

Analysis of Reasons for Extraction of Permanent Teeth in Children in Senegal: A Retrospective Study

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Abstract

Background: Loss of permanent teeth can have negative functional, psychological and social consequences, especially for children and adolescents with growing bone structures. Knowledge of their causes is of interest in the development of comprehensive dental public health programs. The objective of this study was to evaluate the reasons for extractions of permanent teeth in children in public oral structures in Dakar.

Material and method: A retrospective descriptive study, based on consultation registers and patient records, was performed. Patients between the ages of 6 and 15 who had permanent tooth extractions between January 2014 and August 2018 were included. A questionnaire including socio-demographic data, reason for consultation, reason for extraction and extracted teeth was included allowed to collect the data.

Results: A total of 321 patients aged 6 to 15 years received 375 permanent tooth extractions (1.16 teeth / child). Dental caries and its complications were the main reasons for extractions (94.7%).

Conclusion: Dental caries remains a real public health problem in developing countries. Decision-makers need to focus on strategies for the prevention and management of early childhood oral conditions to avoid the extraction of permanent teeth.

Keywords: Reasons for Extraction; Permanent Teeth; Child, Tooth Decay; Senegal

Introduction

The extraction of permanent teeth should not be an insignificant act, especially in children, because of the negative repercussions on eruption phenomena, the harmony of the arches, the primary functions of chewing, swallowing, breathing and phonation. Indeed, the first permanent molar, which is the first permanent tooth to erupt, is the keystone of the occlusion; it determines the shape of the lower part of the face and conditions the position and health of the other permanent teeth [1]. The decision to extract permanent teeth must be reasoned and integrated into a global treatment plan that often requires collaboration with other dental specialties. The analysis of the causes of permanent tooth loss is of interest to practitioners and decision-makers in order to develop control strategies to be integrated into overall dental public health programs. It is from this perspective that an indirect method based on the search for reasons for these permanent tooth losses by extraction has been developed and used in many

countries. Numerous studies on the causes of permanent tooth extraction in children, adolescents and adults have been conducted in industrialized countries [2-5] and caries and periodontal disease have been the main causes of extractions. In Africa, studies are rare. The main objective of this study was to evaluate the reasons for extractions of permanent teeth in children in public oral structures in Dakar.

Materials and Methods

This was a descriptive retrospective study of patients consulting the oral structures of Aristide Dantec Hospital (HALD), Albert Royer National Children's Hospital of Fann (CHNEAR), Dakar Institute of Odonto-Stomatology (IOS) and Grand Yoff General Hospital (HOGGY). Patient selection was based on consultation records. All records of patients aged 6 to 15 years who received permanent tooth extractions were included in the study. A "reasoned choice" sampling was conducted. A data sheet was

used to collect information on socio-demographic data, the reason for consultation, the reasons for extraction, and the type of teeth extracted. The collected data were analysed with the SPSS 20.0 IBM software. The quantitative variables were described by their means and standard deviations. The qualitative variables were described by their numbers and percentages.

Results

Among 26362 children consulted, 321 patients (1.21%) aged 6 to 15 years had received permanent tooth extractions. The number

of permanent teeth extracted was 375 (1.16 teeth/child). Girls had received 55.2% of extractions. The number of permanent teeth extracted was 375 (1.16 teeth / child). Girls had received 55.2% of extractions. The 12-15 age group had benefited from 77.88% (Table 1). The distribution of extractions by health centre was 33.64% in the CHNEAR and 31.77% in HOGGY (Table 2). The first molars accounted for 76.94% of the extracted teeth (Table 3). Dental caries and its complications were the main reasons for extracting permanent teeth in 94.16% of cases (Table 4). Pain was the reason for consultation for 74.8% of extracted teeth (Figure 1).

