Emergencies and/or Urgencies faced by Orthodontists in sullia, D.K. during Covid-19 Pandemic: A questionnaire study

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Abstract: Introduction: The present study aimed to evaluate the most common urgencies and emergencies in orthodontics during the coronavirus disease 2019 (COVID-19) pandemic and to assess how orthodontists in Sullia (Dakshin Kannada) were dealing with patients and challenges. Methods: Early in 2020, as the COVID-19 pandemic spread around the world, routine dental care was suspended in many countries, and only patients needing urgent or emergency care could be seen. During this period, orthodontists in sullia were invited to participate in an anonymous online survey. They answered questions regarding dental office and appointments during the pandemic, the type of urgency or emergency care provided the type of appliance and urgencies, etc. The level of concern about the impact of the pandemic on patient's orthodontic treatments and the financial impact on the dental office was also evaluated Results: Most orthodontists were handling only emergencies or urgencies. The most frequent urgencies were bracket breakage, archwire breakage, and breakage of molar tubes and/or bands. Stainless steel fixed appliances were the most common type of appliance related to scheduled appointments. The majority of patients got in touch with the orthodontist using the professional WhatsApp messenger (WhatsApp Inc, Menlo Park, Calif). Orthodontists were more concerned with the financial impact of the pandemic than with the orthodontic treatment itself. Conclusions: Breakage of brackets, archwires, or tubes and/or bands was the most common causes of urgency and/or emergency appointments during the pandemic. The level of concern about the financial impact of the stay-at-home orders and the COVID-19 pandemic was significant.

Keywords: ***assessment; emergency/urgency; covid-19; orthodontic treatment.***

INTRODUCTION

During orthodontic treatment (which usually lasts between 2 and 3 years), patients are required to wear a variety of removable and fixed appliances, and about 85% of patients experience some kind of urgency during their treatment period.

Emergencies generally involve risk of death and urgencies do not. However, in dentistry, any dental problem that requires immediate treatment to save a tooth, stop ongoing tissue bleeding, or alleviate severe pain is considered a dental emergency. Orthodontic emergencies are rare, but orthodontic urgencies problems arising from orthodontic appliances or accessories, in which a timely additional appointment is required—are not uncommon. In India, according to the Code of Consumer Protection Act, the dentist is considered a supplier of services and has the obligation to be well-prepared to offer a service to the patient. Orthodontists are responsible (regardless of the existence of guilt) for compensating any damage caused to the consumer related to poor service or insufficient or inadequate information on the provision and risks of these services.

With the pandemic caused by the coronavirus disease 2019 (COVID-19) outbreak in the world, specific guidelines are constantly published and updated by the World Health Organization, National Institutes of Health, National Ministries of Health, and national councils for each professional area. Routine dental care was suspended in many countries as governments sought to halt the spread of COVID-19. In India, the Dental Council of India presented

guidelines for evaluating dental urgency and emergency during the coronavirus pandemic. Dentists were advised to manage urgencies and emergencies only; however, the professional can decide to maintain the opening of dental offices or to care only for patients with urgencies or emergencies.

In orthodontics, urgencies—such as breakage of appliances, brackets, or tubes—are not life-threatening, but it is advised to resolve them quickly or to avoid prolonging the treatment time, decreasing the patient motivation, and losing the patients' confidence in the orthodontist. Appropriate handling of orthodontic urgencies will provide relief from pain and distress for the patient.

All dental professionals are feeling a moral duty to reduce routine care for fear of spreading the COVID-19 disease among patients, their families, and community, but are concerned about the financial consequences.

The objective of this survey was to evaluate the most common orthodontic urgencies and emergencies during the initial months of the coronavirus pandemic in India and to assess how orthodontists are dealing with patients and the challenges of the current scenario.

MATERIALS AND METHODS

A Google Forms questionnaire was sent to about 50 orthodontists from sullia (Dakshin Kannada), most of who graduated from RGUHS University, through WhatsApp Messenger App (WhatsApp, Inc, Menlo Park, Calif). The orthodontists were not identified.

Sample size calculation:

Sample size calculation was performed with a confidence interval of 95% and a margin of error of 5%. Considering that the population of orthodontists in dakshin Kannada district of Karnataka is approximately 50, conducting a questionnaire would require at least 45 subjects and/or answers.

