

Dental Auxiliaries and Their Roles in Modern Oral Healthcare: A Comprehensive Review

Dr. Nagendran Jeyavel¹, Dr. Sharmilla Duraisamy², Sowmiya³, Sona⁴, Sneha⁵

¹ *Hod and Professor, Department of Pediatrics and Preventive Dentistry Rvs Dental College and Hospital, Affiliated to the Tamil Nadu Dr.M.G.R Medical University.*

² *Senior Lecturer Department of Pediatrics and Preventive Dentistry Rvs Dental College and Hospital, Affiliated to the Tamil Nadu Dr.M.G.R Medical University.*

^{3,4,5} *Intern's - Rvs Dental College and Hospital, Affiliated to the Tamil Nadu Dr.M.G.R Medical University.*

Abstract—Dental auxiliaries are essential members of the oral healthcare team and contribute to prevention, clinical assistance, infection control, restorative support, and service delivery efficiency. As oral health systems face workforce shortages, growing demand, and increasing technological complexity, the role of auxiliaries has become more important in both clinical and public health settings. This review summarizes the main categories of dental auxiliaries, their roles in modern practice, the value of skill mix models, and the challenges related to training, regulation, and utilization. It also highlights the growing relevance of digital dentistry, expanded functions, and standardized workforce planning. Overall, dental auxiliaries improve access, productivity, and quality of care when integrated into well-structured dental teams.

Index Terms—dental auxiliaries; dental assistants; dental hygienists; dental therapists; dental laboratory technicians; oral health workforce; infection control

I. INTRODUCTION

Effective oral healthcare depends on a coordinated dental team in which each member contributes specific skills and responsibilities. Dental auxiliaries are trained professionals who support dentists in delivering preventive, restorative, diagnostic, and administrative care, thereby improving efficiency and access to services [1,2].

The dental workforce has increasingly shifted toward skill mix models, where routine and supportive tasks are delegated to appropriately trained personnel. This approach improves productivity, reduces clinical

burden on dentists, and can improve access to care in underserved areas [1,2,]

Dental auxiliaries are commonly classified into dental assistants, dental hygienists, dental therapists, and dental laboratory technicians [1,2]. Each group contributes differently to patient care, prevention, and practice efficiency.

II. DENTAL ASSISTANTS

Dental assistants provide chairside support during clinical procedures and also handle important administrative and infection control tasks. Their duties include preparing instruments, assisting with treatment, maintaining patient records, receiving patients, and ensuring that the operatory is ready for the next case [3,4].

Infection prevention is one of the most critical responsibilities of dental assistants. They are involved in sterilization of instruments, surface disinfection, safe waste disposal, and use of personal protective equipment, all of which help reduce the risk of cross-contamination [5,6,7]

III. DENTAL HYGIENISTS

Dental hygienists are primarily prevention-oriented oral health professionals. Their main responsibilities include scaling, polishing, oral hygiene instruction, fluoride application, periodontal maintenance, and patient risk assessment [8,9].

Dental hygienists are especially valuable in the prevention of dental caries and periodontal disease

through patient education and behavior change support. They often counsel patients on plaque control, nutrition, smoking cessation, and home care practices [8,9].

In many health systems, hygienists are increasingly integrated into team-based care models that emphasize risk-based prevention, ongoing maintenance, and community outreach [10,11].

IV. DENTAL THERAPISTS

Dental therapists are trained to provide selected preventive and restorative services, often under the supervision of a dentist depending on local regulations. Their scope commonly includes fillings, sealants, preventive care, pulp therapy in primary teeth, and simple extractions in some jurisdictions [12,13,14].

Their role is especially significant in underserved, rural, and school-based settings. Evidence from global and regional studies shows that dental therapists can improve service coverage and reduce unmet treatment needs among children and other vulnerable groups [15].

There has been ongoing debate about their scope of practice, supervision requirements, and integration into existing dental systems [15,16].

V. DENTAL LABORATORY TECHNICIANS

Dental laboratory technicians fabricate prosthetic and restorative devices such as crowns, bridges, dentures, splints, and orthodontic appliances. They are essential to the successful production of accurate and functional prostheses, and they work closely with clinicians to ensure that restoration design and fit meet patient needs [17,18].

The role of the dental technician has become more technologically advanced with the expansion of digital workflows and CAD/CAM systems. Digital scanning, virtual design, and computer-aided manufacturing can improve accuracy, standardization, and turnaround time in laboratory work [19,20].

VI. EXPANDED FUNCTION AUXILIARIES

Expanded Function Dental Auxiliaries (EFDAs) are trained to perform delegated clinical tasks beyond traditional chairside support. These may include

placing restorations, taking impressions, fabricating temporary crowns, and completing other restorative or preventive tasks depending on local regulations [21].

