Commonly reported factors influencing the parent’s decision to accept dental treatment under general anesthesia for their children

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ABSTRACT

Background: Dental caries among children is a global healthcare concern in developing and industrialized countries. If left untreated, it leads to immediate and long-term complications that affect the well-being and quality of life of concerned families. Methodology: After behavioral interventions, general anesthesia is used in specific settings when a young patient presents with extensive teeth damage and exhibits a lack of cooperation that is incompatible with conventional dental office care. A questionnaire was distributed to evaluate the possible causes of decision taken to treat the patients under general anesthesia not limited to patients fear and anxiety, very young age without the capacity to cooperate, convenience to the parents, avoiding multiple visits, cost effectiveness, being advised by the referring dentists or the Pediatric dentists decision based on his expert advice, time or cost, parents bad experience with dentist or fear and anxiety about dentistry or the child’s previous bad experience. Results: Parents were asked the reason for choosing REU. Majority of them agreed that it’s cost effective to get treatment at REU. Parents informed that Main reason for dental treatment under GA is Dental fear (48.5%), followed by general health or psychological issues (16.8%), and followed by past negative experiences (11.9%). Conclusion: GA has a very positive impact on parental emotions, activity and conflict. Nonetheless further long term studies are required to assess the definitive outcome.

Keywords: Children, Preschool; Dental Caries; General Anaesthesia; Oral Health; Quality of Life
1. INTRODUCTION
Children refuse dental treatment due to various reasons like anxiety, fear, very young age, previous bad experiences with the dentist and special needs children having physical mental or medical disability (Taskinen et al., 2014; Jankauskienė et al., 2013; Rajavaara et al., 2018). Modern dentistry provides patients with a possibility of comprehensive treatment under general anaesthesia (DGA). Today anaesthetic facilities are brought to dental clinics and dental procedures can be carried out under DGA without hospital facilities (Taskinen et al., 2014). Health wise, technically and economically, DGA may be more appropriate as compared to treating a patient conventionally over numerous dental visits (Sanjeevi et al., 2012, Khodadadi et al., 2016, Santosh et al. 2017, El Batawi et al. 2017).

Majority of the studies on causes leading to referral to treatment under DGA characterize the observation of the referring dentists. This study aims to reveal the patient’s perspective on this issue (Taskinen et al., 2014). The Aim of the study was to determine causes leading to dental care under general anaesthesia (DGA) in Riyadh Elm University as reported by the patients or the parents/caregivers attending the university hospitals between 2015 to 2020.

2. METHODOLOGY

Materials and Methods
The ethical approval for the current study was taken from the Institutional review board (IRB) with approval number- “SRS/2020/35/210/206”

Study design
Cross-sectional survey

Study population
Parents of pediatric patients underwent comprehensive dental treatment under general anesthesia at Riyadh Elm University Hospital, Riyadh, Saudi Arabia in the last 5 years from 2015 to 2020.

Sample selection
Records of Pediatric patients that completed comprehensive dental treatment and full mouth rehabilitation under general anesthesia were obtained from Riyadh El elm University Hospital to contact their parents. Each parent was approached and contacted personally to explain the purpose of the study. Informed consent was obtained online and a questionnaire was sent via E-mail or WhatsApp message to be filled by the parent. The questionnaire was designed and prepared after referring to articles and authoritative sources and by the help of experts in the field of pediatric dentistry, anesthesiology and statistician.

The questionnaire evaluated the possible causes of decision taken to treat the patients under general anesthesia not limited to patients fear and anxiety, very young age without the capacity to cooperate, convenience to the parents, avoiding multiple visits, cost effectiveness, being advised by the referring dentists or the Pediatric dentists decision based on his expert advice, time or cost, parents bad experience with dentist or fear and anxiety about dentistry or the child’s previous bad experience.

Inclusion criteria
• Healthy patients (ASA-1) - Age group : 0-12 year olds

Exclusion criteria
• Medically compromised or special health needs patients
• Age above 12 years old

Statistics
In the analyses, the subjects were categorized by their age and gender. The subjects were divided into four groups according to their age: 3–5, 6–9, 10–12. Data was subjected to appropriate statistical analysis using IBM SPSS 25.

Duration of study
The whole study took 4 weeks as following:
• 5 days for proposal writing
• 1 week for data collection
• 1 week for statistical data analysis and writing (results)
3. RESULTS
A descriptive statistics of frequency distribution and percentages were calculated for the categorical data. A chi-square test was applied to assess relationship between the categorical variables. A value of p<0.05 was considered significant for all statistical analyses. All the data was analyzed by using IBM-SPSS (Version 25; Armonk; NY; USA). Parents were asked the reason for choosing REU (Figure 1). Majority of them agreed that its cost effective to get treatment at REU.

