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## Prevalence of Gross Caries, Edentulism and Cysts in a Known Population and their Management with Root Canal Treatment, Removable and Fixed Partial Dentures and Surgical Procedures. Respectively.

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### KEYWORDS

Prevalence,  
Underwent,  
Odontogenic,  
Enucleation,  
marsupialization

### ABSTRACT:

**Background:** This study was conducted to assess the prevalence of gross caries, edentulism and cysts in a known population and their management with root canal treatment, removable and fixed partial dentures and surgical procedures.

**Material and methods:** This study was conducted to assess the prevalence of gross caries, edentulism and cysts in a known population and their management with root canal treatment, removable and fixed partial dentures and surgical procedures. The study comprised of 100 subjects who underwent oral clinical examination. The subjects had been informed about the procedure and were asked to give consent. Those who agreed to give consent had been included in the study. Statistical analysis was conducted using SPSS software.

**Results:** There were 55 males and 45 females in this study. In the current study. the prevalence of grossly carious teeth was 26%. Edentulism and developmental cysts were observed in 33% subjects and 41% patients, respectively. Odontogenic keratocyst was seen in 12 subjects, radicular cyst was seen in 13 subjects and dentigerous cyst was seen in 16 subjects. The grossly carious teeth were treated with root canal treatment, edentulism was treated with fixed partial dentures and the cysts were treated with surgical procedures like enucleation and marsupialization.

**Conclusion:** In the current study. the prevalence of grossly carious teeth was 26%. Edentulism and developmental cysts were observed in 33% subjects and 41% patients, respectively. The grossly carious teeth were treated with root canal treatment, edentulism was treated with fixed partial dentures and the cysts were treated with surgical procedures like enucleation and marsupialization.

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## Introduction

Dental caries is the most prevalent chronic disease among children with a significant impact on individuals, families and society.<sup>1</sup> Although it's largely preventable, more than 530 million children worldwide affected with dental caries in the primary dentition and most of the decayed teeth were untreated.<sup>2</sup> The American Academy of Pediatric Dentistry defined “early childhood caries” (ECC) as the presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces in primary tooth of a child under 6 years old.<sup>3</sup>

Cysts are pathologic cavities filled with fluid, semisolid or gaseous material. Those cysts which develop from the remnants of the odontogenic apparatus within the jaws are known as odontogenic cysts (OCs). The WHO has broadly divided the OCs into developmental and inflammatory cysts based on their pathogenesis. Inflammatory cysts are radicular cysts, residual cysts and paradental cysts, whereas dentigerous cyst, odontogenic keratocyst (OKC), calcifying OCs, gingival cysts of newborn and adults and glandular OCs are developmental in nature. These cysts may cause significant jaw swelling associated with pain and pus discharge. Sometimes they can result in significant jaw destruction without any obvious jaw swelling and may be discovered accidentally. Some of the developmental cysts show aggressive behavior and high recurrence rate which mandates regular follow-up.<sup>4-7</sup>

This study was conducted to assess the prevalence of gross caries, edentulism and cysts in a known population and their management with root canal treatment, removable and fixed partial dentures and surgical procedures.

## Material and methods

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## Results

**Table 1: Prevalence of gross caries, edentulism and cysts in subjects**

Condition	Number of cases (n)	Prevalence (%)
Gross caries	26	26
Edentulism	33	33
Developmental cysts	41	41
• Odontogenic Keratocyst	12	29.2
• Radicular cysts	13	31.7
• Dentigerous cyst	16	39.02

In the current study, the prevalence of grossly carious teeth was 26%. Edentulism and developmental cysts were observed in 33% subjects and 41% patients, respectively. Odontogenic keratocyst was seen in 12 subjects, radicular cyst was seen in 13 subjects and dentigerous cyst was seen in 16 subjects.

**Table 2: Gender-wise distribution of subjects**

Gender	Number of subjects	Percentage
Male	55	55
Female	45	45
Total	100	100

There were 55 males and 45 females in this study.

**Table 3: Treatment plan for subjects**

Condition	Treatment plan
Grossly carious teeth	Root canal treatment
Edentulism	Fixed partial denture



Developmental cysts	Enucleation and marsupialization
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The grossly carious teeth were treated with root canal treatment, edentulism was treated with fixed partial dentures and the cysts were treated with surgical procedures like enucleation and marsupialization.

