals, focusing on their internal psychological processes and personality characteristics. Individual psychological intervention can take the form of psychological assessment, individual psychotherapy, etc., focusing on the individual's psychological needs and problems and formulating personalized intervention plans.
- (2) Group psychological intervention refers to the intervention for a group, aiming to improve the overall mental health level by changing the psychological environment and psychological interaction of group

members. Group psychological intervention can include forms such as group counseling, training, and support groups, and is characterized by its large scale and significant effect.

Several major theories and models have been widely used and researched in psychological interventions for radiotherapy patients, including: CBT cognitive behavioural therapy, psychodynamic therapy, positive thought-based stress reduction, and supportive expressive group therapy ^[4].

4. Assessment of psychological intervention effect

When assessing the effect of psychological intervention on cancer patients during radiotherapy, it is crucial to choose assessment indicators and methods reasonably. The selection of assessment indexes needs to take into account the diversity and complexity of patients' psychological status during radiotherapy, and commonly used assessment indexes include mental health level, anxiety and depression, life satisfaction, social support and so on. Among them, mental health levels can be assessed by tools such as the Disease Impact Rating Inventory (DLQI) and the Mental Health Questionnaire-12 (SF-12). Anxiety and depressed mood can be measured using the Hamilton Anxiety Scale (HAMA) and Hamilton Depression Scale (HAMD), among others. Life satisfaction can be assessed using the Life Satisfaction Scale (LSS). Social support can be measured using the Social Support Inventory (SSDI) ^[5-6].

Commonly used assessment methods include self-assessment scales, face-to-face interviews, observations, and psychometric tests. Self-assessment scale is a commonly used quantitative assessment method, which obtains information by filling out questionnaires by the patients themselves. An interview is a kind of assessment method to understand the patient's real feelings, and the researcher can ask further questions according to the patient's answers. Observation is an objective assessment method in which the researcher obtains information by observing the patient's behaviour and expression. A psychological test is a standardized assessment method, in which the researcher solves the psychological condition of the patient by completing a series of psychological test questions ^[7-8]. It is worth noting that in the process of selecting assessment indicators and methods, the reliability and validity of the indicators need to be considered comprehensively. Reliability refers to the consistency of the assessment tool across time and across different measures and requires a high degree of reliability to ensure the accuracy of the measurement results. Validity refers to whether the assessment tool can effectively measure the concepts to be measured and requires a high degree of validity in order to ensure the scientific validity and reliability of the study.

Through the selection and implementation of the above assessment indicators and methods, the changes and impacts on the mental health level, emotional state, life satisfaction and social support situation of cancer patients after receiving psychological intervention during radiotherapy can be comprehensively solved.

Several results have shown that anxiety and depressive symptoms are significantly reduced and self-esteem and self-efficacy are improved in radiotherapy patients after psychological interventions ^[9-10]. This suggests that psychological intervention during radiotherapy in oncology patients can effectively relieve psychological stress and improve mental health and quality of life. The average percentage of reduced anxiety and depressive symptoms and increased self-esteem and self-efficacy after psychological intervention reached 65% and 78% ^[11].

Among the patients who received psychological interventions, the effect of the interventions was more significant in female patients, suggesting that there may be some differences in the effect of psychological interventions by gender. Data from the study showed that the percentage of female patients with reduced anxiety and depressive symptoms and increased self-esteem and self-efficacy were higher than those of male patients, reaching 70% and 82%, respectively ^[12].

The age and education level of the patients who received the intervention had an impact on the effectiveness of the intervention, with younger and better-educated patients showing better mental health and quality of life indicators after the psychological intervention. The data showed that the proportion of patients younger than 40 years old with reduced anxiety and depressive symptoms and the proportion of patients with improved self-esteem and self-efficacy were higher than those older than 60 years old, at 68% and 76%, respectively. The percentage of reduced anxiety and depressive symptoms and increased self-esteem and self-efficacy were higher in patients with a bachelor's degree or higher education, reaching 71% and 83%, respectively^[13].

Thus, psychological interventions during radiotherapy for cancer patients can significantly improve their mental health and quality of life. At the same time, there may be some differences in the effect of psychological intervention among patients of different genders, ages and education levels. Further studies are still needed to get more accurate and reliable conclusions.

5. Conclusion and prospect

Psychological intervention during radiotherapy for cancer patients can significantly improve their mental health. Through individual and group psychological interventions, patients' anxiety and depression are improved, and psychological stress is relieved.

Different types of psychological intervention methods, individual psychological intervention and group psychological intervention, have achieved good results. Individual psychological intervention mainly helps patients solve individual psychological problems and improve self-adjustment ability through case analysis, cognitive behavioural therapy and deconstructive reconstruction. Group psychological intervention promotes communication and support among patients through psychological education, mutual support and psychological training, and thus enhances the patients' psychological resilience and ability to resist adversity. Individual psychological intervention and group psychological intervention complement each other and have a positive impact on the psychological health of oncology patients.

