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Knowledge and Attitude of Dentists towards Teething and Essential Treatment for Teething Toddlers: A Questionnaire Study

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Abstract:-

➢ ***Introduction***

Tooth eruption is the physiological process of movement of teeth from inside the jaw to their position in functional occlusion in the oral cavity. This process starts on average at 6 months of age and can cause local inflammatory symptoms, as well as signs and symptoms in the general health of babies and children.

➢ ***Methodology***

The purpose of the cross-sectional questionnaire study was to assess the knowledge and attitude of dentists toward teething and essential treatment for toddlers. Validated questionnaire on google forms was circulated among the participants via social media. Data from Google forms was entered into excel sheets and SPSS 23 software was used for inferential analysis.

➢ ***Results***

Of the 301 dentists assessed, the study included 54.5% females and 45.5% males, mostly general practitioners aged 26-30 years. Of the participants, 99% were aware of teething, with 89.7% encountering patients. Common symptoms were chewing objects (80.4%) and swollen gums (77.1%). Teething occurs at 4-7 months for 7-8 days. 84.7% recognized eruption problems. 73.4% considered hematoma self-limiting. 82.1% knew pharmacological and non-pharmacological methods. Advice included teething rings (80.7%) and distraction (77.1%). 96% recommended regular dental check-ups. 97.7% felt CDE was needed, and 99.3% wanted better parental guidance on teething management.

➢ ***Conclusion***

The results of the present study help conclude that included dentists had good level of knowledge and attitude toward teething of toddlers.

Keywords:- *Dental Health Services, Diet counseling, Infant, Knowledge. Pregnancy.*

I. INTRODUCTION

Each infant, upon birth, is inevitably progressing through a developmental milestone (whether typical or atypical) in order to adapt to the ecological shifts in the surroundings. The development of infants includes physical, emotional, physiological, and social functions. Objective and readily observable to oneself and others, physical development is very measurable. A physiologically significant component of physical development is the process of teething.[1]

Teething is an inherent and prominent stage in a child's growth, usually taking place between six months to three years of age. Although considered typical, this procedure can cause discomfort and behavioral changes in young children, which may urge caregivers to seek advice on effective management techniques.[2,3] Indications of teething include restlessness, excessive saliva and drooling, facial flushing, fever, inflamed/irritated gingiva, loss of appetite, malaise, malodorous urine, otitis media, painful gingiva/mouth, perioral rash, primary herpetic gingivostomatitis, respiratory problems (including runny nose, congestion, throat infection), restlessness, severe crying, skin rash, sleep disturbance, vomiting, wakefulness, and weight loss.[1]

Dentists, as primary oral health care professionals, play a critical role in teaching parents about teething, its related symptoms, and suitable treatment options. However, there is a paucity of comprehensive studies investigating dentists' knowledge and attitudes concerning teething and the critical therapies they recommend for toddlers.[4]

Understanding the knowledge and attitudes of dentists around teething is crucial for improving pediatric dental treatment. Previous study indicates that many dental practitioners may feel unprepared to diagnose and manage dental discomfort in children, which might influence their capacity to deliver good care during teething episodes.[5] Furthermore, the knowledge gap among parents regarding oral health practices for their children might worsen the

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issues associated with teething, underscoring the need for increased communication and education from dental experts.[6,7]

This study aims to analyze the knowledge and attitudes of dentists about teething and the treatments they believe vital for children during this developmental stage. By adopting a structured questionnaire, the research will gather insights into dentists' perspectives, uncover potential misconceptions, and evaluate their readiness to treat teething-related concerns. The findings will not only contribute to the current research but also inform educational activities targeted at boosting the quality of care offered to young patients and their families. In summary, the present study intends to overcome the information gap in pediatric dentistry surrounding teething, thereby encouraging better oral health outcomes for children during this key period of development.

II. MATERIALS AND METHODS

The study was conducted after obtaining clearance from the Institutional ethics committee (SRB/PEDO24/09/V1). The cross-sectional questionnaire survey was conducted to evaluate the knowledge and attitude of dentists toward teething and essential treatment for toddlers from January 2024 to March 2024. Dentists practicing in Mangalore city were included in the present study.

The questionnaire was prepared using goggle forms and circulated among the participants via social media (WhatsApp). The present study included dentists residing in Mangalore city who consented to participate in the study. Participants who refused to provide informed consent and who did not fill out the questionnaire completely were excluded from the study.