### Discussion

Dental caries is one of the most preventable chronic and cumulative diseases, which affects 60–90% of schoolchildren as well as many adolescents and adults worldwide.<sup>8,9</sup> Without proper treatment, caries can evoke oral pain, infection and eventually lead to tooth loss, affecting children's quality of life both physically and psychologically, and becoming a global public health issue in developed and developing countries.<sup>10-12</sup>

Dental caries is a chronic bacterial infectious disease destructing the tooth's hard tissues by acids produced by a complex interaction, whose main factors are host susceptibility, bacteria, diet, and duration. The destruction of the tooth is a dynamic process determined by the balance between demineralization and remineralization occurring in the interface between hard tooth tissue and the surrounding environment.<sup>13-15</sup>

This study was conducted to assess the prevalence of gross caries, edentulism and cysts in a known population and their management with root canal treatment, removable and fixed partial dentures and surgical procedures.

There were 55 males and 45 females in this study. In the current study, the prevalence of grossly carious teeth was 26%. Edentulism and developmental cysts were observed in 33% subjects and 41% patients, respectively. Odontogenic keratocyst was seen in 12 subjects, radicular cyst was seen in 13 subjects and dentigerous cyst was seen in 16 subjects. The grossly carious teeth were treated with root canal treatment, edentulism was treated with fixed partial dentures and the cysts were treated with surgical procedures like enucleation and marsupialization.

Chen J et al<sup>16</sup> examined the prevalence of dental caries and its associated factors among 3- to 5-year-old children in Huizhou, Guangdong Province, China. We recruited children from 21 kindergartens adopting multistage

sampling method. Two examiners performed oral examination. They assessed children's dental caries experience following the World Health Organization criteria. Children's dental caries activity, malocclusion, tonsil size and pH value of saliva were evaluated. Parental questionnaires collected child's sociodemographic background and oral-health-related behaviours. Data were analyzed by univariate analysis and logistic regression using SPSS. This study invited 1,485 children and recruited 1,348 (53.2% boys) (response rate: 90.8%). Dental caries prevalence rate was 58.2% for 3-, 70.7% for 4-, 80.5% for 5-year-old and 72.9% for all recruited children. The mean dmft score ( $\pm$ SD) was 3.38 ( $\pm$ 4.26) for 3-, 4.75 ( $\pm$ 4.96) for 4-, 5.81 ( $\pm$ 5.71) for 5-year-old and 4.99 ( $\pm$ 5.02) for all children. Age, family status (singleton or not), monthly family income, mother and father's education level, tonsil grading score, spacing in dentition, Cariostat score (reflecting the caries activity), dental plaque index, duration of breastfeeding, dental visit experience, tooth brushing habits and sugary snacking before sleeping were statistically related to the prevalence of dental caries ( $p < 0.050$ ) in univariate analysis. These factors were further analyzed in the regression model. The results of the final model indicated dental caries were associated with age ( $p < 0.001$ ), Cariostat score ( $p < 0.001$ ), spacing ( $p < 0.001$ ), tonsil grading score ( $p = 0.013$ ), singleton or not ( $p = 0.002$ ), sugary snacking habit before bed ( $p < 0.001$ ) and breast-feeding duration ( $p = 0.050$ ). Dental caries was prevalent among 3-to 5-year-old preschool children in Huizhou, China. Children's age, caries activity, tonsil size, malocclusion, family background, sugary snacking habit and breast-feeding habit were related to the prevalence of dental caries. More emphasis should be placed on prevention targeting the risk factors from early life.

Savithri V et al<sup>17</sup> determined the prevalence and factors associated with the cases of histopathologically diagnosed OCs that report to our institution and to analyze the factors associated with the presence of OCs and to study the biologic behavior of different types of cysts. A cross-sectional study was performed on 596 oral and maxillofacial specimens during 2013–2017. Out of these, the cases which were histopathologically proven as OCs were separated and data were collected and analyzed regarding the age, gender, primary symptom, site, radiographic feature, histopathologic diagnosis,



treatment given, recurrences and associated conditions if any. Of the 596 cases included in the study, 67 (11.2%) had a histopathological diagnosis of OCs. 41 cases were inflammatory cysts and 26 developmental cysts. 28 cases (41.8%) were reported as periapical cysts, 10 cases (14.9%) were odontogenic keratocysts (OKCs), 9 cases (13.4%) were dentigerous cysts, 8 cases (11.9%) were inflamed cyst wall, 5 cases (7.5%) each of residual cyst and developmental OCs and one case (1.5%) each of orthokeratinized OC and calcifying OC. This study showed that the prevalence of OCs was similar to other reported studies. Periapical cysts were the most common cysts reported, followed by OKCs showing that the latter were more frequent than dentigerous cysts.

### Conclusion

In the current study, the prevalence of grossly carious teeth was 26%. Edentulism and developmental cysts were observed in 33% subjects and 41% patients, respectively. The grossly carious teeth were treated with root canal treatment, edentulism was treated with fixed partial dentures and the cysts were treated with surgical procedures like enucleation and marsupialization.

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