

CONTRIBUTION OF DENTISTRY TECHNICIANS IN PRIMARY HEALTH CARE IN CHILE 2017-2020

Patricia Moya Rivera

University: Finis Terrae

Santiago de Chile

<https://orcid.org/0000-0002-8442-2571>

Nicolás Ponce Ibáñez

University: Finis Terrae

Santiago de Chile

<https://orcid.org/0000-0002-4360-8249>

Sebastián Zamorano Vidal

University: Finis Terrae

Santiago de Chile

<https://orcid.org/0009-0004-3725-4204>

Juan Carlos Caro Cassali

University: Finis Terrae

Santiago de Chile

<https://orcid.org/0009-0005-8002-1366>

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Abstract: Introduction: In Chile, oral health is a priority in the health field and represents a fundamental challenge for health services aiming to guarantee universal and equitable access for the population. In Primary Health Care (PHC), the team includes higher-level dental technicians (TONS) who can play a fundamental role in providing more timely dental care, allowing us to respond to the oral health needs of the population. **Objective:** This study aims to describe the dental activities recorded by dental technicians in primary health care in Chile, during the years 2017-2020. **Materials and Methods:** A descriptive study was conducted using data from the Monthly Statistical Registry (REM) of the Ministry of Health. The following activities were measured: sealant application, coronal polishing and supragingival scaling, topical fluoridation, individual brushing technique instruction, and intraoral radiographs. The number of dental activities performed by the technicians was detailed, grouped by sex, age group and type of service was detailed. The frequency of dental activities was determined for each year of study, as well as the trend of activities in the study period. **Results:** A total of 25,459,254 dental activities were registered by dentists and 1,496,237 by dental technicians, representing 6% of the total activities. In 2017, 4.58% of total dental activities were performed by technicians, a figure that increased to 6.0% in 2020, showing a slight upward trend ($R^2 = 0.71$). Intraoral radiographs were the most common activity. **Conclusion:** The activities performed by dental technicians contribute to the care provided by dentist in primary care, mainly in taking intraoral x-rays.

Keywords: Oral Health; Primary Care; Dental Technicians.

INTRODUCTION

Oral health is a fundamental element of the individual's physical, mental and social well-being. The country's epidemiological data reveals a high prevalence of oral pathologies all age groups, with dental caries and periodontal disease being the ones that most affect the Chilean population (PALOMER, 2016). Although there has been an improvement in oral health indicators over the last decade, the magnitude of the damage in the Chilean population remains a major public health problem (CABELLOS et al., 2011).

Primary Health Care (PHC) services in Chile provide care to beneficiaries of the National Health Fund (FONASA), who, for the most part, belong to the most vulnerable sectors of society, experience high levels of dental damage, and represent 73% of the population (MINSAL). It is thus necessary to evaluate a possible reorganization of dental activities to provide a timely response to the demand of the population within the Family and Community Health model.

It is important to consider that the dental profession, compared to other health professions, has one of the highest rates of anxiety, depression and burnout (ESPINOSA et al., 2020). Dental practice focuses on a limited scope of action, characterized by forced postures and procedures carried out under the pressure of time, which can cause physical deterioration of the dentist (CASTAÑEDA, 2012; AMOR, 2020). This scenario requires constant support from the technician during patient care. Furthermore, added to this reality, dentistry is constantly changing, with the creation of new specialties, the application of more complex procedures and the use of modern technologies, which makes the work of the dental professional increasingly stressful and varied (IANTOSCA, 2021).

In this context, technical support staff must have the necessary knowledge and skills to deal

with a wide variety of treatments performed in the oral cavity (GONZALEZ, 2021). The work of the dentist in primary health care (PHC) demands the collaboration of dental technicians to guarantee their excellence. They play an essential role in providing more timely dental care to the patient, which enables a more effective response to the oral health needs of the population (CISTERNAS, 2019).

