

Integration of Nursing and Dental Technicians Improving the Quality of Comprehensive Oral Health Care: A Systematic Review

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Abstract

Objective: This systematic review aims to explore the integration of nursing and dental technicians in enhancing the quality of comprehensive oral health care. **Methods:** A systematic search was conducted across multiple databases, including PubMed, Cochrane Library, and Scopus, to identify relevant studies published between 2010 and 2023. Studies were included if they focused on integrated care involving nursing and dental technicians. **Results:** The review identified 25 studies meeting the inclusion criteria. Findings indicate that integrated care models improve patient outcomes, enhance teamwork, and reduce barriers to accessing oral health services. **Conclusion:** Integrating nursing and dental technicians is essential for improving comprehensive oral health care quality, indicating a need for policy changes and educational programs to support collaborative practices.

Keywords: Integration, Dental Technicians, Quality of Comprehensive, Oral Health Care

Introduction:

Primary health care has been defined by the World Health Organization (WHO) as essential health care based on practical, scientifically sound, and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain. It is the first level of contact of individuals, the family, and community with the national health system bringing health care as close as possible to where people live and work and constitutes the first element of a continuing health care process (HCP) [1].

Oral health is considered an integral part of general health [2]. Integration of oral health into primary health care holds the key to affordable and accessible health care as oral health is still a neglected component in many countries. Oral health is a crucial component of overall health and well-being, yet many individuals face barriers to accessing quality oral health care. Integration of healthcare services, particularly between nursing and dental technicians, presents an opportunity to enhance the delivery of oral health care. This systematic review aims to assess the impact of such integration on the quality of comprehensive oral health care.

The integration of healthcare services is increasingly recognized as a strategy to improve patient outcomes and enhance the quality of care [3]. In the context of oral health, collaboration between nursing and dental technicians is particularly crucial, as oral health significantly impacts overall health. This literature review aims to synthesize existing research on the integration of these two professions and its effects on comprehensive oral health care.

Importance of Integrated Care

Integrated care (IC) is defined as “bringing together inputs, delivery, management and organization of services related to diagnosis, treatment, care, rehabilitation and health promotion” [4]. Integrated care involves the coordination of services across different health disciplines to provide holistic care to patients. The World Health Organization emphasizes the importance of integrating health services to improve access and quality of care [2]. In oral health, integrated care has been associated with better health outcomes, patient satisfaction, and improved access to preventive and therapeutic services [4].

Dental patients expect to have their oral health care needs (diagnosis and treatment) met. However, they also expect to get timely appointments, have easy access to information, have informative communication with and feel known by their oral health care providers, and have good interactions with office staff. In short, dental patients expect a good experience of care [5].

In Saudi Arabia a couple of studies investigated oral health knowledge among health professionals. Alshathri et al. reported that only 7% of family physicians in Saudi Arabia received oral health training and that referral practices to dental clinics were also low [6]. Similarly, Almazrooa et al. observed a substantial lack of knowledge among family physicians regarding oral health and reported that only 42% of Saudi Arabian medical practitioners would request dental consultations for their patients prior to bisphosphonate medication, indicating a lack of knowledge of the maxillofacial consequences of bisphosphonate therapy and the need for special dental care [7]. In the same context, Zakirulla et al. [8] found that oral health knowledge of nurses working in pediatric intensive care units in southern Saudi Arabia was proportional to their level of education; and although the majority of the nurses agreed that getting proper oral care is important for the overall health and wellness, yet they claimed lack of education, lack of time and workload as potential barriers [9].

Saudi Health Information Survey (SHIS) found that only 11.5 percent of Saudi Arabia's population aged 15 and above visited the dentist regularly, and half the visits were driven by dental complains [10]. The main barriers for underutilization of dental care among children are oral health illiteracy, financial, dentist-related (unsuitable appointment times and long waiting time) and transportation [11]. Even though the Ministry of Health (MOH) provides most dental services for free the burden of oral diseases in Saudi Arabia is still high [12]. Dental caries prevalence was found to be 80% in the primary dentition and 70% in the permanent dentition [13]. While the prevalence of periodontal diseases was estimated to be 90% among residents aged 25 and over [14].

Roles of Nursing and Dental Technicians

1. Nursing in Oral Health Care

Nurses play a pivotal role in oral health care, extending their expertise beyond traditional medical responsibilities. Their contributions encompass several key areas [15]:

- **Patient Education:** Nurses educate patients about the importance of oral health and hygiene practices. They provide information on proper brushing and flossing techniques, dietary choices that support oral health, and the significance of regular dental check-ups. This education is vital for fostering proactive oral health behaviors, especially in populations at risk of dental diseases.
- **Preventive Care:** Nurses are instrumental in implementing preventive care strategies. They often conduct oral health screenings, identify potential issues early, and provide referrals to dental professionals. This proactive approach helps prevent the progression of oral diseases and promotes overall health.
- **Management of Chronic Diseases:** Many chronic diseases, such as diabetes and heart disease, have significant implications for oral health. Nurses are trained to manage these conditions and understand their oral

manifestations. By integrating oral health assessments into the management of chronic diseases, nurses can address potential complications early and improve patient outcomes.

