



## Review Article

# The Efficacy of the Managing Cancer and Living Meaningfully (CALM) Intervention across the Cancer Trajectory: A Systematic Review and Meta-Analysis of Outcomes in Diverse Oncological Populations

Juliet Chachamma Paul<sup>1</sup> and S. Deesha<sup>2\*</sup> <sup>1,2</sup>JSS Academy of Higher Education & Research, Tamil Nadu, India

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## Abstract

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## Correspondence\*

deeshas@jssuni.edu.in

## ORCID

Juliet Chachamma Paul

<https://orcid.org/0009-0005-3490-5566>

S. Deesha

<https://orcid.org/0009-0008-7056-6508>

The Managing Cancer and Living Meaningfully (CALM) intervention is a manualized, brief psychotherapy designed to address the multidimensional distress associated with cancer. Grounded in an integrative theoretical framework, it systematically targets four domains: symptom management and communication, changes in self-concept and relationships, spiritual well-being and meaning, and mortality-related concerns. A substantial body of evidence from 2018 to 2025 confirms its efficacy. The seminal trial demonstrated significant reductions in depressive symptoms and death anxiety among patients with advanced cancer. Subsequent research has validated its transdiagnostic utility, showing effectiveness for specific sequelae such as fear of cancer recurrence, chemotherapy-related cognitive impairment, and cancer-related fatigue. Furthermore, studies support its cross-cultural applicability in diverse contexts and its adaptability to various delivery formats, including telehealth. The consistency of these findings across psychological, existential, and quality-of-life outcomes positions CALM as an evidence-based cornerstone of comprehensive psycho-oncological care.

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## I. INTRODUCTION

Cancer represents one of the most complex challenges in modern medicine, comprising a multitude of diseases characterized by abnormal cellular growth and the potential to spread throughout the body (Rodin *et al.*, 2018). This fundamental pathology emerges when cumulative genetic and epigenetic alterations disrupt normal cellular homeostasis, leading to uncontrolled proliferation through the evasion of natural cell death processes (Rodin & Hales, 2021). This process typically results in the formation of malignant tumors that progressively compromise tissue architecture and physiological function, though hematological malignancies such as leukemias and lymphomas demonstrate equally destructive potential through different pathological pathways (Rodin & Hales, 2021). The moment of cancer diagnosis represents a critical

juncture in an individual's life, typically initiating what clinical literature describes as an "existential crisis" or "psychobiological disruption," wherein patients confront not only immediate threats to physical health but also fundamental challenges to their personal identity, future aspirations, and understanding of life's meaning and purpose (Rodin *et al.*, 2018).

Epidemiological research consistently demonstrates the profound psychological burden associated with oncological diagnoses. Prevalence studies indicate that approximately 20–54% of cancer patients experience clinically significant psychological morbidity (Lo *et al.*, 2019; Caruso *et al.*, 2020). This distress manifests across multiple dimensions, including anxiety disorders, major depressive episodes, adjustment disorders, and pervasive existential concerns regarding mortality, legacy, and personal meaning (Rodin

*et al.*, 2018; Wang *et al.*, 2023). The psychological impact varies considerably across different demographic groups and cancer types, with certain populations facing unique distress profiles. For instance, fear of cancer recurrence is a particularly prevalent and debilitating concern among breast cancer survivors, often persisting long after active treatment has concluded (Wang *et al.*, 2023). Similarly, patients undergoing long-term endocrine therapy for breast cancer frequently report negative effects on emotional well-being and sleep quality, adding a chronic layer of distress to their cancer experience (Jia *et al.*, 2025).

The landscape of oncological disease is remarkably diverse, categorized primarily by tissue of origin and cellular characteristics. Carcinomas, which arise from epithelial cells lining internal organs and body surfaces, represent the most common forms of cancer globally. These include malignancies such as breast, prostate, lung, and colorectal cancers, each with distinct biological behaviors and clinical trajectories (Wulandari *et al.*, 2020). Beyond carcinomas, the cancer spectrum includes sarcomas originating from connective tissues such as bone and muscle, leukemias arising from blood-forming cells in the bone marrow, and lymphomas developing from cells of the immune system (Rodin & Hales, 2021). This histological diversity translates into a wide array of physical and psychological challenges. Breast cancer patients, for instance, frequently navigate complex issues related to body image, sexual functioning, and intimate relationships (Wang *et al.*, 2023; Jia *et al.*, 2025). Gastrointestinal cancer patients often contend with a severe and debilitating symptom burden, including cancer-related fatigue that profoundly impacts quality of life (Jing *et al.*, 2022), while esophageal cancer patients face unique psychosocial distress associated with swallowing difficulties (dysphagia), nutritional compromise, and social isolation, particularly during meals (Cai *et al.*, 2023).

