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Effectiveness of Mindfulness-Based Cognitive Therapy on Quality of Life among Oral Cancer Patients Undergoing Chemotherapy and Radiotherapy

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ABSTRACT

Cancer is the second leading cause of death globally, with oral cancer representing a significant portion of head and neck cancers. It disproportionately affects developing nations, including Pakistan, where it is the second most common cancer. Oral cancer patients often endure treatment-related side effects, leading to reduced quality of life. Evidence suggests that mindfulness interventions, particularly mindfulness-based cognitive therapy, can improve quality of life by addressing psychological distress and promoting emotional resilience. **Objectives:** To assess the effectiveness of mindfulness-based cognitive therapy in improving the quality of life of oral cancer patients undergoing chemotherapy and radiotherapy. **Methods:** The literature review used various electronic databases: PubMed, Academia, Science Direct, Cumulative Index to Nursing and Allied Health Literature, and Google Scholar. The PRISMA flowchart approach documented the literature review process. We included 26 out of 294 studies that fulfilled inclusion criteria in the final review, which included the last five years, and researched the effects of mindfulness-based cognitive treatment on quality of life among oral cancer patients. Data were synthesized using quantitative methodologies to identify similar findings across studies. **Results:** Research indicates that mindfulness-based cognitive treatment significantly improves the quality of life for oral cancer patients receiving chemotherapy and radiotherapy. **Conclusions:** It was concluded that these findings provide baseline data for this study highlighting the significant impact of mindfulness-based cognitive therapy on improving the quality of life for patients with oral cancer receiving chemotherapy and radiotherapy.

INTRODUCTION

Cancer is the second foremost cause of death worldwide, responsible for almost one in every six deaths [1]. Every year, the world diagnoses approximately 18.1 million new cancer cases, leading to approximately 9.6 million deaths [2]. Research by Tufail and Wu highlights that cancer is the primary cause of mortality in a significant portion of the world, impacting 91 out of 172 nations [3]. Furthermore, projections by Wong estimate that by 2040, there will be 29.5 million new cancer cases and 16.3 million cancer-related deaths globally [4]. The sixth most frequent disease worldwide, oral cancer is rising rapidly in southern Asia. Annually, there are around 450,000 newly diagnosed cases of oral carcinoma globally. Furthermore, there has been a significant rise in the prevalence of oral cancer recently. Oral cancer is a major concern in public health worldwide [5]. Oral cancer is the most prevalent type of head and neck cancer, which accounts for 10% of all cancers. Smoking cigarettes, drinking alcohol, using tobacco products, and being infected with the human papillomavirus are all causes of oral cancer [6]. Approximately, 14,000 new instances of oral squamous cell carcinoma (OSCC) are reported each year in Pakistan with Karachi having one of the highest rates worldwide. The disease is in an advanced stage (III or IV) in almost fifty percent of these patients [7]. Pakistan ranks among the top ten tobacco consumers, with 46 percent of its

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population using gutka and paan (chewable betel nut products) daily. Nearly 56–80% of mouth cancer survivors suffer oral dysfunction with significant financial, social, and psychological effects on their quality of life [8]. The clinical course and management of oral cancer cause distress to patients. This condition and its management may result in the loss of bodily parts, scarring, alopecia, deformities, and weight variations, all of which can affect self-perception. Functional disability also affects swallowing, speaking, and social interactions. These side effects can significantly diminish patients' quality of life [9]. Mindfulness involves intentionally being present and nonjudgmentally addressing thoughts, feelings, and experiences. A decade of RCTs has tracked the effects of mindfulness-based therapies on anxiety, depression, psychological distress, and health-related quality of life among oral cancer patients [10].

This study aims to assess the effectiveness of mindfulness-based cognitive therapy in improving the quality of life of oral cancer patients undergoing chemotherapy and radiotherapy.

METHODS

Various search strategies were utilized for the literature review, drawing from multiple databases, including Academia, PubMed, Research Gate, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Google Scholar. Boolean operators (AND, OR, NOT) were applied on PubMed, along with a custom date range filter (2019-2024), yielding 26 articles. The most recent and relevant publications were selected from this pool, while those unrelated to the research topic were excluded. Similarly, peer-reviewed academic publications were searched and filtered for the same date range, and the results were 294 relevant articles. A comparable approach was employed for Research Gate and Google Scholar. Keywords such as mindfulness-based intervention, quality of life, oral cavity, head-and-neck, oral tumor, lip-and-mouth cancer, oropharyngeal cancers, chemotherapy, and radiotherapy were used to refine the search and identify pertinent studies. The initial search yielded 23,902 results. After applying the filter for duplicates, 15,804 were removed; further application removed 2,809 in five years. After studies screened eligibility in full-text 4,995, Filtering the citation and abstract reduced the results to 294. After reviewing the titles and abstracts, we excluded 268 and selected 26 for the final review, which is most relevant to our study. PRISMA chart was shown for this study (Figure 1).

