



Astronaut Era: Does Your Child Patient Accept Your New Look and Practicality of Using Behaviour Modification Techniques in COVID Times?

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: The coronavirus (COVID-19) has challenged health care professionals and dental professionals play a pivotal role in preventing transmission of COVID 19.

Aim: This study aimed to evaluate the knowledge, attitude, skills and preparedness of Pediatric dentist in managing a case in their dental operatory in COVID times.

Materials and Methodology: A cross-sectional survey was carried out in June 2020 on 52 dental specialists who were contacts of invigilator and had done post graduation in Pedodontics and Preventive Dentistry at Delhi NCR or were practicing Pedodontist in Jammu & Kashmir. A 10 question based questionnaire was developed to assess their knowledge, awareness and skills. Data were subjected to appropriate statistical measures and analyzed.

Result: Amongst 52 Pedodontist who took part in survey 23.08% were pedodontist with experience of three and more years where as 53.85% were still undergoing postgraduation in the speciality of Pedodontics and Preventive Dentistry. 100% of pediatric dentist thought its pre requisite to screen the temperature of all the children and attendants using infrared thermometer before taking proper history and thought of conducting examination only after a preprocedural

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mouthrinse of 1% hydrogen peroxide.

Conclusion: An aware and knowledgeable pedodontist following the latest guidelines can handle children well in situation where behaviour modification techniques are hampered due to use of PPE(Personal Protective Equipment). It is important to educate all the patients about coughing etiquettes and the dental professionals about modification required in a dental clinic set-up for managing cases requiring urgent dental care.

Keywords: COVID-19; PPE; urgent dental care.

1. INTRODUCTION

COVID-19 caused by SARS-CoV-2 was declared as pandemic by World Health Organization (WHO) on March 11 2020 with substantial numbers of infected cases and deaths reported in many countries and dentist were asked to follow cross-contamination protocols to decide on the treatment of emergency cases in such critical times [1].

The conditions requiring urgent dental care in such a crisis are presence of swelling compromising swallowing/ breathing or extending eye with pyrexia, traumatic dental injuries of permanent dentition like avulsion, luxation and injuries of primary dentition causing mobility posing airway risk or interfering with occlusion, uncontrolled bleeding and severe pulpitis interfering with sleep and not responding to over the counter analgesics [2].

PPE (Personal Protective Equipment) is a protective barrier/clothing , helmets, goggles, face shield, mask,gloves,coverall/gowns, headcover ,shoe cover to protect wearers body from injury and infection and in case of COVID-19 airborne particulate matter respiratory droplets (>5-10 micrometer) and droplet nuclei (<5 micrometer) which are primary route of transmission [3]. The use of class FFP3 disposable respirators when carrying out clinical procedures which generate aerosols offers a filtration rate of 99% of all particles measuring upto 0.6micrometer [4].

Data Collection

1. What is your gender? A. MALE B. FEMALE

QUESTIONNAIRE	A	B	C
2.How many years of experience post graduation in the speciality of Pedodontics and Preventive Dentistry?	Still undergoing MDS in pedodontics	Less than 2 years of experience	Three or more than three years of experience

Tell play do, mobile dental app ,audiovisual distraction ,visual reality are the recent behaviour management techniques aimed to nurture pedodontist child relationship to alleviate fear and anxiety however PPE form as a barrier in non verbral communication making treatment difficult during COVID times [5]. This study was done to assess the skills, knowledge, awareness ,difficulties in communication and preparedness of pedodontist in handling dental cases in COVID times.

2. METHODOLOGY

A cross-sectional study was conducted through a whatsapp based questionnaire on 52 dental specialists who had done their Masters in Pedodontics and Preventive Dentistry in Delhi-NCR or were practicing as Pedodontist in Jammu and Kashmir. The survey was conducted in two phases (survey tool development and data collection) for a period of 3 days to the contacts of the primary investigator.

2.1 Survey Tool Development

A 10 item questionnaire was framed on dental specialist background such as gender and professional years of experience and to check preparedness of managing a pediatric case in COVID times . A 3-point scale was made to analyze the attitude , awareness, knowledge and skills of dental specialists by marking options A ,B and C . In the study to remove any bias the setting of the survey was such that one device could only take the survey once.

