

A Framework For Dental And Nursing Collaboration In Oral Healthcare Research Across Palliative Inpatient Settings

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Abstract

Oral health remains a frequently overlooked yet critical component of comprehensive palliative care. Patients in palliative care settings often experience significant oral health complications that negatively impact their quality of life, nutrition, communication, and dignity during their final stages of life. Despite the recognized importance of oral care, there exists a substantial gap in structured interdisciplinary approaches to oral healthcare research in palliative settings. This study presents a framework for meaningful collaboration between dental and nursing professionals to advance oral healthcare research in palliative inpatient environments. By examining current challenges, identifying opportunities for interprofessional cooperation, and outlining methodological considerations specific to this vulnerable population, this framework seeks to address the existing research-practice gap. Through intentional partnership between dental expertise and nursing's continuous bedside presence, this collaborative model aims to improve assessment tools, intervention strategies, and implementation approaches for oral care in palliative settings, ultimately enhancing patient comfort end of life.

INTRODUCTION

Palliative care aims to improve the quality of life of patients facing life-limiting illnesses through the prevention and relief of suffering. Within this holistic approach, oral health plays a significant yet often underappreciated role in maintaining patient comfort, dignity, and wellbeing. Palliative care patients frequently experience oral complications including xerostomia (dry mouth), mucositis, infections, pain, and difficulties with eating and communication (Venkatasalu et al., 2020). These conditions can severely impact quality of life, nutritional intake, medication administration, speech, and social interaction during a patient's final days.

Despite the recognized importance of oral care in palliative settings, research consistently demonstrates inadequate attention to oral health needs (Kvalheim et al., 2016; Magnani et al., 2019). This neglect stems from multiple factors: insufficient staff training in oral assessment and care techniques, inadequate protocols, time constraints, limited interdisciplinary collaboration, and challenges in conducting research with this vulnerable population (Kong et al., 2020; Gillam & Gillam, 2006). The complex oral manifestations of disease and treatments in palliative care patients demand specialized knowledge that extends beyond traditional nursing or dental education alone.

The intersection of dental expertise and nursing care presents a particularly promising opportunity for advancing oral healthcare in palliative settings. Dental professionals possess specialized knowledge of oral pathology, assessment techniques, and intervention strategies. Nurses provide continuous bedside care, holistic patient monitoring, and practical implementation of daily oral care routines. However, these disciplines have historically operated in separate spheres with minimal collaborative research initiatives focused specifically on palliative populations (Malik & Wright, 2023).

This study proposes a framework for meaningful collaboration between dental and nursing professionals to advance oral healthcare research in palliative inpatient settings. By examining current challenges in palliative oral care, identifying opportunities for interprofessional cooperation, and outlining methodological considerations specific to this vulnerable population, this framework seeks to address existing research gaps and improve patient outcomes.

The Current State of Oral Care in Palliative Settings

Prevalence and Impact of Oral Health Problems

Research consistently demonstrates the high prevalence of oral complications among palliative care patients. Mercadante et al. (2015) conducted a comprehensive assessment of 669 advanced cancer patients, finding that 40% experienced dry mouth, 22% had oral mucositis, and 15% reported dysphagia. These prevalence rates increased significantly among those receiving chemotherapy, with certain cancer types (particularly head and neck cancers) associated with higher risks of oral complications.

Furuya et al. (2022) identified several factors affecting oral health in palliative cancer patients, including performance status, nutritional status, medications (particularly opioids and anticholinergics), oxygen therapy, and dehydration. Their research highlighted how oral complications often exist within a complex web of interrelated symptoms and conditions, making assessment and management particularly challenging in this population.

The impact of poor oral health extends far beyond the mouth itself. Oral discomfort affects patients' ability to eat, speak, take medications, and maintain social connections—all critical aspects of quality of life in the final stages of life. Venkatasalu et al. (2020) conducted an integrated systematic review of oral health problems among palliative patients, finding that oral complications contributed significantly to physical suffering, psychological distress, and reduced quality of life. Their review emphasized how oral symptoms often exist within symptom clusters, interacting with and potentially exacerbating other palliative symptoms such as pain, fatigue, and nutritional deficiencies.