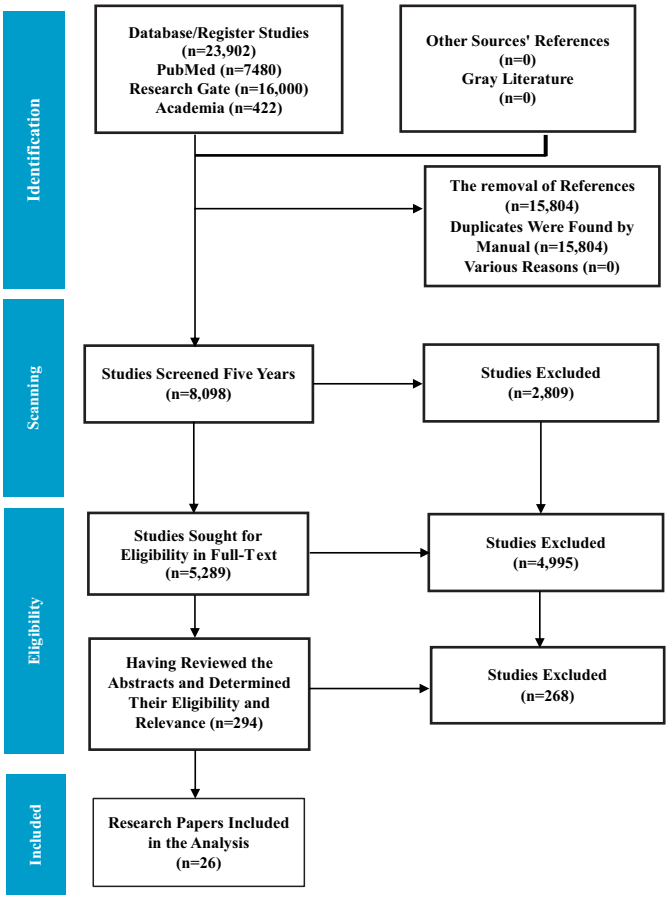

Figure 1: PRISMA flow chart for the study

RESULTS

From an initial search of 23,902 articles, 26 were selected for this study. Findings suggest that the effectiveness of Mindfulness-Based Cognitive Therapy (MBCT) on Quality of Life (QoL) among oral cancer patients undergoing chemotherapy and radiotherapy significantly impacts the QoL among oral cancer Patients. comprehensive information regarding the phases of the article search was presented (Table 1).

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Table 1: Maintain Information Articles

S.No	References	Country	Method	Sample Size	Objective	Result
1	[11]	Korea	Quasi-Experimental	61	The study looks at how a full mouth care program affects the oral health of people with head and neck cancer (HNC) who have been treated with radiation.	Dental specialists' complete oral care interventions enhanced HNC patients' oral health and QoL.
2	[12]	France	Cross-Sectional	72	The study assesses patient concerns about head and neck squamous cell carcinoma (HNSCC) treatment and long-term QOL.	HNSCC patients' quality of life improved when multidisciplinary teams identified patient requirements and managed persistent symptoms and psychosocial difficulties.
3	[13]	Singapore	Quasi-experimental	61	The study examined the initial impact of a program that teaches cancer survivors to practice mindfulness-based psychoeducation.	Cancer survivors considerably improved their abilities to relax, practice mindfulness, and feel psychologically well.
4	[14]	Germany	Retrospective Analysis	1,657	The study aimed to investigate oral mucositis impairments and how they affect post-treatment quality of life.	Standardizing early supportive management for oral mucositis promotes better post-therapy results and QoL for oral cancer patients.
5	[15]	United States	Randomized Controlled Trial	97	The main goal is to identify whether online or smartphone mindfulness therapies might reduce cancer patients' discomfort and improve QOL.	Well-powered efficacy studies could enlighten clinicians about implementing this scalable intervention to improve cancer patients' and carers' QOL.
6	[16]	Malaysia	Longitudinal Observational	76	This research aimed to determine the effect of oral cancer treatment on HRQOL in patients.	Oral cancer patients' HRQOL changes with surgery and various treatments.
7	[17]	United Kingdom	Prospective Clinical Cohort	5,511	The goal is to find out how people's HRQOL changes when they are told they have head and neck cancer.	Higher physical and social functioning had better survival.
8	[18]	Canada	Systematic Review	3053	To assess the correlation between mindfulness-based interventions (MBI) and the alleviation of anxiety severity in cancer patients.	Up to 6 months after the intervention, MBIs were linked to lower levels of anxiety and depression in people with cancer.
9	[19]	Iran	Quasi-Experimental	40	To examine how MBCT affected patients' cognitive function, illness adaptability, quality of life, and perceived stress levels throughout chemotherapy.	MBCT markedly enhanced perceived stress, sickness resilience, and QoL.
10	[20]	Saudi Arabia	Descriptive Cross-Sectional	148	The goal is to evaluate the mental and physical suffering, symptoms of depression, and social problems of patients with cancer undergoing radiotherapy.	There was a significant association ($P<0.05$) between the type of cancer patients had and their levels of physical suffering, distressing emotions, and depressive symptoms.