Statistical analysis was performed with Statistical software (version 10.0; Statsoft, Tulsa, Okla), and results were considered significant at $P < 0.05$.

Following were the components of the questionnaire

- Sex:

1. Male
2. Female

- How were the appointments in your dental clinic during pandemic time?

1. Routine care appointments
2. Only emergency or urgency
3. Dental clinic closed

- Which types of orthodontics appliance have caused the most emergency or urgency?

1. Stainless steel fixed appliances
2. Aesthetic fixed appliances (sapphire or porcelain and/or ceramic)
3. Self-ligating fixed appliances
4. Removable retention appliances
5. Fixed retentions
6. Removable orthopaedic Appliances
7. Fixed functional appliances
8. Fixed expansion appliances
9. Orthodontic accessories
10. Aligners

- Did you face any emergencies related to orthodontic accessories?

1. Yes
2. No

- If so, what type of accessories?

1. Intermaxillary elastics
2. Mini-implants
3. Miniplates
4. Kobayashis
5. Extraoral appliances
6. Others

- What were the most frequent urgencies or emergencies you handled in your office during this period?

1. Brackets' breakage
2. Breakage of molar tubes and/or bands
3. Metallic ligatures causing injuries
4. Breakage of archwires or causing injuries
5. Loss of elastic ligatures
6. Breakage of removable appliances or aligners
7. Breakage of fixed expansion or fixed functional appliances
8. Breakage of fixed Retention
9. Emergencies related to poor oral hygiene
10. Emergencies related to tooth movement

- How did your patient get in touch to schedule the emergency care? Select all the alternatives that apply:

1. Social networking websites.
2. WhatsApp.
3. Friends
4. Directly to me

- How did you provide care?

1. With staff
2. Without staff

- Are you concerned about the financial impact of the pandemic on your dental practice?

1. Yes
2. No

Results:

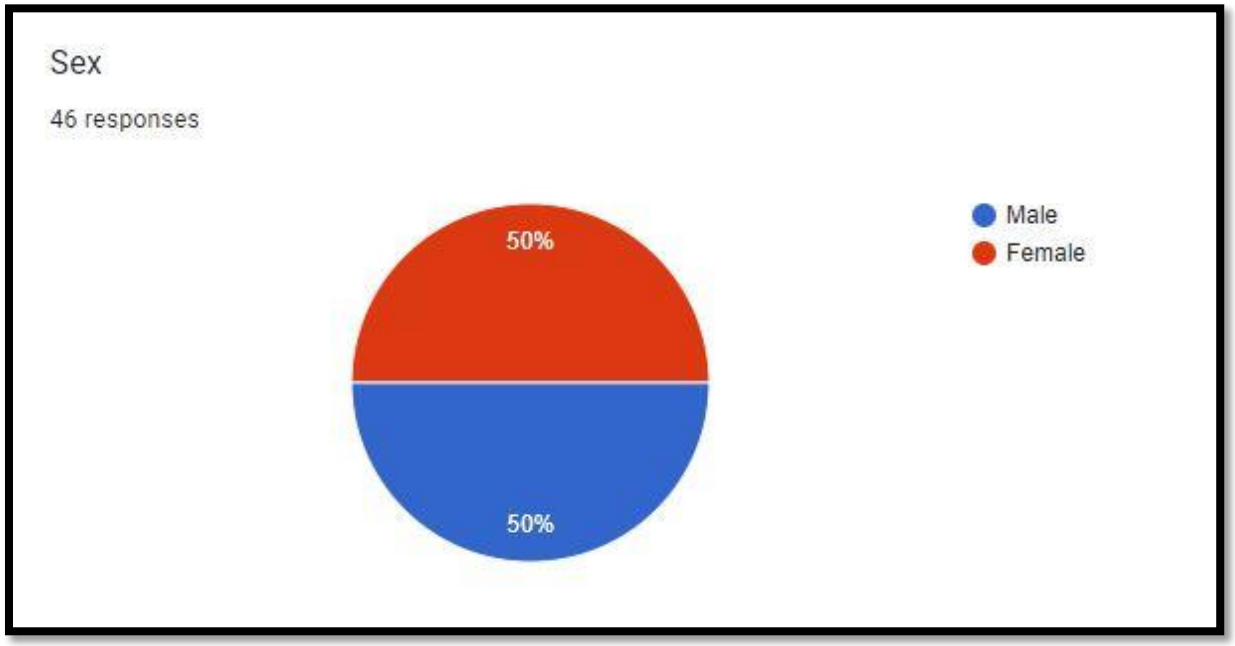

Fig.-1: Sex of the participant.