3.Do you think its mandatory to screen the temperature of all the children and attendants using infrared thermometer before taking proper history and conducting examination only after a preprocedural mouthrinse of 1% hydrogen peroxide?	Yes I agree	No I don't agree	Neutral
4.Will you do a preprocedural verbal telecommunication session via a video call with a child patient rather than after wearing a PPE?	Yes I agree as PPE is going to hamper my non verbal communication with the child	No I disagree and I don't think it will help in alleviating anxiety	Neutral
5.Do you advocate using childs favourite color PPE kits with masks and face shield with cartoons to decrease procedural anxiety due to your look?	Yes I agree	No I disagree	Neutral
6.Do you think rewarding a child with mini PPE kits with cartoon masks and symbolising it with astronaut in the space will influence the cooperation of child during the process of treatment?	Yes I agree	No I disagree	Neutral
7.In the present scenario will behaviour management modification like modelling, tell show do, tell play do,nonverebal gestures like pat ,mobile distraction ,virtual reality and long sessions of verebal communication be hampered?	Yes agree	No I disagree	Neutral
8.Do you believe that prescheduling of patients, separate entry and exit of dental operatory and modification of waiting room with proper ventilation will be need of hour in COVID times?	Yes I agree	No I disagree	Neutral
9.Will procedures like Halls technique, use of silver diamine fluoride, atraumatic restorative treatment, lasers and use of remineralizing agents will be preferred over drilling on multiple carious lesions?	Yes I agree	No I don't agree	Neutral
10.Do you agree the child should properly drapped in gown with headcap, mask and gloves before entering dental operatory and taught proper coughing etiquettes?	Yes I agree	No I don't agree	Neutral

2.2 Statistical Analysis

The dental specialists knowledge, awareness about recent guidelines, skill, and attitude on managing a pediatric case in dental operatory in COVID times by 3 options for each of the following 10 questions.

3. RESULT

Out of n= 52 dental specialists who took part in survey 19.23% (n=10) were male and 80.77% (n=42) were female (Fig. 1) (Table1).

23.08% were pedodontist with experience of three and more years and 53.85% were still undergoing postgraduation in the speciality of Pedodontics and Preventive Dentistry (Fig. 2) (Table 1).

100% of pediatric dentist thought its mandatory to screen the temperature of all the children and attendants using infrared thermometer before taking proper history and thought to make preprocedural mouthrinse with 1% hydrogen peroxide or 0.2% povidine a prerequisite before examination (Fig. 3) (Table 1).

84.62% agreed that a preprocedural verbal telecommunication session via a video call with a child patient rather than after wearing a PPE is better as PPE hampers non verbal communication skills (Fig. 4).

80.77% thought using childs favourite colour PPE kits with masks and faceshield with cartoons will be beneficial in decreasing procedural anxiety due to the attire (Fig. 5) (Table 1).

Table 1. The percentage of dentist that choose opotion A,B and C for particular questions

S.NO	A	%age	B	% age	C	% age	SKIPPED
Q1	10	19.23%	42	80.77%	0	0	0
Q2	28	53.85%	12	23.08%	12	23.08%	0
Q3	50	100%	0	0	0	0	2
Q4	44	84.62%	6	11.54%	2	3.85%	0
Q5	42	80.77%	2	3.85%	8	15.38%	0
Q6	42	80.77%	2	3.85%	8	15.38%	0
Q7	38	73.08%	6	11.54%	8	15.38%	0
Q8	50	96.15%	2	3.85%	0	0	0
Q9	48	92.31%	0	0	4	7.69%	0
Q10	48	92.31%	0	0	4	7.69%	0