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11	[21]	Taiwan	Prospective Study	127	This study aimed to evaluate individuals' QoL and utility assessments following survival from HNC.	Survivors of cancer scored lower than average. Married patients had more utility than single patients.
12	[22]	Iran	Descriptive Analytical Cross-Sectional	205	The purpose of the research was to find out if stress, quality of life, and mindfulness were all related for cancer patients.	Cancer patients' QOL was affected by mindfulness and stress. Mindfulness may help cancer patients both directly and indirectly.
13	[23]	India	Prospective Longitudinal	130	This study aimed to identify the characteristics that influence the QoL of people with HNC.	HNC treatment and intervention should focus on survival and QoL during managed intervention and recovery.
14	[24]	Sri Lanka	Prospective Longitudinal	90	This study looked at the oral health-related quality of life (OHRQOL).	There were statistically remarkable changes in OHRQOL between the periods ($p<0.05$).
15	[25]	Pakistan	Analytical Cross-Sectional	250	To determine how various factors affect HNC patients' QoL.	Poor QoL is linked to psychological problems.
16	[26]	Pakistan	Cross-Sectional	79	This research aimed to assess OHRQoL.	Poor oral health after HNC treatment lowers QoL.
17	[27]	Netherlands	Randomized controlled Trial (RCT)	125	The purpose of this research was to forecast cancer patients' engagement with and success with the eMBCT program.	The study revealed that patient outcomes improved by adherence.
18	[28]	India	Prospective Study	150	The study assesses QoL to determine oral cancer patients' satisfaction with current treatment.	The results of this study show that oral cancer patients are happy with their existing treatment options.
19	[29]	Pakistan	cross-sectional	96	The study's goal is to examine the OHRQoL and the factors that are linked to it one year after cancer treatment.	The study found high mean OHRQoL scores in HNC.
20	[30]	Pakistan	cross-sectional	120	The study aimed to recognize the post-treatment problems met by OSCC clients.	Patients with tongue cancers highlighted significantly reduced scores for anxiety, mood,swallowing, and pain.

DISCUSSION

The study sought to evaluate the efficacy of MBCT in improving the QoL of oral cancer patients receiving chemotherapy and radiotherapy. The findings are consistent with prior studies and provide compelling evidence supporting the utility of MBCT as a non-pharmacological intervention for managing psychological issues and improving quality of life. The current study corroborates previous research highlighting the positive impact of MBCT on QoL. A systematic review demonstrating that mindfulness-based intervention significantly reduced depression anxiety in cancer patients. This result aligns with a study in Singapore and Canada that revealed the psychological benefits of MBCT and found that mindfulness-based psychoeducation improved relaxation and psychological well-being in cancer survivors [31, 32]. A notable similarity between this study and the research is the identification of improvements in cognitive function, illness adaptability, and stress reduction in cancer treatment [33]. Both studies also found a link between early supportive interventions and better quality of life after treatment, which is in line with this study's focus on using MBCT during active treatment phases [34]. Despite these similarities, studies that solely focused on physical health interventions showed some differences in outcomes. However, this study enhanced oral health-related quality of life due to dental care interventions for HNC patients. In contrast, the present study emphasizes the enhancement of psychological and emotional well-being through MBCT. Moreover, it underlines the importance of psychosocial therapies to

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counteract poor psychological outcomes in HNC patients. This study emphasizes the importance of MBCT [35]. This study highlights the need to incorporate MBCT into the care plans of oral cancer patients to address QoL challenges effectively. It also suggests the scalability of mindfulness-based interventions, as indicated by [36], can make them accessible to a broader population of cancer patients. Future research should explore the long-term effects of MBCT and its potential integration with other psychosocial and physical health interventions to provide a holistic care model.

CONCLUSIONS

It was concluded that the study underscores the significant role of mindfulness-based cognitive therapy (MBCT) in enhancing the quality of life for oral cancer patients undergoing chemotherapy and radiotherapy. This research validates prior evidence on the potential integration of care plans with a holistic approach to patient well-being. Future studies should investigate its long-term impacts and synergy with other interventions to optimize cancer care outcomes.

Authors Contribution

Conceptualization: RK
Methodology: YA, B
Formal analysis: RK
Writing review and editing: YA, B, AAJ

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

All the authors declare no conflict of interest.

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