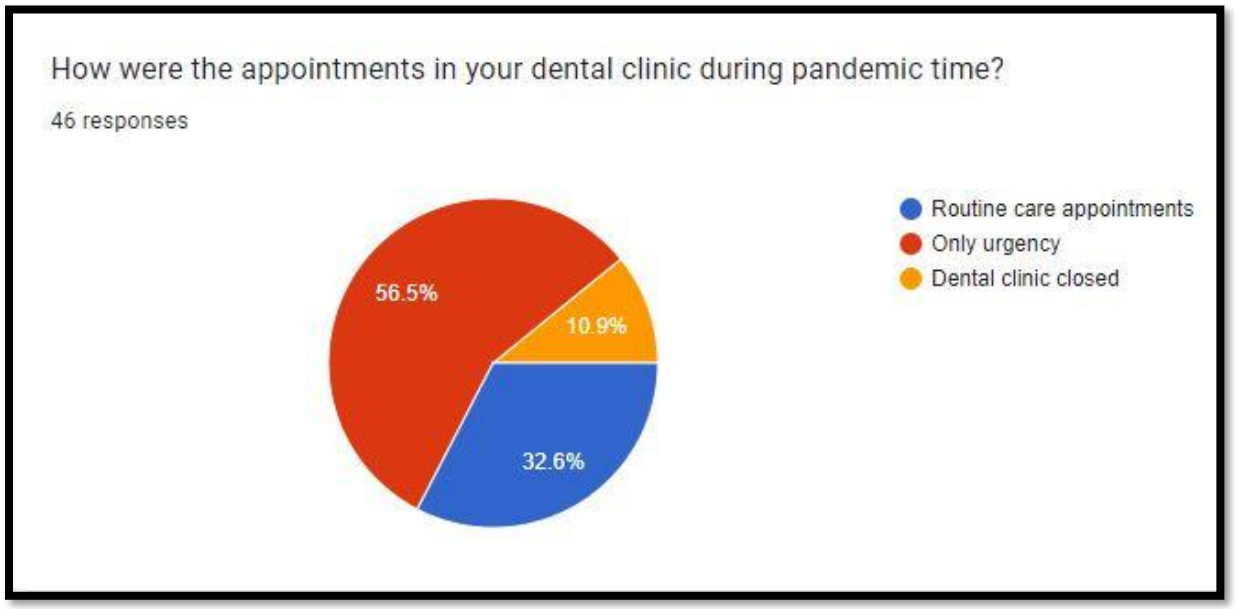

Fig.-2: Appointments in dental clinic during pandemic time.