![Figure 1](image1.png)

**Figure 1** Reason for choosing REU hospital (Multiple responses analysis n=523)

Parents informed that Main reason for dental treatment under GA (Figure 2) is Dental fear (48.5%), followed by general health or psychological issues (16.8%), and followed by past negative experiences (11.9%).

![Figure 2](image2.png)

**Figure 2** Main reason for dental treatment under GA (Multiple response analysis n=404)
Parents undergone any treatment under general anesthesia showed significant association with their child’s fear dealt positively following dental treatment under General anesthesia (p=0.041) as seen in Table 1. 55.4% agreed that child’s fear has been dealt with positively following dental treatment under General anesthesia.

<table>
<thead>
<tr>
<th>Have you (Mother or father) undergone any treatment under general anesthesia?</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you (Mother or father) undergone any treatment under general anesthesia?</td>
<td>Yes</td>
<td>174</td>
<td>55.4%</td>
<td>27</td>
<td>73.0%</td>
</tr>
<tr>
<td>No</td>
<td>140</td>
<td>44.6%</td>
<td>10</td>
<td>27.0%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>314</td>
<td>100.0%</td>
<td>37</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

4. DISCUSSION

Taskinen et al. (2014) aimed to determine causes that will lead to seek dental care under general anaesthesia (DGA) in public health care reported by the patients or the parents/caregivers, the study stated that dental fear was the most common self-reported indication for referring the patients to DGA which was similar to our study. Jankauskienë et al. (2013) conducted a study to determine the reasons for dental treatment under general anesthesia for children younger than 6 years old and they concluded that the major reasons were the need for excessive treatment followed by dental fear and uncooperativeness. This result coincides with our study where 48.5 % agreed as Dental fear as number one reason for treating under GA.

Another study by Rajavaara et al. (2018) was conducted to investigate family-related factors as reported by the parents of children treated under general anesthesia. Dental fear reported by parents was associated in almost half of the cases. Sanjeevi et al. (2019) aimed to evaluate the parental perception on general anesthesia (GA) in pediatric dentistry. They found that most of parents would agree for their child to undergo GA but almost half of parents, due to the fear and lack of knowledge on GA preferred other methods. Khodadadi et al. (2015) examined the knowledge and attitude of parents about pediatric dental treatment under general anesthesia. The questionnaire contained questions assessing the reasons for choosing dental treatment under general anesthesia, and the advantages and disadvantages of this method of treatment and parental satisfaction.

This study showed parents accepted the costs and risks of this approach to maintain the oral health of their children after it was recommended by the paediatrician (Khodadadi et al., 2015). Santosh et al. conducted a study to determine a parent’s view of general anesthesia when subjecting their children and they concluded that the anxiety that a parent feels at the day of surgery influence and increase anxiety in children. So, the parents need to be educated so that they are able to contribute constructively to their child’s care (Santosh et al., 2017). Batawi et al. explored the apparent clinical result and parental satisfaction following dental rehabilitation under general anesthesia over a follow-up duration of 2 years and they concluded that early childhood caries (ECC) affects patient’s behavior and habits, including the difficulty to sleep, grow, and mix socially with others. This study contributes to the prevailing literature that full dental rehabilitation under general anesthesia has an immediate favorable effect on the physical and social quality of life of children suffering from ECC as well as on their parents (Batawi et al., 2014). Another study by Park et al. conducted a meta-analysis of studies that have used the Early Childhood Oral Health Impact Scale (ECOHIS) and Child Oral Health-Related Quality of Life (COHRQoL) instruments to assess the family impact scale (FIS) changes following their children’s dental treatment under general anaesthesia (DGA). The study contributed that treating children under general anaesthesia had a strong positive influence on parental emotions, activity, and conflict. Following DGA, there was gross improvement in the FIS, with large (Park et al., 2018).

5. CONCLUSION

GA is very useful to restore optimal oral health in a single visit and prevent any anxiety associated with several dental chair visits for patients with Dental caries that require extensive dental work. It should be viewed as a behavioural control technique and not a miraculous solve-it-all approach; however, its success relies heavily on subsequent follow up visits. Therefore, the education and motivation of parents are vital for the maintenance of good results and prevent any relapse. This includes attending follow up appointments and regularly monitoring and/or modifying dietary plans and hygiene habits.
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Authors’ contribution
Ateet Kakti: Research conceptualization and manuscript writing.
Yara Khalid almutawa: Study design and data analysis, manuscript writing.
Shahad Essa AL-Amoudi: Study design and Manuscript writing.
Shahad Fahad Alsulaiman: Study design Manuscript writing.
Reem Abdulaziz Alghofaily: Study design, statistical analysis and Manuscript writing

Conflict of Interest
The authors declare that they have no conflict of interest.

Informed Consent
Appropriate oral and signed consent was taken from the patient before writing this research paper.

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Data and materials availability
All data associated with this study are present in the paper.

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