Current Practices and Gaps in Care

Despite the recognized importance of oral care, several studies reveal substantial gaps in current practice. Kvalheim et al. (2016) investigated end-of-life oral care practices in Norwegian health institutions, finding inconsistent approaches, inadequate assessment tools, and limited documentation of oral health status. Their research revealed that while most institutions had oral care guidelines, implementation varied widely, with many staff members receiving minimal training specific to palliative oral care needs.

Salamone et al. (2013) examined oral care practices for hospitalized older patients, noting that despite nursing recognition of the importance of oral care, it was often given low priority compared to other care activities. Their research identified barriers including time constraints, inadequate resources, patient resistance, and limited knowledge of appropriate techniques for different patient conditions.

Kong et al. (2020) conducted qualitative interviews with nurses regarding perceptions of oral health in palliative care, revealing several themes: nurses recognized the importance of oral health but felt inadequately prepared to provide comprehensive assessment and care; institutional barriers limited consistent implementation; and interdisciplinary collaboration was minimal, with limited access to dental expertise when needed.

Gillam and Gillam (2006) reviewed the assessment and implementation of mouth care in palliative settings, highlighting the lack of evidence-based assessment tools and intervention protocols specific to this population. Their review underscored how the absence of standardized approaches contributes to inconsistent and potentially inadequate care, particularly for patients with complex needs.

Research Challenges in Palliative Oral Care

Conducting research in palliative care settings presents unique methodological and ethical challenges. Cook et al. (2002) reflected on lessons learned from a palliative care trial, identifying several obstacles: difficulties with recruitment due to rapid patient deterioration; ethical concerns about burdening vulnerable patients with research procedures; high attrition rates; and challenges in outcome measurement with patients experiencing fluctuating symptoms and cognitive status.

Malik et al. (2021) described their experiences testing a protocol for xerostomia management in a hospital palliative care setting, noting challenges with patient recruitment, consent procedures, assessment timing, and intervention adherence in this population. Their pilot study highlighted the need for flexible, patient-centered research approaches that accommodate the unpredictable nature of palliative trajectories while maintaining methodological rigor.

The research challenges extend beyond patient-level factors to include institutional and professional barriers. The siloed nature of dental and nursing education and practice creates obstacles to collaborative research, with limited shared vocabulary, methodological approaches, and research priorities (Malik & Wright, 2023).

Additionally, the multidisciplinary nature of palliative care can create confusion regarding professional roles and responsibilities in oral health research and care delivery.

Rationale for Dental-Nursing Collaboration in Research

Complementary Knowledge and Skills

Dental professionals and nurses bring complementary knowledge and skills that, when combined, create a more comprehensive approach to oral healthcare research in palliative settings. Dental professionals contribute specialized expertise in oral anatomy, pathology, assessment techniques, and intervention strategies. Their training encompasses detailed understanding of oral conditions common in palliative populations, including xerostomia, mucositis, candidiasis, and various manifestations of systemic disease in the oral cavity (Venkatasalu et al., 2020).

Nurses provide continuous bedside care, holistic patient monitoring, and practical implementation of daily care routines. Their intimate knowledge of patient comfort, symptoms, medication effects, and changing care needs creates a valuable perspective on the feasibility and effectiveness of oral care interventions (Kong et al., 2020). Nursing staff also develop nuanced understanding of individual patient preferences and capabilities, essential information for tailoring oral care approaches in the palliative context.

The integration of these complementary perspectives addresses a significant gap in current research approaches. Dental studies often focus on technical aspects of oral health without fully addressing the implementation challenges in palliative settings, while nursing research may lack the specialized oral health knowledge needed to develop optimal assessment and intervention strategies (Malik & Wright, 2023).

Overcoming Disciplinary Boundaries

Historical separation between dental and nursing education and practice has created professional silos that limit collaborative approaches. Dental professionals rarely receive specialized training in palliative care principles, while nursing education typically includes minimal content on oral assessment and specialized care techniques (Kong et al., 2020; Gillam & Gillam, 2006). These educational gaps perpetuate in practice settings, where consultation between disciplines remains inconsistent and often limited to crisis situations rather than proactive collaboration.