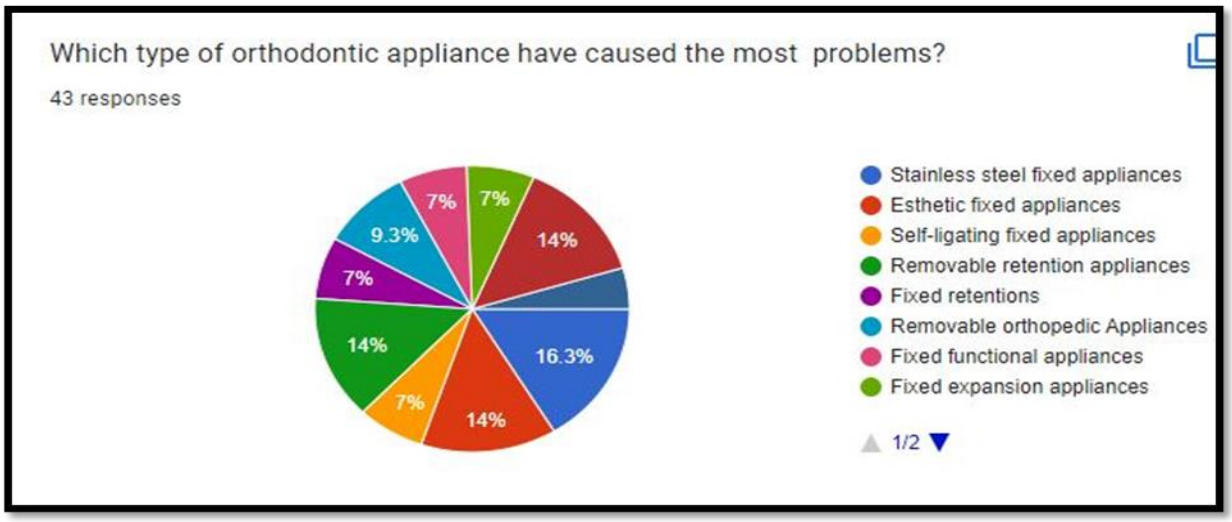

Fig.-3: problems caused by orthodontic appliances.

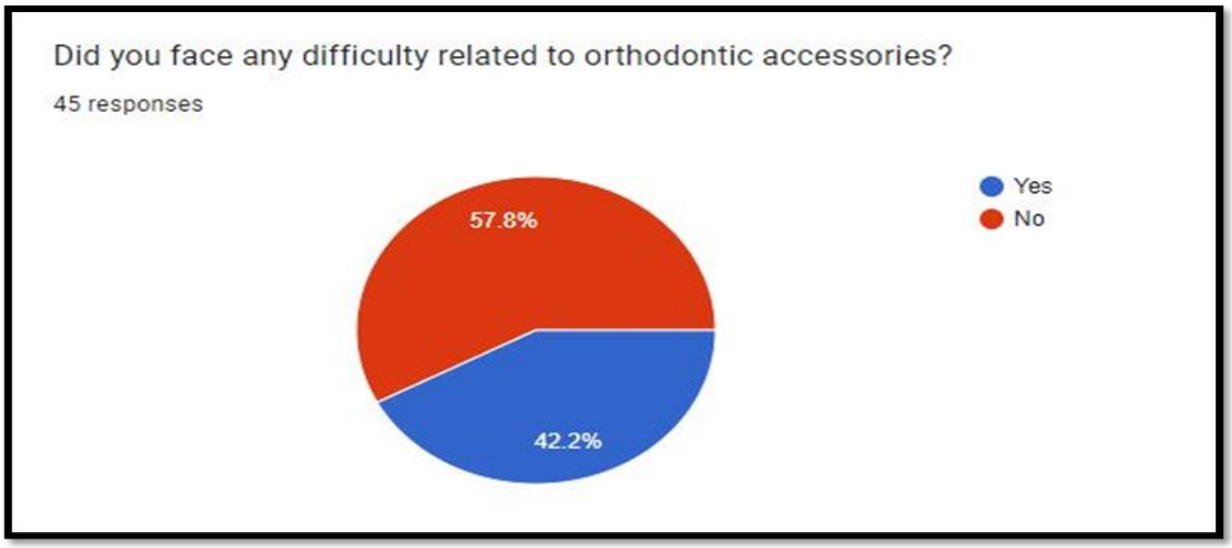

Fig.-4: Difficulty related to orthodontic accessories.