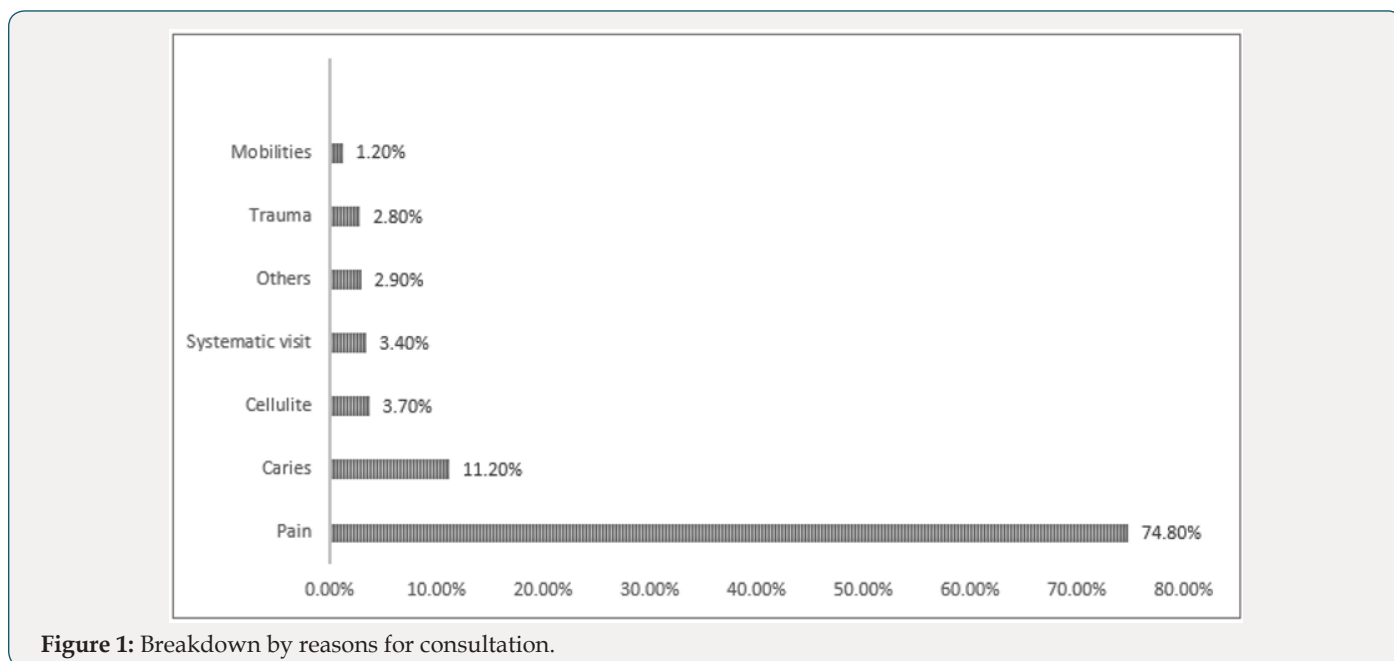


Figure 1: Breakdown by reasons for consultation.

Table 1: Distribution of extractions by age group.

Age group (years)	[6-9]	[9-12]	[12-15]
Staff (%)	7,20	14,13	78,66

Table 2: Distribution of extractions according to the host structure.

Health Structure	CHNEAR	HOGGY	IOS	HALD
Staff (%)	33,64	31,77	19,00	15,59

Table 3: Distribution of extractions according to tooth type.

Tooth Type	First Permanent Molar	Premolar	Second Permanent Molar	Incisor	Canine
Staff (%)	76,94	9,60	8,66	3,20	1,60

Table 4: Distribution by extraction reasons.

Reasons for Extractions	Caries	Orthodontic	Trauma	Eruption Accident	Aesthetic
Staff (%)	94,66	1,86	1,59	1,36	0,53

Discussions

The health structures selected in this study have the particularity of being centres receiving many patients for general health and oral health care. In addition, the CHNEAR and the IOS have services exclusively oriented towards the oral care of children and adolescents. The prevalence of permanent tooth extractions seems low but not negligible given the key role played by these teeth and in particular the first permanent molar. This result is lower than that reported by Murray et al [6] and Johansen et al [7]. This could be explained by the difference in the study population, which was made up of adults and elderly subjects (20-50 years and >70 years). Children in the 12-15 age group received more extractions than others. This shows that the number of permanent teeth extracted increases with age. Pain was the main reason for consultation and concerned the majority of patients. Studies by several authors [8,9] have produced similar results. This is linked to an economic situation and/or a lifestyle that is not compatible with a “preventive-conscious” approach. Difficulties in access to dental care, lack of dental facilities, lack of financial resources or lack of information and education on oral health may constitute a barrier to systematic visits or consultations as soon as the first signs of dental problems appear [10]. Dental caries and its complications were the


most common reasons for extraction of permanent teeth. The first permanent molars were the most frequently extracted teeth. These data support the results of Shammari et al [11] who reported that dental caries was the leading cause of permanent tooth extractions in patients under 40 years of age and that the first permanent molars were the most affected teeth. Other studies [12-17] have shown that the first permanent molar was the most extracted tooth with prevalence ranging from 11.7% to 86.2%. A study by Safadi et al [18] in subjects aged 13 to 20 years showed that the prevalence of extractions of the first permanent molars was 31.3%, of which 76.5% concerned the first lower molars and that dental caries and its consequences were the main reasons for extraction. The greater susceptibility of the first molars to extraction can be explained by several factors. Their eruption, usually around 6 years of age, is silent and usually goes unnoticed, resulting in defective brushing. They have an occlusal surface whose morphology is more favourable to the retention of soft cariogenic deposits [19]. However, given their important roles, especially in children and adolescents, their extraction should be the ultimate therapeutic choice.

Conclusion

It should be noted that dental caries and its complications are the main reasons for the extraction of permanent teeth in children. It is important to implement a policy of promotion, prevention and early management of oral diseases in children aged 12 to 15 years in order to reduce dental loss.

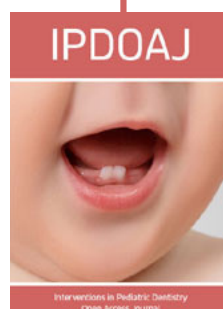
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