Sample size was calculated by using G* software at 95% confidence and 5% margin of error with a p value of 0.90 based on the previous literature by Panda A et al in 2022 wherein the knowledge and awareness of teething and its management was present in 90% of the dentists[8], a sample size of 300 participants was calculated.

The questionnaire was circulated among dentists in Mangalore and response was obtained from 301 dentists. After explaining the purpose of the study, the participants were requested to complete and submit the questionnaire. The questionnaire was assessed for content validity by 2 subject experts in the field of pedodontics and the questionnaire contents were considered valid to proceed with the study. Demographic data of study participants were obtained using a proforma. Complete anonymity of the participants was maintained at every step of the study. Each and every piece of information was kept confidential and was only reported as group data without any personal information. All information was stored in a safe place, accessible only to individuals actively working on the study. Data from Google forms was entered into excel sheets and SPSS 23 software was used for inferential analysis.

III. RESULTS

The demographic details of the included participants from Figure 1 to 4 showed that it included 54.50% female participants and 45.50% males with most of them belonging to the age group between 26-30 years (34.88%) followed by 20-25 years (21.92%). The participants included mostly of general practitioners (66.80%) when compared to post graduates (33.20%) and of the postgraduates included, most belonged to the department of pediatric and preventive dentistry (17.70%), orthodontics and dentofacial orthopedics (11%), conservative dentistry and endodontics (10.60%) followed by other departments.

The results associated with the knowledge of the participants from table 1 showed that 99% of the participants were aware of teething among toddlers, while 77.4% recall the management of teething being taught during their undergraduate degree and 89.7% of participants had come across patients with symptoms of teething. The most common symptoms encountered were chewing objects (80.4%) followed by swollen gingivae (77.1%), irritability (76.1%), fever (64.5%) and others in smaller proportions. When asked about the first incidence of teething, most of the participants answered that it is usually seen between 4-7 months of age (84.4%) and lasts for 7-8 days (55.8%).

When asked about the different teething problems encountered, 84.7% of participants answered that the conditions observed were eruption hematoma, eruption sequestrum, and ectopic eruption. When participants were enquired on the management of a case of eruption hematoma, 73.4% of the participants considered eruption hematoma to be a self-limiting condition. Participants answered that permanent 1st molar (56.1%) is the tooth most commonly associated with eruption sequestrum. When managing teething, 82.1% of participants were aware of pharmacological, non-pharmacological, and alternative holistic methods in the management of teething among toddlers. The participants were asked on what the employed pharmacological strategies achieved and they responded that a combination of analgesia, anesthesia and sedation was achieved (68.4%). When asked about the different advice provided by them to manage the teething related symptoms, most of the participants preferred advice for symptom management which included teething rings (80.7%), distraction/comfort (77.1%), and rubbing gums (74.4%)

Responses to attitude related questions from table 2 revealed that when asked about what advice was to be provided to parents regarding to the dental care of the toddler, most of the participants considered regular check ups to be the most important (96%) followed by oral hygiene practices (91.4%), nutritional guidance (83.1%) and fluoride and water (71.8%). Most participants (97.7%) believed that there was a need for continuing dental education (CDE) on this topic among dental professionals while also believing that there is a need for better guidance for parents on the management of teething (99.3%).

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IV. DISCUSSION

The study aims to analyze the knowledge and management strategies surrounding child teething symptoms among dentists residing in the city of Mangalore, Karnataka. Previous evidence suggests that despite teething being a natural phase of newborn development, there is surprisingly little known about the causes and management of teething signs and symptoms even though teething is considered as a discomforting process for the child.[9,10]

The demographic details showed that most of the participants belonged to the age group between 26-30 years (34.88%) followed by 20-25 years (21.92%) which showed that the study included a majority of dentists in the early stages of their career.

Results associated with knowledge showed that almost all participants were aware of teething among toddlers with more than three quarters recalling the teething management taught during their undergraduate degree and 89.7% of participants had come across patients with symptoms of teething. An older study reported that most participants (76%) could not recall teething being taught in their undergraduate studies which is dissimilar to that observed in the present study.[11] This variation can be explained by the different populations included in the two studies.