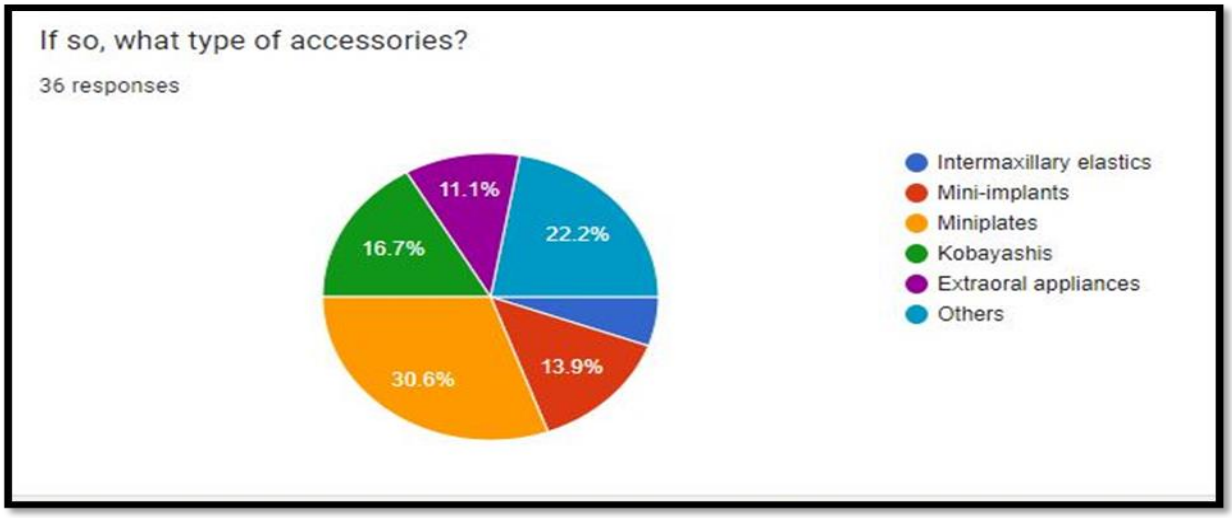

Fig.-5: Accessories which created maximum problems.

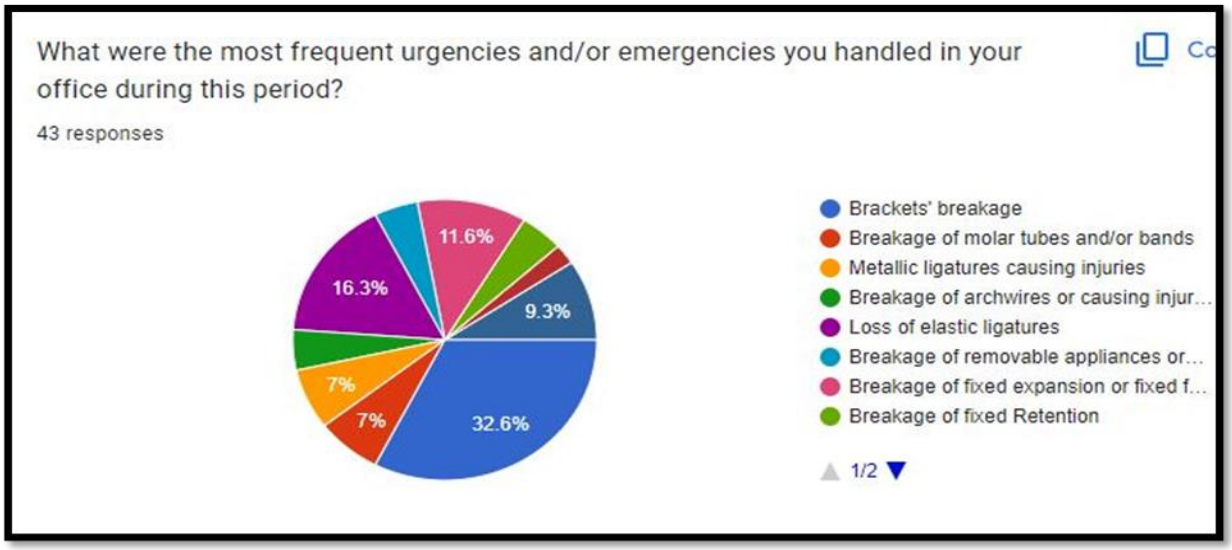

Fig.-6: Most frequent urgencies and/or emergencies during covid period.