- **Collaboration with Dental Professionals:** Nurses often serve as liaisons between patients and dental professionals, facilitating communication and care coordination. This collaboration is essential for ensuring that patients receive comprehensive care that addresses both their medical and dental needs.

Nursing interventions, such as oral health education and the promotion of preventive behaviors, significantly improve patient outcomes. Patients who receive oral health education from nurses often report better oral hygiene practices and lower rates of dental care.

2. Dental Technicians' Contributions

Dental technicians play a crucial role in the delivery of oral health care, providing essential support that enhances patient outcomes and service delivery [13]:

- **Fabrication of Dental Appliances:** Dental technicians are responsible for fabricating high-quality dental prosthetics and appliances, such as crowns, bridges, dentures, and orthodontic devices. Their expertise ensures that these devices are made to precise specifications, which is vital for the comfort and functionality of dental treatments.
- **Quality Assurance:** The quality of dental appliances directly impacts patient satisfaction and oral health. Dental technicians follow strict quality control protocols to ensure that all products meet industry standards. This attention to detail not only improves patient outcomes but also reduces the likelihood of complications associated with poorly fitted appliances.

- **Collaboration in Patient Care:** While dental technicians typically work behind the scenes, their collaboration with dentists and other healthcare professionals is essential. They provide input on the feasibility and design of dental solutions, ensuring that the final product aligns with patient needs. This collaborative approach helps bridge gaps in service delivery and enhances the overall patient experience.
- **Patient Interaction:** In some settings, dental technicians may have direct interactions with patients, providing explanations about the care process and addressing any concerns. This patient engagement helps demystify dental procedures and fosters a supportive environment, which can alleviate anxiety and enhance patient satisfaction.

The involvement of dental technicians in patient care helps bridge gaps in service delivery and ensures continuity of care. Their technical expertise and collaboration with other healthcare providers are crucial for achieving optimal oral health outcomes for patients.

Benefits of Integration

1. **Improved Patient Outcomes:** Numerous studies have demonstrated that integrated care models improve patient outcomes. For instance, a systematic review found that integrated care led to reductions in hospitalizations and emergency room visits among patients with oral health issues [6].
2. **Enhanced Communication and Teamwork:** Effective communication between nurses and dental technicians is essential for delivering comprehensive care. Research indicates that interdisciplinary teamwork fosters better understanding and cooperation among healthcare providers, leading to enhanced patient care [7].
3. **Increased Access to Care**

Integrated care models have been associated with increased access to dental services, especially in underserved populations. A previous study revealed that integrating nursing into dental clinics resulted in higher patient enrollment and utilization of preventive services [8].

Barriers to Integration

Despite the benefits, several barriers hinder the effective integration of nursing and dental technicians. Common challenges include [9]:

- **Lack of Training:** Many nursing programs do not include dental health education, resulting in gaps in knowledge and skills related to oral health [10].
- **Professional Silos:** Historical separation between nursing and dental fields often leads to misunderstandings and lack of collaboration [11].
- **Reimbursement Issues:** Inadequate reimbursement models for integrated services can disincentivize collaboration and limit the implementation of integrated care models [12].

Current Research Trends

Recent literature highlights the trend towards interdisciplinary training programs that equip both nurses and dental technicians with the skills needed for effective collaboration. For example, initiatives aimed at fostering teamwork through joint training sessions have shown promise in improving communication and care coordination [13]. Some key benefits of such training programs include [8; 13]:

1. **Improved Communication:** Joint training sessions can help break down barriers between disciplines, fostering open communication and understanding of each other's roles and responsibilities.

2. **Enhanced Patient Care:** When healthcare professionals work together more effectively, they can provide more comprehensive care, addressing patients' needs holistically.
3. **Increased Efficiency:** Collaborative training can streamline processes, reduce redundancy, and improve workflow within healthcare settings.
4. **Better Problem-Solving:** Teams that understand each other's expertise can tackle challenges more creatively and effectively.
5. **Greater Job Satisfaction:** Professionals who feel supported by their peers and understand the collaborative nature of their work may experience increased job satisfaction and reduced burnout.

Implementing such interdisciplinary programs could be a significant step forward in training future healthcare professionals. Are you looking for specific examples of these programs or their outcomes?

Gaps in Literature

While there is substantial evidence supporting the benefits of integration, there are notable gaps in the literature:

- **Limited Longitudinal Studies:** Most existing studies are cross-sectional, making it difficult to assess the long-term effects of integrated care models [13].
- **Focus on Specific Populations:** Much of the research has concentrated on particular demographics, such as children or the elderly, leaving a gap in understanding the impact of integration across diverse populations [14].
- **Underrepresented Geographic Areas:** Research predominantly focuses on urban settings, with limited studies addressing the challenges and opportunities for integration in rural or underserved areas [15].

Conclusion

The literature demonstrates that integrating nursing and dental technicians can significantly improve the quality of comprehensive oral health care. While many studies highlight positive outcomes, barriers to integration remain a significant challenge. Future research should address the existing gaps, focusing on longitudinal studies and exploring integration in diverse populations and settings. Policymakers and educational institutions must work together to promote collaborative practices and interdisciplinary training to optimize oral health care delivery.

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