Common symptoms encountered included chewing objects, swollen gingivae, irritability, fever followed by other symptoms in smaller proportions. This contrasted the results of a previous study wherein symptoms such as irritability, increased salivation, runny nose, loss of appetite, diarrhoea, rash, sleep disturbance and gum rubbing were most apparent among teething toddlers.[12] This divergence can be explained by McDonald et al. who described tooth eruption as a natural process, which does not support its relationship with fever and systemic diseases. Fever and respiratory tract infections in this period of life may arise at the same time as eruption but are not connected with it.[13]

With regard to the first incidence of teething, most participants answered that it is usually seen between 4-7 months of age and lasts for 7-8 days which was an accurate answer. Eruption hematoma, eruption sequestrum, and ectopic eruption were the most common condition associated with teething encountered with most of them answering that it is a self-limiting condition. Most participants answered that permanent 1st molar is the tooth most commonly associated with eruption sequestrum. Participants were aware of pharmacological, non-pharmacological, and alternative holistic methods in the managing teething among toddlers with pharmacological strategies achieving a combination of analgesia, anesthesia and sedation. Memarpour et al, in their previously conducted study; provided two main techniques - pharmacological and nonpharmacological - which have been recommended as treatments during tooth eruption. Non-pharmacological therapies were employed because of the parents' views towards employing cures which do not risk their child's health. According to their results, some approaches such as teething rings, hug therapy and stroking the gums were more helpful than others. However, none of the strategies was totally helpful in dealing with all the teething difficulties that was reviewed.[14]

Responses on the management the teething symptoms showed that it included teething rings, distraction/comfort, and rubbing gums. Teething rings and stroking the gums reduced gingival inflammation and finger sucking. The pressure created by biting teething rings or pacifiers and gingival massage may alleviate pain by overwhelming the sensory receptors. Biting or sucking cold or frozen objects such fruits, vegetables or other foods promotes localized vasoconstriction and minimizes inflammation; in addition, the pressure on the gums lessens discomfort. However, it is indicated that these therapies should be utilized only for youngsters who are able to ingest solid foods. Also, foods that are excessively firm should not be utilized, to avoid pain caused by bruising the gum. Moreover, parental attention is important to prevent choking on little pieces of food.[11,12,15]

The results from the knowledge-related questions indicate a high level of awareness and experience among participants regarding teething in toddlers. A questionnaire-based study on Paediatric Dentists' knowledge of teething signs, symptoms and management indicated that while most pediatric dentists in the UK were aware of common teething symptoms, there were gaps in their knowledge regarding accessible professional resources and guidance. This coincides with the current study's purpose to analyze dentists' knowledge and attitudes concerning teething and critical therapies.[16]

Attitude related responses showed that most of the participants considered regular checkups, oral hygiene practices, nutritional guidance and fluoride water to be the most important step in the dental care of the child. Most participants also believed that there was a need for continuing dental education (CDE) on this topic among dental professionals with parents needing better guidance on the management of teething. The attitude-related questions demonstrate a broad consensus on the need of dental care and education surrounding teething. Previous study has revealed that there was a lack of understanding regarding current rules on teething, yet these standards do not offer clear information to help decision-making. Creation and extensive dissemination of guidelines on teething is recommended.[11]

The drawbacks of the present study include the lack of association of responses to variables that could help in assessing the different ways that the knowledge of the dental professional could be increased. The advantages of the present study included the huge sample size that can provide responses from a wide range of professionals to ensure better results. The results of the present study help us infer that dental professionals are very knowledgeable on the different signs, symptoms and management of teething among infants which should translate to better outcomes when diagnosis and treatment of children who present with

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the condition. However, further research can be encouraged to ensure that the dentists are aware of the different guidelines involved in the treatment of teething. Furthermore, it has been demonstrated the value of evaluating both parental and dental professionals' knowledge to provide comprehensive care for young children which includes teething as well which can be studied more to design an intervention for the same.[17]

V. CONCLUSION

In summary, the study highlights that undergraduate and postgraduate dentists were knowledgeable on the topic of teething among infants. However, there is a lack of information on specific guidelines for management which can be worked upon. The results also help understand that collaboration between pediatric dentists, general dentists, and pediatricians is important to provide consistent, evidence-based guidance to parents on this common childhood issue

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TABLES

Table 1: Table Enumerating the Results of Knowledge Related Questions among Participants