In the field of primary care, it is imperative to carry out promotional and preventive actions in order to satisfy the oral health needs of the population. Consequently, the objective of this study was to describe the contribution made by dental technicians in Primary Health Care in Chile, during the years 2017-2020.

MATERIAL AND METHODS

A descriptive study design was carried out using the database provided by the Monthly Statistical Registry (REM) of the Department of Statistics and Health Information (DEIS) of the Ministry of Health. The REM is the public information source where all health activities carried out in primary health care are recorded. For this study, the activities carried out by Higher Level Dentistry Paramedic Technicians (TONS) in the dental field and that are registered in Series A of the REM A-09, which indicates dental health care in PHC and specialties, were considered. In Section J of this series, the activities carried out by dental paramedical technicians and/or dental hygienists are identified and are broken down into: Application of sealants, coronal polishing and supragingival scaling, topical fluoridation, individual education with instruction in brushing technique and intraoral x-rays. Each of these activities constitutes a support provision for the dental care provided by the dentist and is registered only once.

For statistical analysis, a database was built with the dental activities carried out by the TONS in APS, in Chile, during the period 2017-2020. The number and proportion of dental activities recorded by TONS and by dentist were calculated considering the same activities (application of sealants, coronal polishing and supragingival scaling, topical fluoridation, individual education with brushing technique instruction and intraoral radiographs) to establish the proportion in that TONS contribute to the APS each year of study. To determine the trend of dental activities of technicians in the study period, the annual percentage change (PCA) was calculated.

The frequency of dental activities was described disaggregated by sex, age group and type of support provision (application of sealants, coronal polishing and supragingival scaling, topical fluoridation, individual education with brushing technique instruction and intraoral radiographs) for the period of study. STATA program version 14.0 was used. The results are presented in graphs.

The source of information used contains data records for public use, which do not have variables that allow cases to be identified, thus maintaining the confidentiality of the information.

RESULTS

During the study period, 25,459,254 dental activities were recorded carried out by dentists and 1,496,237 carried out by TONS, which represents around 6% of the total activities. In 2017, 4.58% of total dental activities were carried out by TONS, a value that increases to 6.0% in 2020, reflecting a slight upward trend ($R^2 = 0.71$). This is shown in figure 1.

When describing the 1,496,237 dental activities carried out by the TONS in Chile during the period 2017 to 2020, a greater proportion is observed in female patients

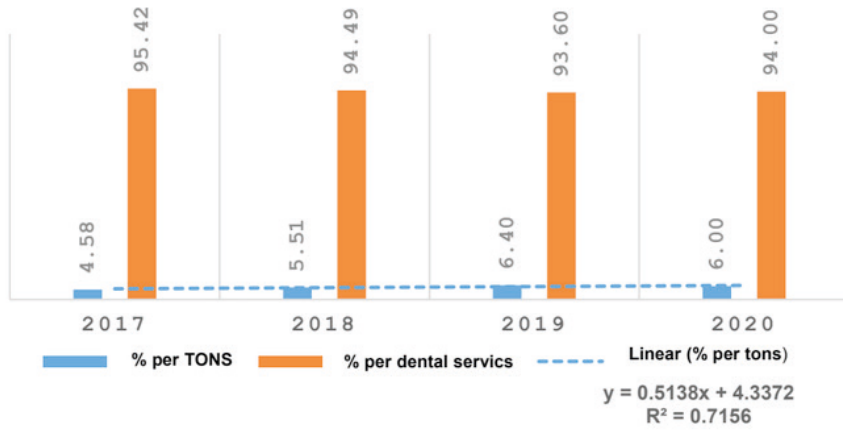


Figure 1: Percentage distribution of dental activities registered by Paramedical Dentistry Technicians and Dentists in Primary Health Care, Chile, years 2017 to 2010.