Psychological interventions during radiotherapy for cancer patients can effectively improve their psychological health, reduce their psychological pressure and enhance their quality of life. Future studies can further explore the effects of psychological interventions on different cancer types, treatment stages and individual characteristics, as well as optimize the implementation strategies of psychological interventions in order to help cancer patients achieve comprehensive psychological and physiological recovery^[13].

For follow-up research, advanced technological means such as biomarkers and neuroimaging can be combined to study in depth the mechanism of psychological intervention on physiological indicators and neurobehaviour of cancer patients and further reveal the mechanism of action of the intervention. The application of technology based on big data and artificial intelligence can achieve precise psychological intervention through deep learning of patients' personalized characteristics and treatment responses. Rapid development in this field will provide more personalized and precise psychological intervention programmes for oncology patients, expanding intervention methods and techniques, individualizing intervention strategies, providing online services, and combining multiple forms of psychological interventions in order to promote the psychological health of oncology patients during radiotherapy.

Disclosure statement

The authors declare no conflict of interest.

References

- [1] Breast Cancer Professional Committee of the Chinese Anti-Cancer Association. Chinese Anti-Cancer Association Breast Cancer Diagnosis and Treatment Guidelines and Norms (2021 Edition). *Chinese Cancer Journal*, 2021, 31(10): 954–1040.
- [2] Du J, Chen L, Liang H, 2023, Application Effect of Health Education and Psychological Intervention Based on Mind Mapping in Lung Cancer Patients Undergoing Radiotherapy. *Integrative Nursing in Chinese and Western Medicine*, 9(9): 45–48.
- [3] Zheng S, Zheng C, Liu W, 2022, Observation on the Application Effect of Exercise Psychosleep Nursing Intervention During Radiotherapy for Breast Cancer Patients. *China Cancer Clinics and Rehabilitation*, 29(06): 747–750.
- [4] Xia Y, Tan M, Liu L, et al., 2023, The Effect of Psychological Care Based on Affectionate Guidance on the Physical and Mental State of Patients Undergoing Radiotherapy for Thoracic Cancers. *Clinical Research*, 31(8): 179–182.
- [5] Fan Y, He N, 2023, Application Effect of Interactive Guidance Mode of Radiotherapy for Glioma Based on Radiotherapy Assistant Application. *Henan Medical Research*, 32(14): 2664–2668.
- [6] Zhang F, Fang F, Luo F, et al., 2023, Effects of Psychological Intervention Guided by the Sense of Disease Benefit on Psychological Distress and Cancer-Caused Fatigue in Patients Undergoing Radiotherapy for Oesophageal Cancer. *Journal of Clinical Psychosomatic Diseases*, 29(4): 122–127.
- [7] Li J, Li X, Zhang B, et al., 2023, Research Progress of Psychological Pain in Cancer Radiotherapy Patients. *Henan Medical Research*, 32(13): 2492–2496.
- [8] Chen H, Chen Y, 2023, Analysis of the Effect of Psychological Care on the Improvement of Psychological Anxiety State and the Influence of Sleep Quality in Oncology Radiotherapy Patients. *World Journal of Sleep Medicine*, 10(8): 1879–1881.
- [9] Zhou H, Wei S, Yang Q, et al., 2023, Effect of Image-Guided Radiotherapy Combined with Simultaneous Radiotherapy and Chemotherapy on Clinical Efficacy and Life Psychological Index of Locally Progressive Pancreatic Cancer. *Heilongjiang Medicine*, 47(9): 1029–1032.
- [10] Xu X, Jiao H, Jiang C, 2022, Analysis of the Impact of Psychological Care on Radiotherapy Patients with Malignant Cancers. *Psychological Monthly*, 17(8): 100–102.
- [11] Wang L, 2020, The Application of Healthcare-led Preventive Psychological Intervention in Radiotherapy for Oncology Patients and Its Effect on Negative Emotions. *China Primary Health Care*, 34(7): 109–111.
- [12] Zhang L, Chen M, 2021, Application of Nursing Intervention Based on Neuman's Theory in Nasopharyngeal Carcinoma Radiotherapy Patients. *Nursing Practice and Research*, 18(21): 3284–3288.
- [13] Xu C, Yang X, He Y, 2023, Effect of Group Psychological Care on the Psychological Status of Postoperative Patients with Oral and Maxillofacial Malignant Cancers Treated with Radiotherapy. *Integrative Nursing in Chinese and Western Medicine*, 9(9): 21–24.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.