Are you aware of teething among toddlers?	
Yes	99%
No	1%
Do you recall the management of teething being taught during your undergraduate degree?	
Yes	77.4%
No	22.6%
Have you come across a patient with symptoms of teething?	
Yes	89.7%
No	10.3%
What are the usual symptoms of teething that you have encountered?	
Fever	64.5%
Drooling	54.8%
Irritability	76.1%
Flushed cheeks	53.5%
Swollen gingivae	77.1%
Bowel disruption	44.5%
Chewing objects	80.4%
Coughing	19.9%
Others	18.3%
What is the age when teething usually is seen?	
4-7 months	84.4%
10-12 months	13.3%
12-18 months	2.3%
For how many days is the teething period is seen usually?	
7-8 days	55.8%
10-12 days	35.5%
14-16 days	8.6%
Teething problems include?	
Eruption hematoma	10.6%
Eruption sequestrum	3.7%
Ectopic eruption	1%
All of the above	84.7%
How do you manage a case of eruption hematoma?	
It is a self-limiting condition	73.4%
Management with pharmacological methods	20.3%
Management with surgical methods	6.3%
During the eruption of which teeth is eruption sequestrum seen usually?	
Primary 1st molars	23.3%
Permanent 1st molars	56.1%
Primary incisors	15.3%
Permanent incisors	5.3%
Which are the different methods of managing teething that you are aware of?	
Pharmacological methods	8.3%
Non pharmacological methods	8%
Alternative holistic medicine	1.7%
All of the above	82.1%
What do pharmacological strategies aim to achieve?	
To achieve analgesia	26.9%
To achieve anesthesia	3.7%
To achieve sedation	1%
Combination of the above	68.4%
Which of the follow would you prefer to advise for the management of symptoms of teething?	
Distraction/Comfort	77.1%
Use of a dummy	67.1%
Rubbing gums	74.4%

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Teething rings	80.7%
Hard food to chew	60.5%
Homeopathic teething gels/powders	29.6%
Non homeopathic teething gels	22.6%
Age appropriate dosage of oral systemic analgesia	46.8%
Other	15.6%

Table 2: Table Enumerating the Results of Attitude Related Questions among Participants

What advice should be given to parents regarding the next steps in dental care for the child?	
Regular dental check ups	96%
Oral hygiene practices	91.4%
Nutritional guidance	83.1%
Fluoride and water	71.8%
Do you feel there is a need for continuing dental education (CDE) on this topic for dental professionals?	
Yes	97.7%
No	2.3%
Do you feel that is there need for better guidance for parents on the management of teething?	
Yes	99.3%
No	0.7%

