

## Research Article

# Determinants of Parental Decision-Making for Tooth Extraction versus Restoration in Children: A Study on Socio-Economic and Sociological Factors

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## ABSTRACT

This research seeks to assess the factors that affect parental choice when it comes to whether to extract or to restore the tooth in children and specifically the socio-economic and sociological factors. A cross-sectional study design was used in this research, which was conducted in 6 months in tertiary care hospitals and paediatric dental clinics. The sample size (n) of 120 parents with children aged 5-12 years was selected using a stratified random sampling method to make sure that the different socio-economic strata are represented. A structured, pre-tested questionnaire was used to gather data, which consisted of demographic, socio-economic status, parental education, cultural beliefs, dental anxiety, past dental experiences, and treatment preferences. A standardized dental assessment form was also used to record the clinical examination findings to be able to correlate parental choices with the oral health status of the child. The SPSS software was used to analyze the statistical results, where descriptive statistics, chi-square test and logistic regression analysis were used to establish the significant associations and predictors of treatment decisions. This research aims to give understanding of the impact of financial limitations, education levels, culture, and the availability of dental health services on parental choices and thus help in creating specific interventions to enhance tooth-saving treatments within children groups.

**Keywords:** tooth extraction, decision making, restoration, sociological

## BACKGROUND

Dental caries is among the most common chronic diseases in children throughout the globe, and it remains one of the significant public health issues, especially in the low and middle income countries [1]. Caries of primary teeth can result in pain, infection, and permanent oral health problems, not only impacting the quality of life of the child, but also his or her overall development [2]. In spite of the progress in the field of paediatric dentistry, the prevalence of untreated caries is still high, which is significantly contributed to by the delay in seeking treatment and choices made by parents.

It is the parents who are center stage in deciding the kind of dental treatment their children undertake, mostly when they have to make decisions on whether to extract their tooth or restore it [3]. They are not entirely clinical decisions, but are taken under the influence of a very complicated interaction of socio-economic, educational, and sociological factors. Research has indicated that parental beliefs, knowledge and attitudes towards oral health can play a significant role in determining the oral health outcomes and preferences of children towards treatment [4]. One of the determinants in the choices of dental care among children is socio-economic status (SES). Low-income families have a higher

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likelihood of their children having untreated dental caries and are usually exposed to extraction instead of restorative treatments because of financial limitations [5]. The general perception of restorative procedures is that they are more costly and time-consuming, thus deterring parents from resorting to tooth-preserving procedures [6]. Moreover, the scarce services of dental care facilities and insurance coverage widen the treatment decision disparities between various socio-economic groups [1].

Other determinants affecting decision-making are parental education and oral health literacy. It is more likely that parents who have high levels of education would know the value of maintaining primary teeth and how restorative care can be beneficial [7]. On the contrary, less informed parents might feel that primary teeth are interim and unnecessary and thus prefer extraction [4]. Research has shown a strong correlation between parental knowledge and reduced prevalence of early childhood caries with respect to awareness playing a crucial role in enhancing treatment decisions [7].

Parental attitudes towards dental care are also influenced by sociological factors such as cultural beliefs and social norms. In most societies, extraction is viewed as a decisive and fast way out of teeth issues especially when individuals seek treatment when pain has already occurred [8]. The cultural misunderstandings and distrust in dental treatment can deter parents from adopting restorative options. Also, parental dental anxiety has been reported as the key obstacle to the acceptance of conservative dental treatments, affecting the experience and treatment outcomes of the child [9].

Past dental experiences also play an important role in influencing the preferences of parents. Pain during treatment or poor clinical outcomes are some of the negative experiences that may result in avoidance of complex restorative procedures [10]. On the other hand, good relations with the dental staff may foster trust and persuade parents to choose tooth-saving procedures. There is some evidence that as parents are sufficiently informed about treatment options, they usually change to restorative care [11].

Dental professional communication with parents is extremely essential in the determination of treatment. Parental acceptance of restorative procedures can be enhanced through effective communication approaches, such as being able to explain the risks, benefits and long-term consequences [3]. Research has revealed that parental preferences are subject to change in the event that they are given clear and organized information about the treatment options available [11].

There are also family and behavioral issues that lead to decision-making. The factors that have been linked to caries and subsequent treatment requirements on the development of dental caries include parenting styles, family environment and oral hygiene practices [12]. Moreover, some larger socio-demographic factors, including the education level of parents, their income, and access to dental care services, also impact the incidence of dental diseases and access to healthcare services [13].