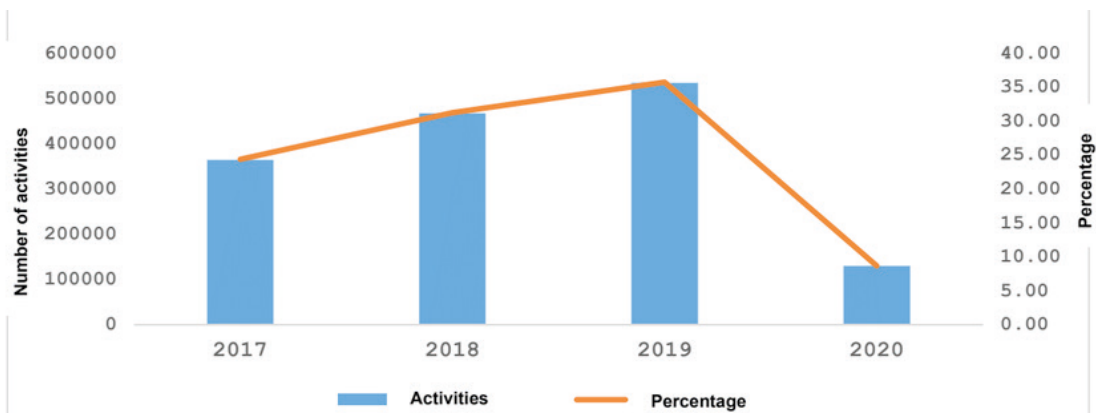


Figure 2, Number and percentage of dental activities registered by Higher Level Dentistry Paramedic Technicians in Primary Health Care in Chile, years 2017 to 2010.

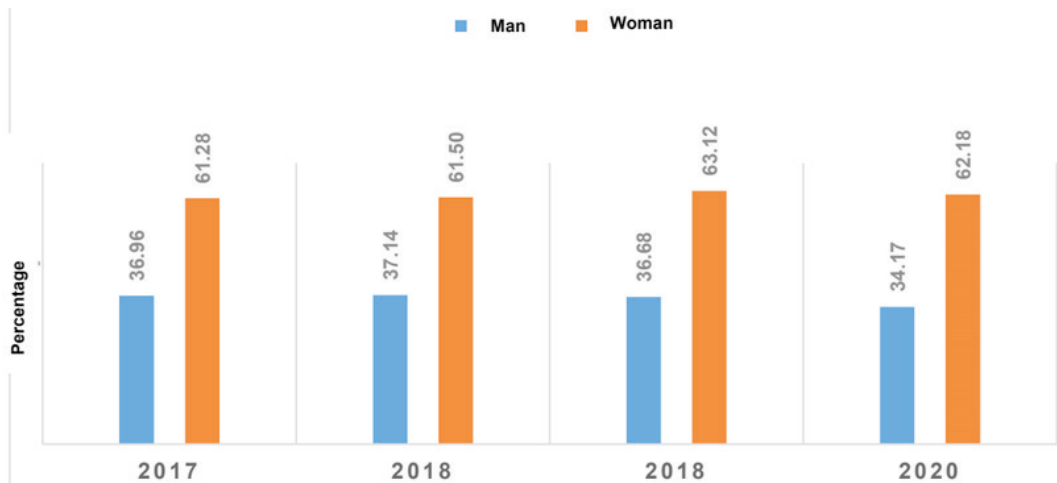


Figure 3: Percentage distribution of dental activities performed by Paramedical Dentistry Technicians according to patient sex.