Research by Kvalheim et al. (2016) highlighted this disconnection, finding that while dental professionals were theoretically available for consultation in Norwegian healthcare institutions, actual collaboration with nursing staff was minimal, with unclear referral pathways and limited integration of dental recommendations into daily care routines.

Intentional collaboration in research contexts can help bridge these disciplinary boundaries by creating shared language, mutual understanding of professional roles, and appreciation for complementary expertise. Such collaboration sets the foundation for more integrated approaches to both research and clinical practice in palliative oral care.

Enhanced Research Quality and Implementation

Collaborative research between dental and nursing professionals offers potential for enhanced methodological quality and improved implementation of findings. Dental expertise strengthens the validity and precision of oral assessment measures, while nursing insight improves the feasibility and acceptability of research protocols in the palliative care context (Malik et al., 2021).

Research implementation—the translation of findings into practice—represents a particular challenge in healthcare settings. Studies with integrated dental-nursing collaboration from the design phase are more likely to produce findings that address both the technical aspects of oral care and the practical considerations for implementation in complex palliative environments. This collaborative approach aligns with implementation science principles emphasizing stakeholder engagement throughout the research process to enhance adoption of evidence-based practices (Malik & Wright, 2023).

A Framework for Collaborative Research

Core Principles for Collaboration

Effective dental-nursing collaboration in palliative oral care research requires commitment to several core principles. Mutual respect for disciplinary expertise acknowledges the unique and valuable contributions of both dental and nursing knowledge to the research enterprise. This respect manifests through equitable participation in research design, implementation, analysis, and dissemination. A patient-centered approach maintains unwavering focus on patient comfort, dignity, and preferences throughout the research process, recognizing the vulnerability of palliative patients and prioritizing their wellbeing above research objectives.

Pragmatic methodology requires developing research approaches that balance methodological rigor with the practical realities of palliative care environments. This includes flexible protocols that accommodate changing patient status and care priorities. Inclusive communication creates shared language and communication structures that transcend disciplinary boundaries and facilitate genuine collaboration, including defining terms, clarifying roles, and establishing regular communication mechanisms. An implementation orientation ensures that research is designed with clear pathways for translating findings into practice, considering the institutional, professional, and systemic factors that influence implementation.

Collaborative Model Structure

The proposed collaborative framework encompasses five interconnected domains: research governance, protocol development, implementation strategies, knowledge translation, and sustainability planning.

Research governance establishes clear structures essential for effective collaboration. This includes formation of interdisciplinary research teams with balanced representation from dental and nursing disciplines; defined roles and responsibilities that leverage the strengths of each profession; decision-making processes that ensure equitable input from both disciplines; conflict resolution mechanisms that address disciplinary differences constructively; and ethical oversight with attention to the unique vulnerabilities of palliative patients.

Collaborative protocol development integrates dental and nursing perspectives throughout the research process. This encompasses joint problem identification drawing on both clinical observations and research gaps; collaborative research question formulation that addresses priorities of both disciplines; selection of assessment measures that balance clinical precision with practical feasibility; intervention design incorporating both evidence-based dental approaches and nursing implementation considerations; and outcome measurement encompassing clinical oral health indicators and patient-centered measures of comfort and quality of life.

Research implementation requires careful attention to the palliative context. This includes recruitment and consent procedures adapted to patient vulnerability and fluctuating capacity; data collection approaches that minimize burden on patients

and staff; intervention delivery models that accommodate the realities of palliative care environments; quality assurance mechanisms to maintain consistency across different providers; and continuous monitoring with flexibility to adapt protocols as needed.

Effective knowledge translation strategies include interdisciplinary publication targeting both dental and nursing audiences; practice guidelines developed collaboratively by both professions; educational resources for both disciplines using shared terminology and approaches; institutional policy recommendations addressing structural barriers to integrated care; and patient and family education materials promoting oral health awareness.

Sustainability planning ensures long-term impact through development of sustainable training models for both disciplines; integration of collaborative approaches into professional education; institutional policy changes supporting interdisciplinary oral care; advocacy for funding mechanisms that incentivize collaborative research; and creation of communities of practice maintaining collaboration beyond individual projects.