FIGURES

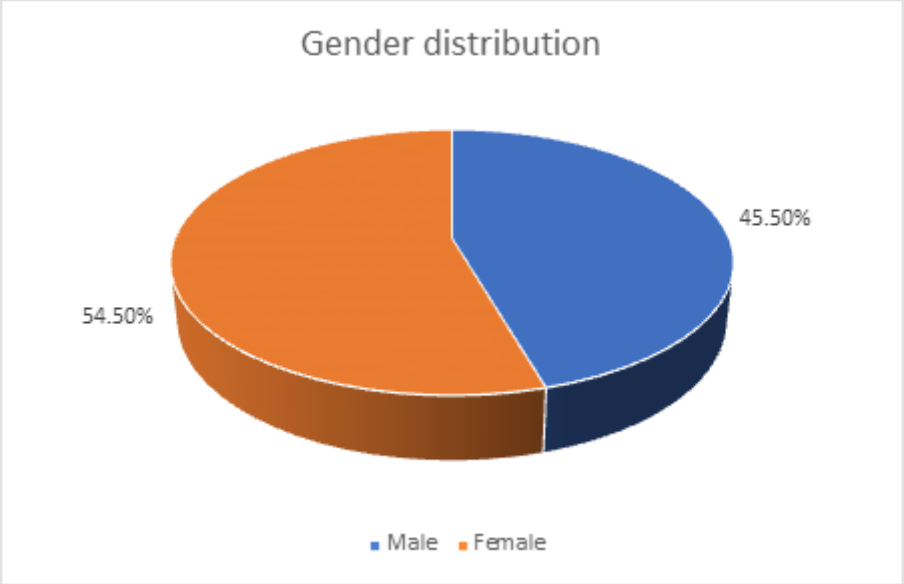

Fig 1: Pie Chart Depicting the Gender Distribution

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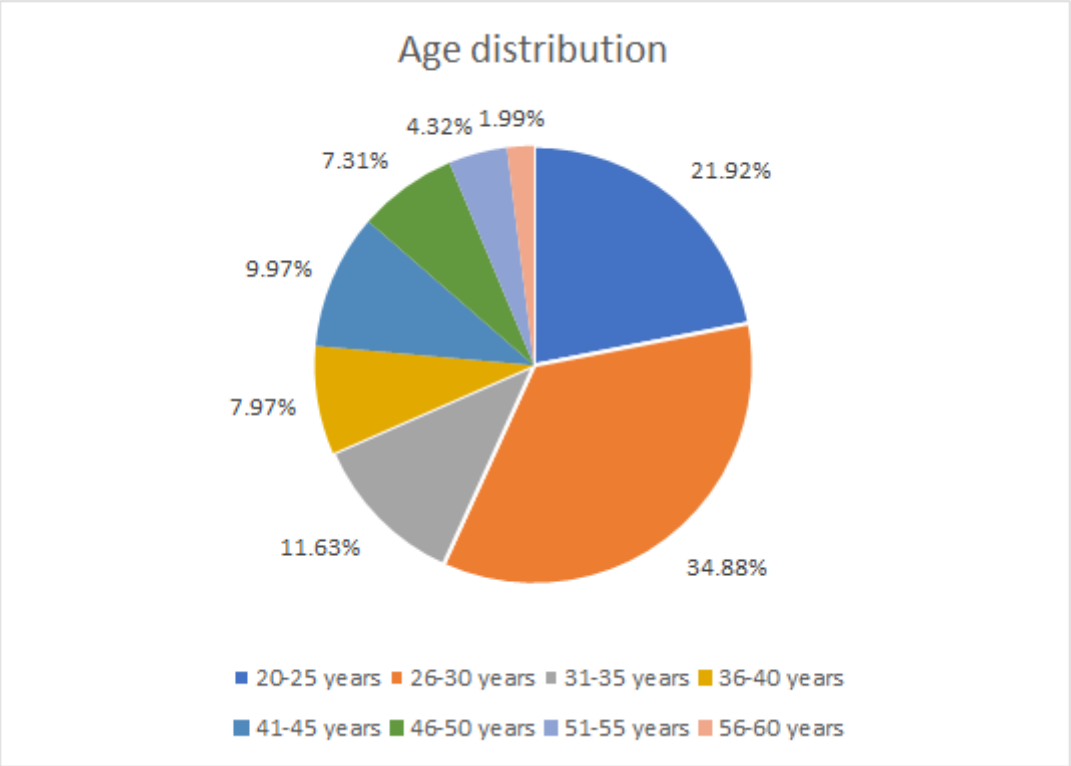