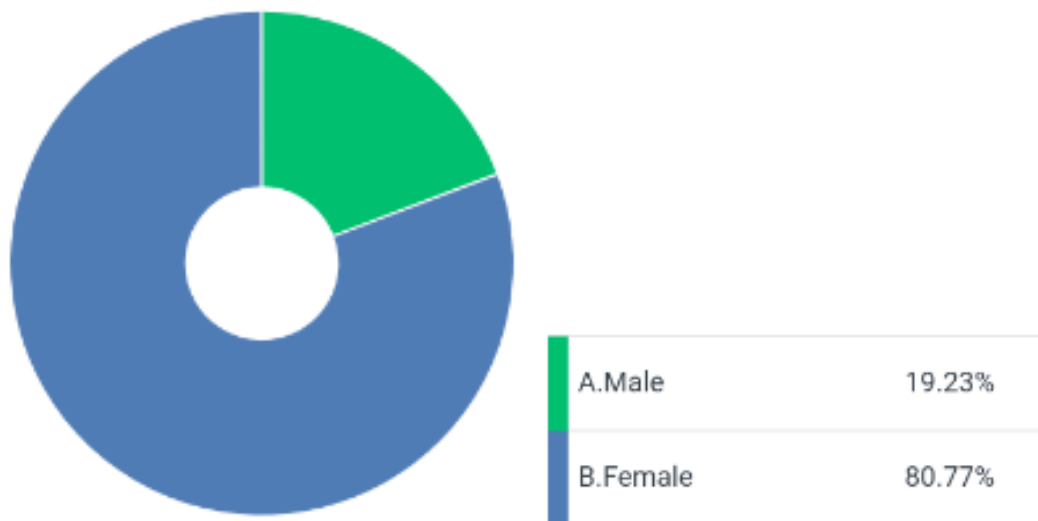


Fig. 1. Survey showing male and female ratio

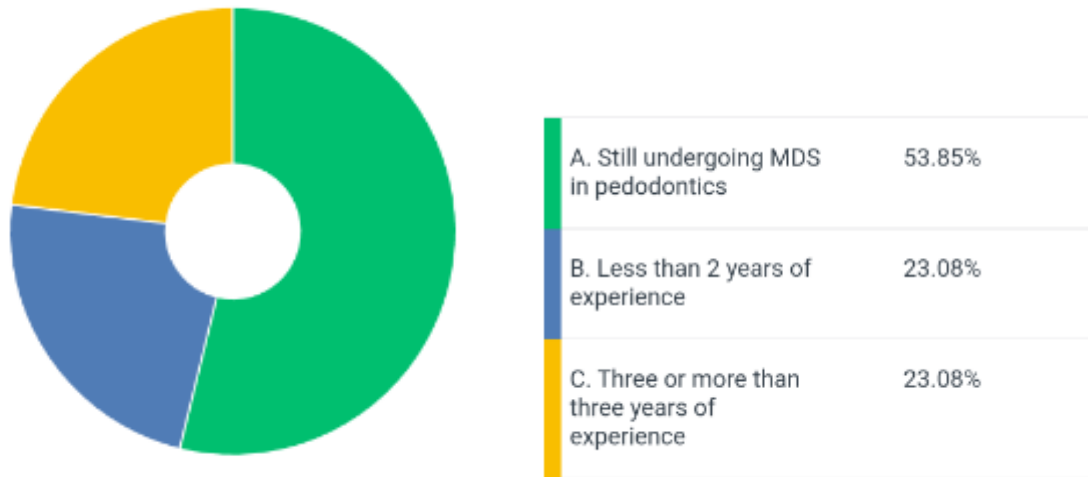


Fig. 2. Pedodontics and Preventive Dentistry

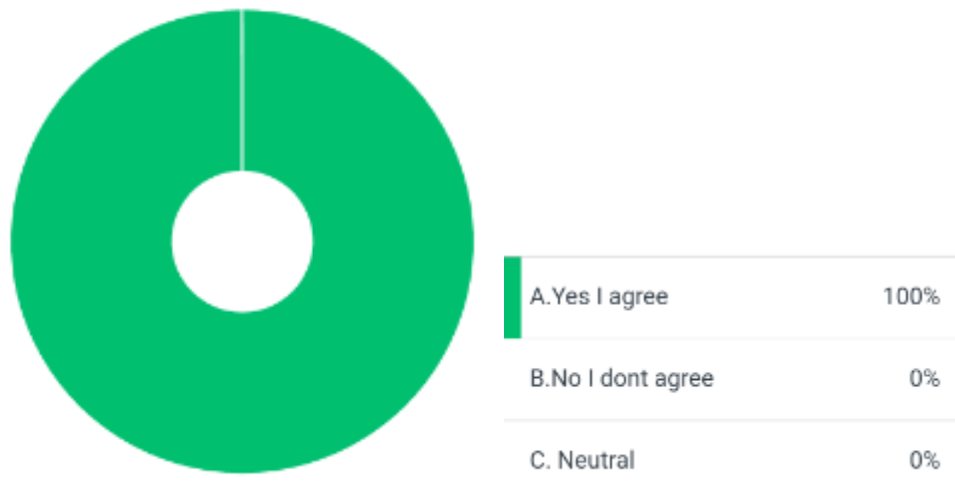


Fig. 3. Prerequisite before examination

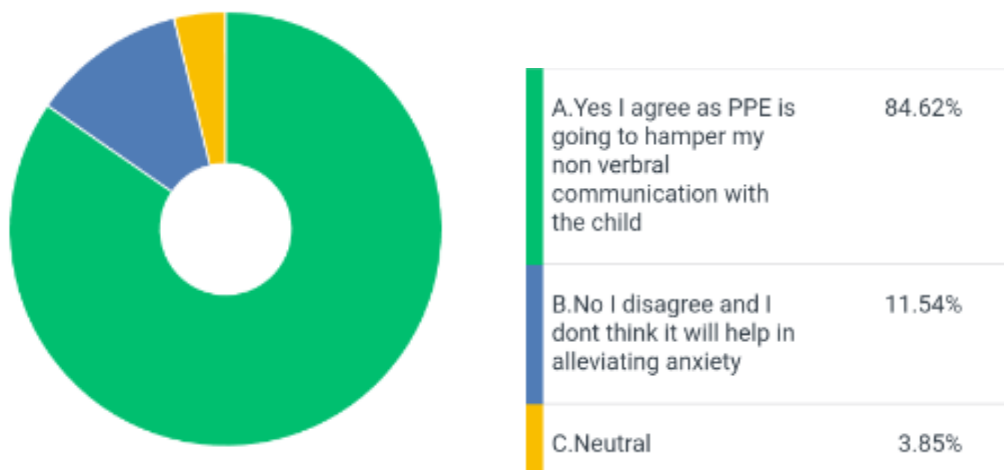


Fig. 4. PPE hampers non verbal communication skills

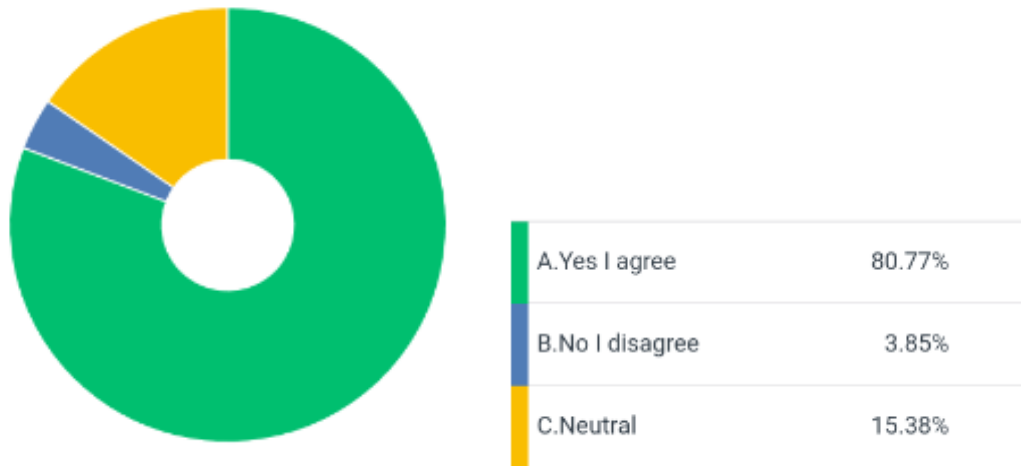


Fig. 5. Anxiety due to the attire

80.77% pedodontist thought of rewarding a child with mini PPE kits with cartoon masks and symbolising it with astronaut in the space will influence the cooperation of child during the process of treatment (Fig. 6).

70.83% pedodontist thought behaviour management modification like modelling, tell show do, tell play do, nonverbal gestures like pat ,mobile distraction ,virtual reality and long sessions of verbal communication will have a less role in modifying a favourable behaviour of child in the dental operator(Fig. 7).

96.15% of the pedodontist thought in the present scenario behaviour management modification

like modelling, tell show do, tell play do, nonverbal gestures like pat ,mobile distraction, virtual reality and long sessions of verbal communication will be hampered (Fig. 8).

92.31% pedodontist agreed that the procedures like Halls technique, use of silver diamine fluoride, atraumatic restorative treatment, lasers and remineralizing agents will be preferred over drilling on multiple carious (Fig. 9) (Table 1).

Properly drapping in gown with headcap, mask and gloves before entering dental operator and following proper coughing etiquettes was suggested by 92.31% of pedodontist as mandatory (Fig. 10).