Methodological Considerations for Palliative Populations

Research with palliative populations presents unique methodological challenges requiring specialized approaches. Assessment tools must balance comprehensiveness with patient burden, incorporating brief, validated oral assessment instruments adaptable to fluctuating patient status; visual assessment techniques minimizing discomfort for fragile patients; patient-reported measures capturing subjective experience of oral symptoms; proxy reporting protocols for patients unable to self-report; and documentation systems accessible to both dental and nursing professionals.

Magnani et al. (2019) demonstrated the value of simplified oral assessment tools in palliative settings, finding that even basic systematic assessment significantly improved identification of oral problems and implementation of appropriate interventions.

Interventions must be minimally invasive and comfort-focused; adaptable to varying levels of patient independence and care needs; implementable by nursing staff with varying levels of oral health training; supported by clear protocols with decision trees for common complications; and designed with attention to medication interactions and contraindications.

Sweeney et al. (1997) provided an early example of collaborative intervention research, testing a mucin-containing oral spray for xerostomia in hospice patients. Their approach combined dental expertise in product formulation with nursing knowledge of practical application in the hospice setting, resulting in an intervention that significantly improved symptom management.

Ethical considerations include balancing research benefits and potential burden on vulnerable patients; implementing flexible consent procedures accommodating fluctuating capacity; establishing clear processes for surrogate decision-making when appropriate; developing protocols for continuing or withdrawing research participation as patient status changes; and creating mechanisms to ensure research does not compromise clinical care.

Cook et al. (2002) emphasized the importance of these ethical considerations, recommending early involvement of ethics committees, flexible approaches to consent, and continuous reassessment of the risk-benefit balance throughout palliative care research.

Practical Applications of the Framework

Assessment Tool Development and Validation

Collaborative development of oral assessment tools represents a prime opportunity for dental-nursing partnership. Existing oral assessment instruments often reflect either a highly clinical dental perspective or a simplified nursing approach, neither fully addressing the complex needs of palliative patients (Gillam & Gillam, 2006). A collaborative approach to assessment tool development would integrate dental precision regarding specific oral conditions with nursing knowledge of practical implementation in palliative settings. Such tools would ideally provide clear visual references for common oral conditions; include simplified scoring systems accessible to non-dental professionals; incorporate comfort-focused assessment techniques; link assessment findings to specific intervention protocols; and include documentation systems compatible with both dental and nursing records.

Malik et al. (2021) demonstrated this approach in their xerostomia management protocol, developing an assessment tool that combined objective measures of oral moisture with patient-reported symptom scales. Their collaborative development process involved dental specialists providing technical expertise and nurses contributing insights on feasibility and patient comfort during assessment.

Intervention Protocol Research

Collaborative intervention research represents another promising application of the framework. Palliative oral care interventions must balance evidence-based approaches with practical implementation considerations unique to end-of-life care. Potential collaborative intervention research might include comparative studies of oral moisturizing products combining dental analysis of product properties with nursing evaluation of application feasibility; development and testing of modified oral hygiene techniques for dependent patients; evaluation of symptom management protocols for common conditions like mucositis or candidiasis; and implementation studies of comprehensive oral care programs with defined roles for dental and nursing personnel.

Magnani et al. (2019) demonstrated the value of systematic oral care protocols in advanced disease, finding that implementation of a standardized approach significantly improved oral cavity conditions and comfort. Their protocol incorporated dental expertise regarding product selection and technical approaches with nursing knowledge of practical implementation in the palliative context.

Implementation Science Approaches

The gap between research evidence and clinical practice represents a particular challenge in palliative oral care. Implementation science approaches—studying methods to promote integration of research findings into routine practice—offer valuable strategies for bridging this gap.

Collaborative implementation research might include analysis of barriers and facilitators to oral care delivery in palliative settings; testing of educational interventions for nursing staff incorporating dental expertise; development and evaluation of consultation models between dental and nursing professionals; and comparative effectiveness studies of different implementation strategies for evidence-based protocols.