Fig 2: Pie Chart Depicting the Age Distribution

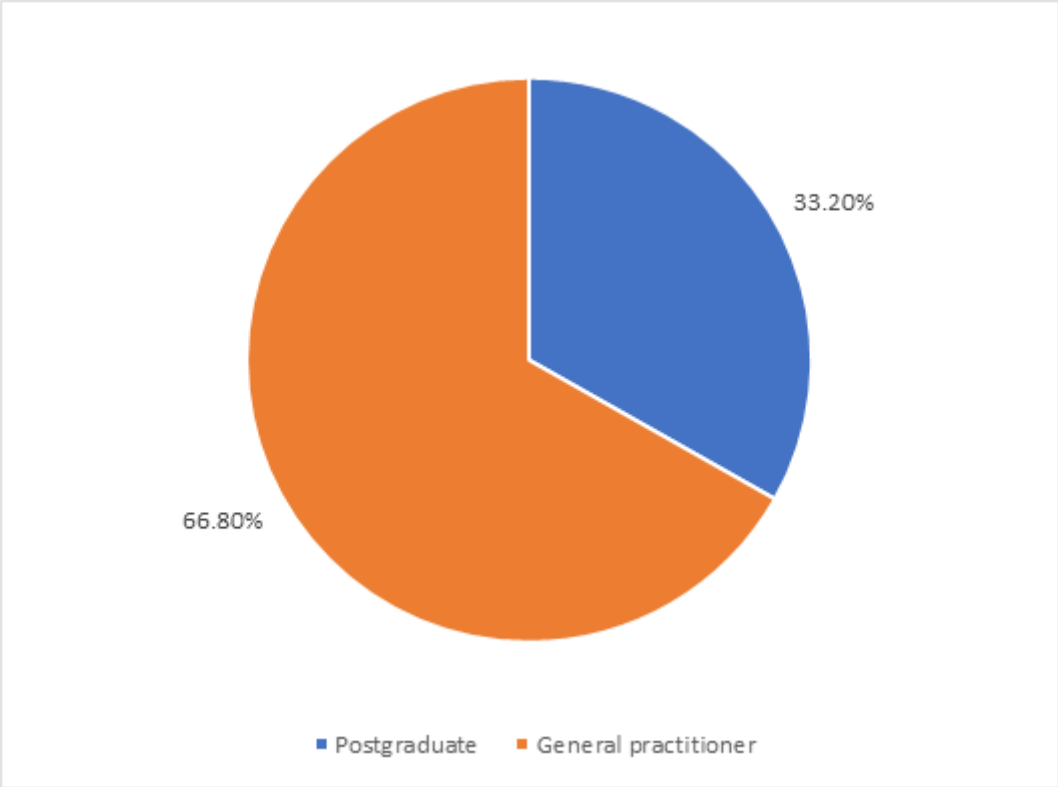

Fig 3: Distribution of Different Education Levels of Dentists in the Study.

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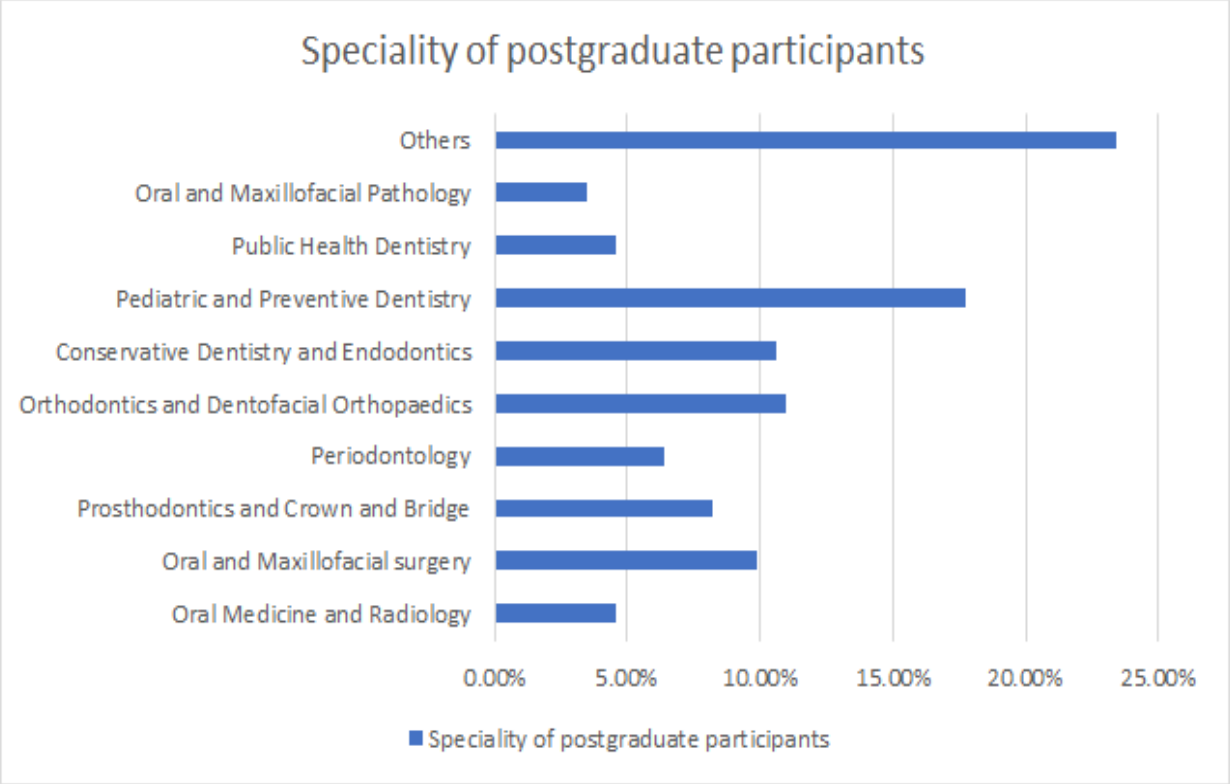

Fig 4: Distribution of Different Speciality of Postgraduate Participants