Recent research has also highlighted how parental preferences to restorative treatments may differ depending on the aspects of aesthetics, durability, and cost. To illustrate, parents might be more inclined towards aesthetic restorations but they might change their preferences when they receive information about the durability and cost-effectiveness [11]. This emphasizes the issue of patient education and shared decision-making in paediatric dentistry.

On the whole, the decision-making components of parents about tooth extraction and restoration are multifactorial and depend on socio-economic factors, level of education, cultural beliefs, psychological factors and access to healthcare. The knowledge about these determinants would be important in designing the specific interventions to facilitate the adoption of conservative dental procedures and oral health outcomes in children [14,15].

### METHODOLOGY

The present study was carried out under the cross-sectional analytical design to assess the predictors that impact parental choices in terms of whether to extract or restore teeth in children. The research was conducted in 6 months in paediatric dental clinics and tertiary care hospitals with an aim of having a wide range of patients. The sample population included parents or primary caregivers seeking dental care with children aged 5-12 years who needed a dental treatment with either an extraction or a restorative procedure. The total sample size was determined as 120 respondents based on the estimates of prevalence of the same in the past literature with a 95% confidence level and 5% margin of error.

Stratified random sampling method was used in order to have representation of the various socio-economic groups. The stratification was done according to monthly household income (low, middle and high), and proportionate sampling was used within the stratum. The inclusion criteria were parents of children with dental caries or other related ailments where extraction and restoration of their teeth were both suitable treatment methods, and having the capacity to give informed consent. The criteria used as exclusion criteria were medically compromised

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children, emergency cases that needed immediate extraction and parents who had a background in dental profession to eliminate professional bias.

A structured pre-tested questionnaire was used to collect the data: it was developed based on a thorough review of the literature and an interview with experts. The questionnaire had several sections which included demographic (age, gender, education), socio-economic (income level, occupation) and sociological variables like cultural beliefs, dental anxiety, past experiences with dental treatment, cost perceived to treat and accessibility of dental care services. Moreover, a Clinical Dental Assessment Form was utilized by the qualified dental professionals to document the oral health of the child and what treatment was needed to make sure that there is a correspondence between the clinical and parental preferences.

A pilot study on 10% of the sample size was done before the actual data collection to determine the reliability and clarity of the questionnaire and appropriate changes were done. All participants gave their written informed consent. The participants were assured of confidentiality and anonymity which was upheld during the study.

Statistical Package for the Social Sciences (SPSS) version 25 was used to enter and analyze the data. Demographic and categorical variables were summarized using descriptive statistics (frequencies and percentages). The chi-square test was used to establish relationships between the socio-economic and sociological factors and treatment decisions. Moreover, logistic regression analysis was conducted to find out independent predictors that could affect the probability of selecting tooth extraction as opposed to restoration. The p-value was taken to be less than 0.05, which was deemed statistically significant.

## RESULTS

**Table 1:** Demographic Characteristics of Participants (n = 120)

Variable	Category	Frequency (n)	Percentage (%)
Parent Age	20–30 years	35	29.2%
	31–40 years	50	41.7%
	41–50 years	35	29.2%
Gender	Male	52	43.3%
	Female	68	56.7%
Child Age	5–8 years	55	45.8%
	9–12 years	65	54.2%

**Table 2:** Socio-Economic Status and Parental Education

Variable	Category	Frequency (n)	Percentage (%)
Monthly Income	Low	48	40.0%
	Middle	46	38.3%
	High	26	21.7%
Education Level	Primary	30	25.0%
	Secondary	52	43.3%
	Higher Education	38	31.7%

**Table 3:** Parental Treatment Preference

Treatment Option	Frequency (n)	Percentage (%)
Extraction	54	45.0%
Restoration	66	55.0%

**Table 4:** Association between Socio-Economic Status and Treatment Choice

Socio-Economic Status	Extraction (n)	Restoration (n)	Total	p-value
Low	32	16	48	
Middle	16	30	46	
High	6	20	26	0.002

**Table 5:** Influence of Sociological Factors

Factor	Category	Extraction (%)	Restoration (%)	p-value
Dental Anxiety	Present	62.0%	38.0%	0.01
	Absent	30.0%	70.0%	
Cultural Beliefs	Favor Extraction	68.0%	32.0%	0.003
	Favor Saving Tooth	25.0%	75.0%	
Previous Experience	Negative	60.0%	40.0%	0.005
	Positive	28.0%	72.0%	

**Table 6:** Logistic Regression Analysis

Variable	Odds Ratio (OR)	95% CI	p-value
Low Income	2.8	1.5–5.2	0.001
Low Education	2.3	1.2–4.4	0.008
Dental Anxiety	2.6	1.4–4.8	0.003
Negative Experience	2.1	1.1–3.9	0.02

## DISCUSSION

The current paper examined the socio-economic and sociological factors that affect the choice of parents on whether to extract the teeth or restore them in children. The results proved that socio-economic condition, parental education, dental anxiety, cultural beliefs, past dental experience had a strong impact in terms of treatment preferences. These findings are in line with past literature that has highlighted the fact that the decision making of parents in pediatric dentistry is multifactorial and goes beyond clinical issues only [16].