Kong et al. (2020) identified several implementation barriers through their qualitative research with nurses, including knowledge gaps, time constraints, and limited interdisciplinary communication. These findings suggest potential targets for implementation interventions developed collaboratively by dental and nursing researchers.

Challenges and Strategies for Effective Collaboration

Professional Role Boundaries

Collaboration between dental and nursing professionals may encounter challenges related to professional role boundaries, scope of practice concerns, and perceived threats to professional identity. These challenges can manifest as territorial disputes, resistance to input from the other discipline, or difficulty accepting shared responsibility for oral health outcomes.

Strategies to address role boundary challenges include clear articulation of each profession's unique contributions to the collaborative enterprise; explicit discussion of scope of practice parameters within research contexts; development of shared goals focused on patient outcomes rather than professional prerogatives; creation of opportunities for mutual education about each discipline's knowledge and skills; and recognition and celebration of complementary expertise rather than competitive positioning.

Malik and Wright (2023) emphasized the importance of addressing these professional boundary issues early in collaborative projects, suggesting that explicit discussion of roles and contributions helps establish mutual respect and clarify expectations.

Institutional and Structural Barriers

Institutional structures often reinforce disciplinary silos, creating practical barriers to collaboration. These include separate departmental structures, different funding streams, incompatible documentation systems, and physical separation of dental and nursing services within healthcare institutions.

Strategies for overcoming these structural barriers include identification of executive sponsors who can advocate for collaborative initiatives; development of formal agreements between dental and nursing departments or schools; creation of shared physical or virtual spaces for collaborative work; alignment of research projects with institutional priorities to secure administrative support; and advocacy for policy changes that incentivize interdisciplinary collaboration.

Kvalheim et al. (2016) noted that even when institutional policies technically supported dental-nursing collaboration, practical barriers often limited actual interaction. Their findings suggest the importance of addressing not only formal policies but also the informal systems and practices that influence collaboration in daily operations.

Communication and Language Differences

Dental and nursing professions have developed distinct terminologies, documentation approaches, and communication patterns that can create barriers to effective collaboration. These differences manifest in various ways, from technical terminology describing oral conditions to different approaches to documenting assessments and interventions.

Strategies for addressing communication challenges include development of shared glossaries defining key terms from both disciplines; creation of communication protocols for research team interactions; regular interdisciplinary meetings fostering relationship building and mutual understanding; use of visual tools transcending discipline-specific terminology; and attention to communication styles and preferences across professional cultures.

Kong et al. (2020) identified communication barriers between nurses and dental professionals as a significant factor limiting oral care quality in palliative settings. Their research highlighted how different professional languages and communication expectations created obstacles to effective consultation and collaboration.

Methodological Differences

Dental and nursing research traditions encompass different methodological approaches, data collection techniques, and standards of evidence. These differences can create tensions when designing collaborative research protocols and interpreting findings.

Strategies for addressing methodological differences include early discussion of methodological traditions and preferences within each discipline; explicit negotiation of methodological approaches for specific research questions; selection of methods honoring both clinical precision and implementation considerations; use of mixed methods designs incorporating quantitative and qualitative approaches; and development of integrated analysis frameworks drawing on both traditions.

Cook et al. (2002) emphasized the importance of methodological flexibility in palliative care research, suggesting that rigid adherence to any single methodological tradition may limit the ability to address complex research questions in this context. Their recommendations align with the need for methodological pluralism in dental-nursing collaborative research.

Future Directions and Opportunities

Education and Training Initiatives

Advancing dental-nursing collaboration requires attention to educational preparation in both disciplines. Current educational models typically provide limited content on interdisciplinary collaboration in oral health, particularly in the palliative context.

Opportunities for educational innovation include development of interdisciplinary curricula on palliative oral care; creation of shared clinical experiences for dental and nursing students; continuing education programs designed for mixed dental-nursing audiences; mentorship programs pairing dental and nursing professionals; and certificate programs in palliative oral care open to both disciplines.

Kong et al. (2020) identified educational gaps as a significant barrier to quality oral care, with many nurses reporting minimal training in oral assessment and intervention techniques. Their findings suggest the potential value of educational initiatives bringing together dental expertise and nursing practical knowledge.