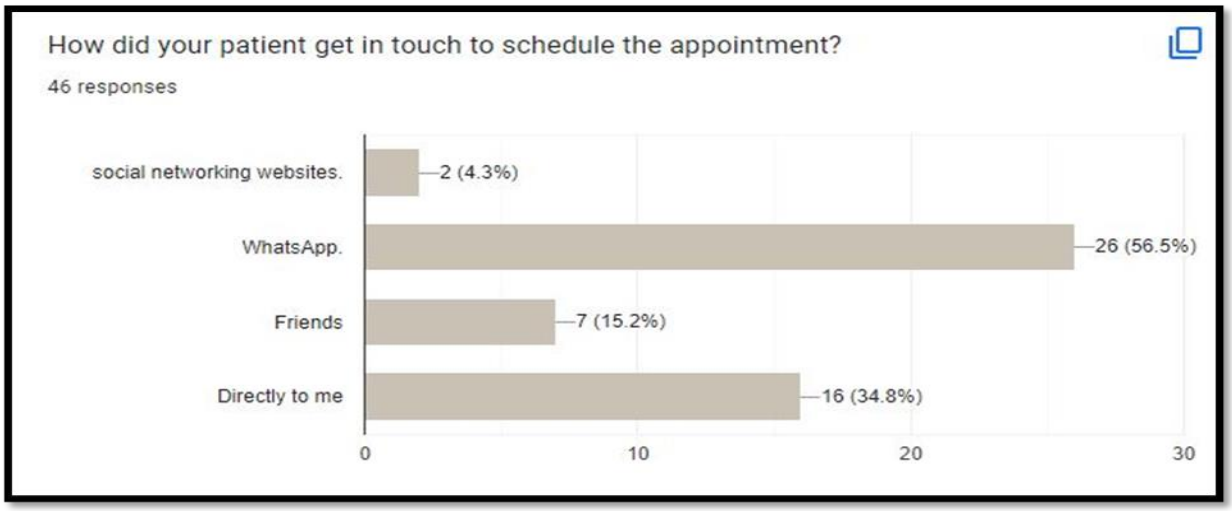

Fig.-7: Scheduling of appointment.

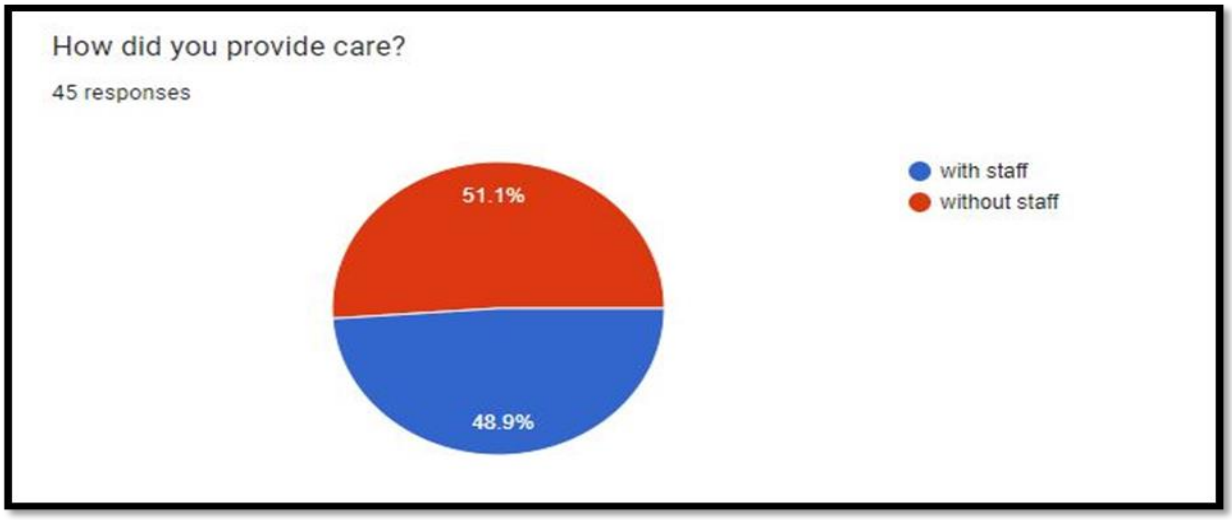

Fig.-8: How care was provided during the pandemic time?