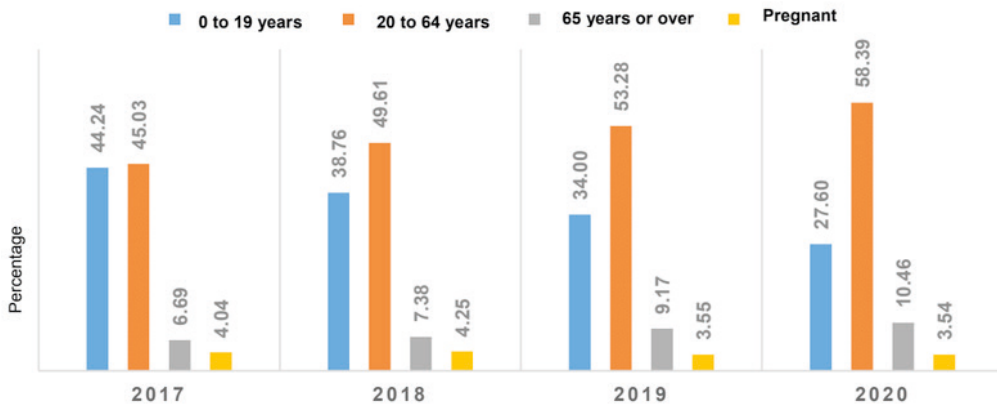


Figure 4: Percentage distribution of dental activities performed by Paramedical Dentistry Technicians according to patient age group.

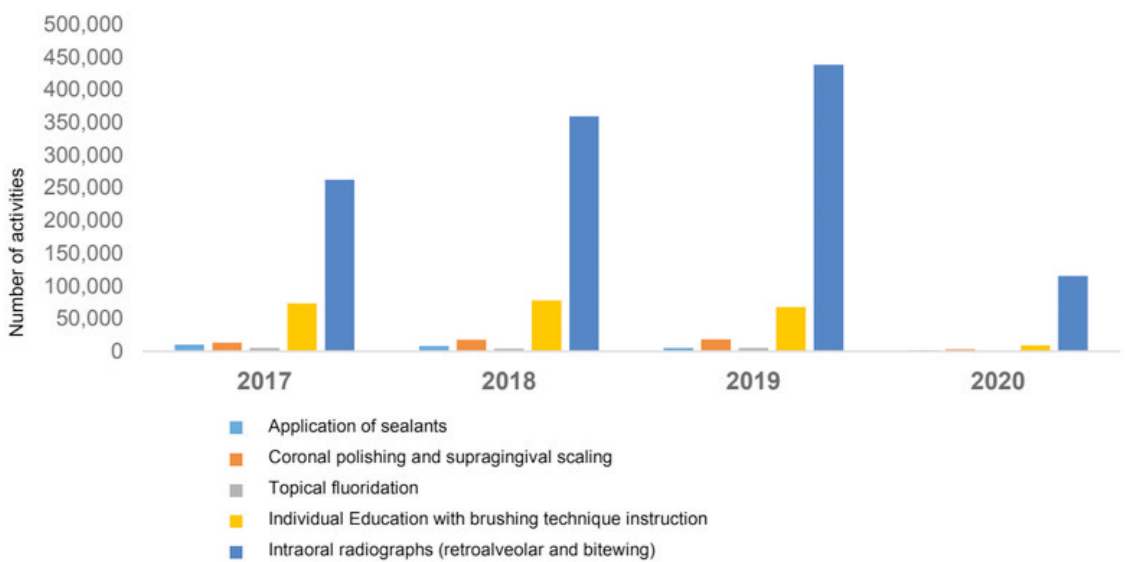


Figure 5: Number of dental activities registered by Higher Level Dentistry Paramedic Technicians in Primary Health Care in Chile, years 2017 to 2020.

(62.1%), and in the group from 20 to 64 years old (50.5%). The highest frequency was recorded in 2019 (n=534,876), showing an increasing trend since 2017. The percentage of annual change (PCA) between the year the study began (2017) and 2019 was 46.8%. The year 2020 stands out with a decrease in dental activities to a quarter of what was recorded in 2019 (n=129,633). See figure 2.

When describing the dental activities carried out by the TONS according to the sex of the patient, it is observed for the entire study period that the highest percentage of

these activities is carried out in women, as shown in Figure 3.