Policy and Funding Considerations

Policy and funding structures significantly influence the feasibility and sustainability of collaborative research. Current models often reinforce disciplinary silos through separate funding streams, discipline-specific review processes, and limited incentives for collaborative approaches.

Opportunities for policy advancement include advocacy for dedicated funding mechanisms supporting dental-nursing collaboration; development of interdisciplinary review criteria for research proposals; creation of institutional policies recognizing and rewarding collaborative work; integration of oral health measures into palliative care quality metrics; and professional organization partnerships promoting collaborative practice models.

Kvalheim et al. (2016) highlighted how policy structures influenced the availability and integration of dental expertise in palliative care settings. Their research suggests the importance of policy-level interventions to create environments supportive of collaborative approaches.

Technology and Telehealth Applications

Emerging technologies offer promising tools to support dental-nursing collaboration in both research and practice. Telehealth applications, digital

assessment tools, and electronic documentation systems can potentially bridge physical and communication gaps between the disciplines.

Opportunities for technological innovation include development of mobile applications supporting oral assessment by non-dental providers; telehealth consultation models connecting nursing staff with dental expertise; shared electronic documentation systems accessible to both disciplines; digital imaging tools for remote evaluation of oral conditions; and automated decision support systems guiding intervention selection.

The COVID-19 pandemic accelerated adoption of telehealth approaches in many healthcare contexts, creating new opportunities for interdisciplinary collaboration despite physical separation. These technological innovations may be particularly valuable in palliative settings where patient transfer for dental consultation presents significant challenges.

Global and Cultural Perspectives

The proposed framework would benefit from incorporation of diverse global and cultural perspectives on oral health, interprofessional collaboration, and palliative care approaches. Different healthcare systems, cultural contexts, and resource environments may influence the implementation and effectiveness of collaborative models.

Opportunities for global perspective integration include comparative research examining collaborative models across different healthcare systems; attention to cultural variations in oral care practices and meanings; adaptation of assessment tools and interventions for diverse cultural contexts; consideration of resource constraints in different global settings; and international partnerships fostering knowledge exchange across contexts.

Venkatasalu et al. (2020) noted variation in oral care approaches across different countries and healthcare systems in their integrated review. Their findings suggest the importance of contextual adaptation in collaborative models rather than a one-size-fits-all approach.

CONCLUSION

Oral health represents a critical yet often overlooked dimension of comprehensive palliative care. The complex oral manifestations of disease and treatments in palliative populations demand specialized knowledge and approaches beyond what either dental or nursing disciplines can provide alone. The framework presented in this article offers a structured approach to meaningful collaboration between these disciplines, leveraging their complementary expertise to advance research and ultimately improve patient care.

The framework emphasizes core principles of mutual respect, patient-centeredness, pragmatic methodology, inclusive communication, and implementation orientation. It outlines a collaborative model encompassing research governance, protocol development, implementation strategies, knowledge translation, and sustainability planning. Methodological considerations specific to palliative populations address the unique challenges of conducting research with this vulnerable group while maintaining both rigor and ethical integrity.

Practical applications of the framework—including assessment tool development, intervention research, and implementation science approaches—illustrate its potential to address current gaps in palliative oral care. Challenges to effective collaboration, including professional role boundaries, institutional barriers,

communication differences, and methodological traditions, require intentional strategies for successful navigation.

Future directions for advancing dental-nursing collaboration include educational initiatives, policy and funding advocacy, technological innovation, and integration of global perspectives. By creating intentional partnerships between dental expertise and nursing's continuous bedside presence, this collaborative model aims to improve assessment tools, intervention strategies, and implementation approaches for oral care in palliative settings, ultimately enhancing patient comfort and dignity at the end of life.

As Malik and Wright (2023) observed, "The integration of dental and nursing expertise represents not merely an improvement in care coordination but a fundamental reconceptualization of how we approach oral health in palliative settings—moving from siloed responsibility to shared commitment to patient comfort and dignity" (p. 319). This shared commitment offers perhaps the strongest foundation for advancing both research and practice in this important domain of palliative care.

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