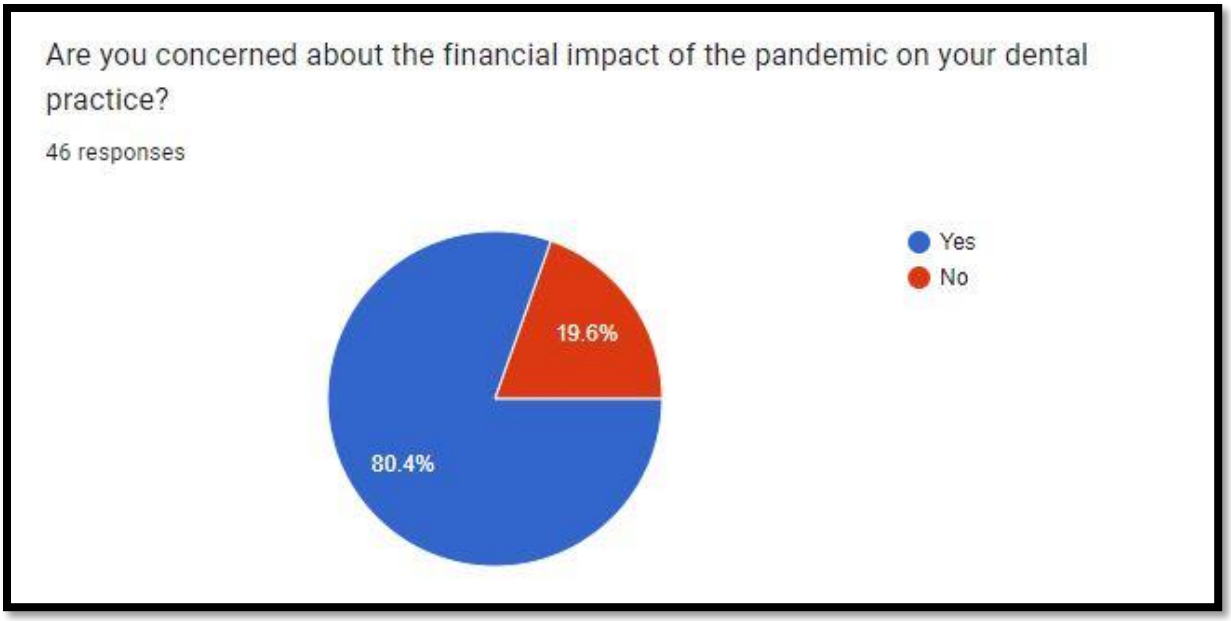

Fig.-9: Concern of the financial impact due to pandemic.

46 orthodontists answered the questionnaire, most orthodontists (56.5%) are handling only emergencies and/or urgencies, 32.6% maintained the routine orthodontic appointments, and 10.9% closed the dental offices and are not working since the quarantine was recommended. Regarding the type of appliances that caused most urgency in orthodontics, 16.3% of the orthodontists mentioned urgencies related to preadjusted stainless steel fixed appliances, followed by esthetic fixed appliances (16.0%), orthodontic accessories (14%), fixed retentions (14%), fixed expansion appliances (7%), and self-ligating appliances (7%). Removable retainers and orthopedic removable appliances, fixed functional appliances, and aligners were mentioned by 10% of the orthodontists. The most frequent urgency that resulted in patients requesting additional orthodontic care was bracket breakage (32.6%) followed by loss of elastic ligature (16.3%), and fixed expansion or fixed functional appliance (11.6%). The other urgencies were mentioned by 20% of the orthodontists and included the following: metallic ligature causing injuries (19.1%), loss of elastic ligatures (15.8%), breakage of fixed retention (15.3%), breakage of fixed expansion appliances (13.1%), poor oral hygiene problems (12.8%), breakage of removable appliances or aligners (8.7%), and urgencies related to tooth movement (6.8%). Only 31.3% reported urgencies related to orthodontic accessories.

DISCUSSION

It is known that effective management of orthodontic appliance problems should minimize disruption to the normal course of treatment and prevent future problems from occurring. In the current worldwide situation, stay-at-home orders have been proposed in several countries, and orthodontists were prevented from performing face-to-face conventional orthodontic care. However, some urgency can cause a significant delay in treatment progress, besides somehow injuring the patient.

In a recently published article, patients' greatest concern was the delay in the end of orthodontic treatment. There were more female than male respondents, reflecting the proportion of registered orthodontics specialists in Karnataka. The percentage of female orthodontists continued to rise, reflecting the recent trend in postgraduate education. In addition, women are more willing to participate in researches. Most participants were aged 21-40 years. Because the questionnaire was sent through WhatsApp, the youngest respondents represented the majority of participants. In addition, several studies that included a survey of dental professionals showed the same age pattern of respondents.