In the percentage distribution of dental activities carried out by TONS according to the patient's age group, it is observed that those between 20 and 64 years old are the most frequent in all years of the study, with an increasing trend. On the contrary, although the group from 0 to 19 years old presents a similar percentage to the group from 20 to 64 years old in 2019, its value shows a decreasing trend towards the year 2020. This is shown in figure 4.

The dental activities carried out by the TONS, disaggregated by type, show that intraoral x-rays are the most frequent services, followed by individual education with brushing technique instruction. This is shown in figure 5.

DISCUSSION

The objective of this study was to describe the contribution made by dental technicians in Primary Health Care in Chile, during the years 2017-2020. The main results indicate that around 6% of the total dental activities that include the application of sealants, coronal polishing and supragingival scaling, topical fluoridation, individual education with brushing technique instruction and intraoral radiographs were performed by the technicians, being a value that increases during the study period. Likewise, it was found that these activities are carried out more frequently by women, in the age group between 20 and 64 years. The most frequent type of activity corresponded to intraoral radiographs.

In primary health care, a greater demand for medical and dental care is evident in women and of all ages, especially in those with low incomes, since they have a greater perception of the disease (MACHADO, 2018). This is consistent with the results obtained in this study, where the dental activities carried out by technicians were more common in women.

The group of adults and older adults have the highest prevalence of caries damage due to the absence of preventive measures or appropriate and timely treatments to safeguard their oral health (MOYA et al., 2017). In the present study, it was found that the care provided by the technicians was carried out on patients between the ages of 20 and 64, in accordance with the evidence. Likewise, a similar percentage is evident in the age group between 0 and 19 years, which

could be related to the execution of preventive activities in this population.

In the description of the dental activities carried out by technicians in primary health care, where the focus is mainly promotional and preventive, educational activities should be more common, mainly individual or group education with instruction in brushing technique. However, in this study the main activity was taking x-rays, as a secondary prevention activity and to support the dentist's diagnosis. This contradicts the evidence, which indicates that most of the work time of dental technicians is focused on health promotion activities (FRAZÃO; CASTELLANOS, 1999).

This result demonstrates that the current organization of primary health care services in dentistry continues to privilege individual care over community care and, consequently, there is low coverage of oral health education at the population level. Dentists mainly offer specific protection services, such as the topical use of fluoride or the placement of sealants in the clinic and, sometimes, they promote oral health in the community (CONTRERAS, 2016). Therefore, this initiative would be a measure to expand education to the community and improve current indicators of dental caries.

The healthcare field faces an arduous challenge in relation to oral health problems in the population (IANTOSCA; BUTLER, 2021). This information is considered relevant to establish a baseline of the activities they carry out and formulate strategies that allow expanding the coverage of activities. Optimizing oral health in the population will require the implementation of promotional and preventive activities, and the delegation of these may be an ideal option. However, the work circumstances of the technicians are a relevant factor to consider, since the absence of incentives, poor relationships with their immediate bosses and problems of

harmonization between work and the needs of the family context are factors that affect a high turnover (CHAPARRO et al., 2015).

When analyzing the results, it is crucial to consider the limitations of the study. The data used in this study are derived from registration in the monthly statistical reporting system (REM) implemented in the public health care network. The activities are carried out by technicians, which provides the possibility of under-recording of activities. However, it is the official registry with national representation and, consequently, allows solid and valid information to be provided. Although the study design is cross-sectional, measurement over four consecutive years makes it possible to obtain a longitudinal perspective of the

dental activities carried out by technicians, in order to evaluate their behavior over time.

In relation to the contribution of dental activities carried out by technicians in primary health care, the literature is insufficient and the existing one addresses various aspects of the work in particular, which makes it difficult to compare the results (CASTELLANOS, 2024; MAIA et al., 2021) In conclusion, the results of this study suggest that 6% of dental activities are carried out by technicians, mainly in women and in age groups between 20 and 64 years. Radiography is the most common activity. If you want to improve oral health in the population, it is necessary to maintain and increase support activities in dentistry.

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