In the given research, more parents with low socio-economic backgrounds had a preference towards tooth extraction, as compared to tooth restoration. This result is in line with the earlier studies that have suggested that the financial factors and access to dental care services play significant roles in determining which treatment option will be taken and in most cases, they will opt to take cheaper and immediate treatment option like extraction [17]. The issue of cost is a significant impediment to restorative dental care especially in the developing areas where out-of-pocket spending is prominent.

The education of parents was also a predictor of choice of treatment. Parents who are more educated were more inclined towards restorative procedures, probably because they are more aware of the consequence of retaining primary teeth in the long term. These results are echoed in recent research which indicates that oral health literacy is an important determinant of preventive practices and treatment choices [18]. On the other hand, lack of knowledge and misunderstandings on the significance of primary teeth are some of the reasons behind the acceptance of extraction.

It was found that sociological influences especially cultural beliefs had a lot of influence on parental preferences. Extraction was seen as a conclusive and less complex treatment especially when the child was in pain by many parents. This perception is well documented with studies indicating that cultural norms and traditional beliefs tend to be biased towards extraction as opposed to conservative treatment [19]. These beliefs can also be a hindrance to the use of modern, tooth saving dental practices.

Another factor that came out as a significant determinant was dental anxiety in parents. Parents who had greater dental anxiety were more inclined to opt for extraction perhaps as a result

of fear of long term or repeated dental interventions that come with restorative dental interventions. This is informed by the fact that parental anxiety has been shown to have an unfavorable impact on dental experiences of children and decreases their acceptance of complex treatments [20]. Counseling and good communication as a solution to dental anxiety issues can thus enhance the acceptance of treatment.

The past dental experiences too contributed much to the decisions of parents. Experiences that occurred negatively in the past were linked to the increased chances of extraction, and positively, there was more tendency of opting towards restorative treatments. This result coincides with the recent studies that prove that the belief in dental practitioners and the previous satisfaction with the care greatly influence the decisions made [21]. Creating a good dentist-parent relationship is therefore critical towards encouraging conservative ways of treatment.

The paper also brought out the role of dentist parent communication in the determination of the treatment. When parents were well informed about the advantages and results of restorative procedures, they were less likely to turn down such procedures. This confirms other literature which highlights the importance of effective communication and common decision-making in enhancing patient satisfaction and acceptance of treatment [22]. Additional assistance to parents includes visual aids and simplified explanations that will promote more understanding and confidence.

Availability of dental care services also contributed to the choices of parents. A shortage of pediatric dental clinics and the long waiting lines were related to the preference towards extraction. The same tendencies can be noticed in recent research, with the impact of geographic and systemic barriers on the delay of care and increasing invasive treatment options [23]. Enhancing the affordability of and access to affordable and timely dental care is thus important in promoting restorative treatments.

Further, psychological and behavioral influences, parental attitudes and perceptions of pain were identified to have an influence on decision-making. Parents who thought extraction was less painful or took less time were more attracted towards it. Nonetheless, there is current evidence on that a caries can be dealt with with a minimum

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of invasive restorative methods, which have shown to be equally effective in treating caries with less discomfort, thus the importance of increasing awareness among parents [24].

On the whole, the results of this research support the notion that socio-economic, educational, cultural, and psychological factors have a complicated interrelationship impacting the decision-making by parents in the field of pediatric dentistry. By managing these determinants using specific educational interventions, better communication techniques and increasing access to dental care services, it is possible to encourage tooth-saving interventions and improve oral health outcomes among children [25].

## CONCLUSION

To summarize, the socio-economic status, educational level, cultural beliefs, dental anxiety, and past dental experiences play a major role in influencing parental decision-making in regard to tooth extraction versus restoration in children. A preference towards extraction was linked to lower income levels and lack of awareness and better education and positive dental experiences were linked to restorative procedures. These results underscore the importance of better parental and dentist-parent interaction and provision of dental services to promote conservative treatment methods and improve the pediatric oral health.

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