Contemporary cancer management employs a comprehensive, multimodal approach that integrates several core therapeutic strategies. Primary physical interventions include surgical procedures aimed at removing localized tumors, chemotherapy utilizing cytotoxic drugs to destroy rapidly dividing cells throughout the body, and radiation therapy that uses high-energy beams to target and eliminate cancer cells in specific areas (Lynch *et al.*, 2023). In recent years, treatment arsenals have expanded to include increasingly sophisticated targeted therapies and immunotherapies. These novel approaches, such as those used for advanced non-small cell lung cancer, leverage specific molecular markers or stimulate the body's immune system to combat cancer cells, though they often introduce new and complex side effects that require careful management (Lynch *et al.*, 2023). These biomedical interventions are systematically supported by conventional psychological services, which recognize that comprehensive cancer care must address the multidimensional nature of patient suffering (Rodin *et al.*, 2018). Traditional mental health support in oncology has primarily encompassed supportive-expressive psychotherapy to help patients process

a wide range of emotions, cognitive-behavioral techniques (CBT) to identify and modify distressing thought patterns and behaviors, and mindfulness-based stress reduction (MBSR) to enhance present-moment awareness and emotional regulation (Zhang *et al.*, 2022). These established approaches focus principally on symptom reduction and strengthening adaptive coping mechanisms, providing an essential foundation for patients navigating the immense challenges of their illness (Lo *et al.*, 2019).

In recent years, the field of psycho-oncology has advanced beyond these conventional supports to develop more specialized therapeutic approaches specifically designed to address the unique existential and psychological challenges inherent in the cancer experience (Rodin & Hales, 2021). Among these innovative interventions, the Managing Cancer and Living Meaningfully (CALM) program has emerged as a significant evidence-based treatment modality (Rodin *et al.*, 2018). CALM is a manualized, semi-structured, brief psychotherapy originally developed for patients with advanced cancer, though its application has since expanded to include various cancer populations across different disease stages, including survivorship (Wang *et al.*, 2023; Jing *et al.*, 2022). The intervention is theoretically grounded in an integrative framework drawing from attachment theory, meaning-oriented therapy, and self-regulation theory (Rodin & Hales, 2021). It systematically addresses four central therapeutic domains: (1) management of physical symptoms and communication with healthcare providers; (2) adaptation to changes in self-concept and personal relationships; (3) cultivation of spiritual well-being and a sense of meaning and purpose; and (4) constructive engagement with issues of mortality, future-oriented concerns, and the preservation of realistic hope (Rodin *et al.*, 2018; Rodin & Hales, 2021).

## II. DISCUSSION

The empirical trajectory of the CALM intervention from 2018 to 2025 demonstrates its evolution from an efficacious therapy for advanced cancer into a versatile, transdiagnostic, and cross-culturally adaptable cornerstone of psycho-oncology.

### A. Foundational Efficacy and Core Mechanisms

The seminal randomized controlled trial by Rodin *et al.* (2018) established CALM's foundational efficacy, demonstrating significant and durable reductions in depressive symptoms and death anxiety among patients with advanced cancer. This study provided the robust evidence necessary for CALM's recognition as an evidence-based practice. Subsequent qualitative research, such as that by Lo *et al.* (2019), elucidated its core mechanisms of action, revealing that patients particularly value the safe, structured space to discuss mortality and navigate relational changes. The comprehensive manual by Rodin and Hales (2021) further solidified its theoretical grounding in attachment, meaning, and self-regulation theory, ensuring treatment fidelity while allowing for necessary clinical flexibility.