Most orthodontists were handling only emergencies and/or urgencies. A systematic review showed that some knowledge gaps existed among dental professionals regarding emerging infections that affect the respiratory tract. Amid so much information, some dental professionals followed the stay-at-home recommendations of their cities and/or states, delaying non urgent care, others considered dentistry as an essential activity and continued their care normally, and some only provided care which could not be delayed. Preadjusted stainless steel fixed appliances were responsible for most of the urgencies reported by orthodontists, followed by esthetic fixed appliances .Preadjusted appliances are by far the most popular fixed appliances during the past 3 decades, and stainless steel brackets remained the most common worldwide,

Followed by ceramic brackets. Keim et al showed that overall, 63% of the clinicians use some kind of self-ligating system, and 20% use esthetic brackets.

Thus, the appliances that caused the emergencies followed the trends of the most used appliances. Some types of active orthodontic mechanics, active expanders, and functional appliances need closer and frequent monitoring because they can cause problems with continuous unsupervised use. However, in the present survey, they were not reported by orthodontists as frequent urgencies. Maybe because, when the survey was carried out, stay-at-home orders had been recommended for 2 months, so some specific orthodontic urgency, related to tooth movement and some active appliances without supervision, did not have enough time to occur. Unfortunately, orthodontic appliance breakage does occur, despite the clinicians giving clear and concise

Instructions to the patients and their parents. The most frequent orthodontic urgency found was bracket breakage, which is also the most reported in the orthodontic literature. Archwires that needed to be retied or replaced were also reported. Jones et al reported that only 13%of the total urgencies were related to archwire problems. This finding may be due to the study being a College-based survey, and the patient access to the urgency service was not as easy as talking directly to the dental office team. Moreover, certain teeth have a greater predilection for failure than others, with potential reasons including increased masticatory loading, poor oral hygiene, and inappropriate diet. WhatsApp messages were the most common way of communication between the patient and the dental team (56.5%). Recent studies showed that smartphones provided fast and clear access to electronically mailed digital images and allowed professionals free mobility, not restricted by the constraints of a desktop personal computer. In this context, it is important to consider remote monitoring and teleorthodontics concepts and applications, such as the remote provision of orthodontic care, advice, or treatment using information technology. Many of the urgencies reported by the orthodontists in this survey could be solved with remote consultations without the need of a scheduled urgency appointment, by teleorthodontics. Orthodontist's were more concerned with the financial impact of the pandemic on the dental office than in relation to orthodontic treatment of their patients. It must be argued that financial worry overrides the concern with the treatment itself because the nature of the orthodontic treatment allows spaced appointments, and also because urgency appointments are allowed. Furthermore, we are facing a health and economic crisis of unprecedented proportions, because pandemics often result in global recessions. The paralysis of the economic activities in a developing country such as India has devastating effects that will cause a long lasting recession. Unlike developed countries, such as the United States, where dentists have had significant government assistance, like paycheck protection program and loan forgiveness, here in India, we do not. Upon our restart, our dental offices are reflecting the financial recession that all business offices in India have been showing. Thus, it was expected that the financial impact of the pandemic would be of great concern to orthodontists and dentists in India. Because of the measures enacted to stop the spread of this pandemic, a sharp decrease in consumer and business spending until the end of 2020 is expected. In addition, the orthodontists' financial concern relies on the fear of not receiving payment from patients and the overhead costs to provide a safer working environment to the patients, staff, and themselves. This outcome will potentially reduce the orthodontist profit margin even further. Recent surveys showed similar results, indicating that dentists fear economic losses and nonpayment of salaries to their employees, expecting a financial loss of.70%amid the COVID-19 outbreak. However, in developed countries where

professionals have government assistance and the economy is strong, the concerns of orthodontists are probably different from those found in the present survey.

The main objective of this survey was to identify the most common orthodontic urgencies that orthodontists faced during the early stage of the COVID-19 pandemic. Many patients will need urgency orthodontic conventional care, but some of these urgencies certainly can be avoided with high-quality remote care, and orthodontists should be able to provide it to their patients.

CONCLUSIONS

Breakage of brackets, archwires, or tubes and/or bands were the most common causes of urgency and/ or emergency appointments during the covid 19 pandemic

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