Evidence suggests that expanded function auxiliaries can maintain acceptable standards of care when properly trained and supervised [2,7]. Their use is closely linked to workforce flexibility and improved productivity, particularly in systems seeking to maximize access while managing costs [11,7].

VII. INFECTION CONTROL

Infection control remains one of the most important areas of responsibility for dental auxiliaries, especially dental assistants. Their role includes instrument sterilization, surface disinfection, handling of contaminated materials, PPE use, and safe disposal of medical waste [4,5,7].

Dental settings have a higher risk of microbial transmission because procedures frequently involve aerosol generation, sharp instruments, and contact with saliva and blood [7]. This is why infection control training is not optional but essential for all auxiliary personnel involved in patient care [4,7].

VIII. PREVENTIVE AND COMMUNITY CARE

Dental auxiliaries are especially important in preventive and community oral health programs. Their work may include oral hygiene education, dietary counseling, fluoride application, sealant campaigns, and school-based preventive services [8,9].

Community-based oral health programs led by auxiliaries can help reduce inequalities in oral health outcomes. In many countries, auxiliaries are deployed in public health systems, rural outreach initiatives, and school health services to extend care to populations that may not regularly visit a dentist [11,13,14].

IX. ACCESS AND WORKFORCE

One of the strongest reasons for integrating dental auxiliaries into oral health systems is their impact on access. Global oral health workforce data show marked regional and income-related disparities in the distribution of dental personnel [11,19].

In India and similar settings, auxiliary use has been shown to be common, but formal training and certification may still be limited [11,28,29]. This

means that many auxiliaries are informally trained on the job rather than through structured educational programs [11].

Auxiliaries are also valuable because they allow dentists to focus on advanced procedures such as surgery, prosthodontics, and implant-related care [1,19].

X. DENTISTRY IN AUSTRALIA: WORKFORCE TRENDS AND ACCESS CHALLENGES

Primary care dentistry serves as the first point of contact for individuals within the dental healthcare system and mainly focuses on preventing and treating common oral diseases such as dental caries and periodontal disease. In Australia, most primary dental care is delivered by dentists in private practice, and the number of dentists per 100,000 people has increased significantly from 2000 to 2022. Over the past two decades, other dental professionals have increasingly contributed to service delivery, now making up about one quarter of the dental workforce. However, dental care in Australia remains somewhat disconnected from the broader primary healthcare system, and limited government funding means that many people—especially those in rural areas and low-income groups—still face barriers to accessing necessary dental services. [23]

XI. DENTAL AUXILIARIES IN CANADA: ROLES, EDUCATION, AND WORKFORCE CHALLENGES

Dental assisting, dental hygiene, and dental therapy are closely related oral health professions that support dentists and help maintain patients' oral health. These professionals provide preventive care, patient education, clinical assistance, and basic treatments within dental teams. The chapter explains their history, education requirements, and scope of practice in Canada, highlighting how each profession has distinct roles but shares a common goal of improving oral health services. It also discusses workforce trends and challenges such as changing educational requirements, job conditions, and limited training programs that affect the development and availability of these oral health professionals.[31]

XII. CHALLENGES AND REGULATION

Despite their benefits, the use of dental auxiliaries faces several barriers. These include inconsistent education standards, limited legal scope, poor public awareness, financial constraints, and lack of formal employment structures [9,11,4].

Some dentists also remain hesitant to delegate more complex duties because of concerns about clinical responsibility and quality control [9,16].

Regulation varies widely between countries and even within regions. In some systems, hygienists and therapists have broad independent or semi-independent roles, while in others their work remains tightly supervised [22,23,31].

XIII. FUTURE DIRECTIONS

The role of dental auxiliaries is expected to continue expanding as oral health systems respond to growing demand, aging populations, and technological change [1,11,19].

Digital dentistry, artificial intelligence, tele-dentistry, and enhanced preventive care models will require auxiliaries who are trained to support both clinical and digital workflows [15,19,20].

Future workforce planning should focus on standardized training, competency-based education, clear supervision models, and supportive policy environments [21,22].

XIV. CONCLUSION

Dental auxiliaries are indispensable members of the modern dental team. Their roles in chairside support, infection control, prevention, restorative assistance, laboratory work, and community outreach improve access, quality, and efficiency in oral healthcare [1,2,13].

As the demand for oral health services continues to increase, expanding the education and utilization of dental auxiliaries will be essential. Stronger training systems, clearer scope of practice, and better workforce planning can help these professionals contribute even more effectively to patient care and public oral health [20,22].

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