### B. Transdiagnostic Utility Across Cancer Types and Sequelae

Subsequent research has robustly validated CALM's transdiagnostic utility, demonstrating effectiveness beyond general distress in targeting specific cancer-related sequelae. Studies have shown its benefits for fear of cancer recurrence in breast cancer survivors (Wang *et al.*, 2023), chemotherapy-related cognitive impairment (Ding *et al.*, 2020), cancer-related fatigue in gastrointestinal cancers (Jing *et al.*, 2022), and psychological distress in esophageal cancer patients (Cai *et al.*, 2023). This expansion highlights CALM's capacity to address the distinct psychosocial profiles associated with different cancer types and treatment modalities. Recent protocols, such as that by Lynch *et al.* (2023) for patients receiving novel immunotherapies, indicate its ongoing adaptation to the evolving landscape of oncological treatment.

### C. Cross-Cultural Applicability and Adaptations

A key strength of CALM is its demonstrated cross-cultural applicability. Following the initial Canadian trials, successful implementations have been documented in Italy (Caruso *et al.*, 2020), China across multiple studies (Ding *et al.*, 2020; Zhang *et al.*, 2022; Jing *et al.*, 2022; Wang *et al.*, 2023), and Japan (Miyamoto *et al.*, 2022). These studies consistently show good acceptability and significant improvements in psychological and existential outcomes, suggesting that the core domains are resonant across cultures, though successful implementation requires thoughtful adaptation. For instance, Miyamoto *et al.* (2022) explicitly adapted discussions of mortality and relationships to align with Japanese cultural norms regarding indirect communication and family roles.

### D. The Indian Cancer Context

The application of CALM in the Indian cancer context presents a significant and necessary frontier for research and clinical implementation. India's psycho-oncology landscape is characterized by a high volume of cancer cases, often with late-stage presentations, and unique sociocultural factors, including strong familial interdependence, diverse spiritual and religious beliefs about illness and death, and varying levels of health literacy. The CALM framework's focus on communication with healthcare providers is highly relevant in a setting where patient autonomy may be mediated by family, and its domain addressing spiritual well-being and meaning aligns closely with the central role spirituality plays for many Indian patients. Preliminary work and clinical observations suggest that adapting CALM for India would require careful consideration of family-systems integration, nuanced engagement with local spiritual concepts, and delivery methods that address resource constraints, potentially leveraging trained non-specialist counselors or telehealth. Formal feasibility studies and clinical trials are needed to establish CALM's effectiveness and optimal adaptation within India's diverse and complex healthcare ecosystem.

### E. Innovations in Delivery and Future Directions

Research from 2022 to 2025 has showcased CALM's adaptability to innovative delivery formats. Zhang *et al.* (2022) demonstrated the enhancement of therapeutic engagement through virtual reality (VR)-enhanced CALM. More pragmatically, the study by Pang *et al.* (2023) established the feasibility and effectiveness of telehealth delivery during the COVID-19 pandemic, demonstrating that CALM can maintain psychological well-being remotely—a finding crucial for improving accessibility. Looking forward, the evidence suggests several key directions: larger-scale multicenter trials to strengthen generalizability, longer-term follow-up studies to assess sustained impact into survivorship, further development of cost-effective and scalable delivery models (including digital and group formats), and dedicated implementation science research to facilitate integration into standard oncology care pathways globally.

## III. CONCLUSION

The evidence robustly establishes the Managing Cancer and Living Meaningfully (CALM) intervention as a foundational element of comprehensive psycho-oncological care. CALM's structured, theoretically grounded framework (Rodin & Hales, 2021) effectively addresses the multidimensional distress inherent in the cancer experience. Empirical support confirms its efficacy in reducing core symptoms of depression and death anxiety in advanced disease (Rodin *et al.*, 2018), as well as in alleviating specific survivorship challenges, including fear of recurrence and cancer-related fatigue (Wang *et al.*, 2023; Jing *et al.*, 2022). Its demonstrated transdiagnostic utility and cross-cultural validity across diverse settings (Caruso *et al.*, 2020; Miyamoto *et al.*, 2022) underscore its broad applicability. By integrating the management of physical symptoms with profound existential and relational concerns, CALM moves beyond conventional supportive therapy to facilitate meaning-making and psychological adaptation. Future efforts should focus on the systematic implementation of CALM within standard oncology pathways to ensure equitable access. Further research into its long-term outcomes, cost-effectiveness, and application alongside novel therapies will continue to optimize patient-centered care. Ultimately, CALM exemplifies the essential integration of psychosocial support to address the full scope of patient suffering during and after cancer treatment.

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