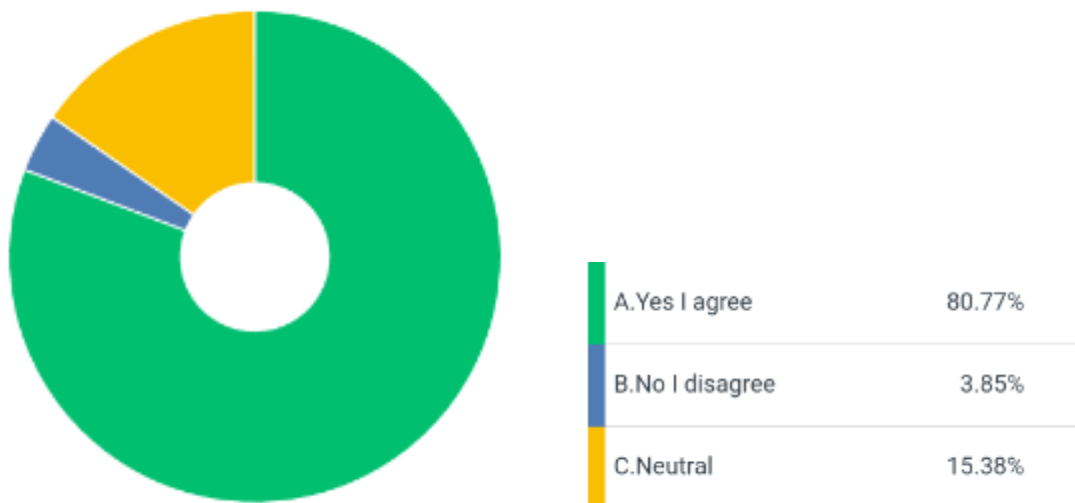


Fig. 6. Cooperation of child during the process of treatment

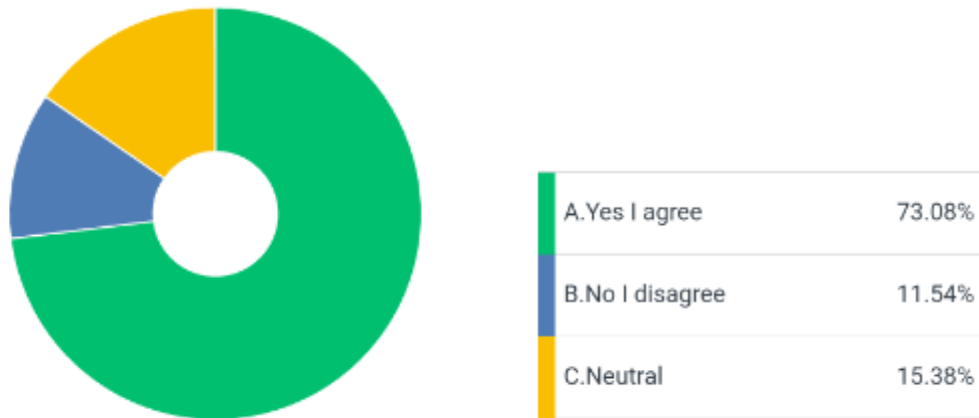


Fig. 7. Behaviour of child in the dental operator

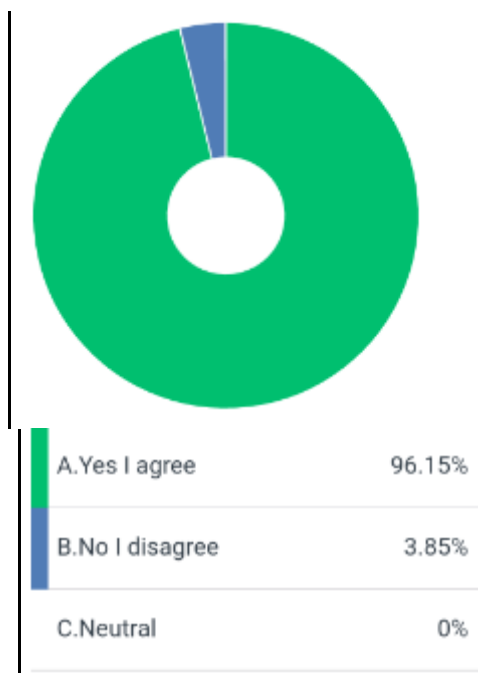


Fig. 8. Verbal communication

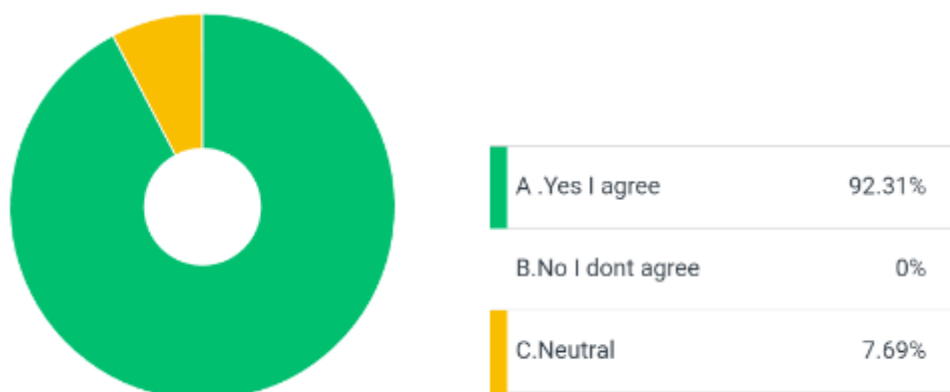


Fig. 9. Drilling on multiple carious

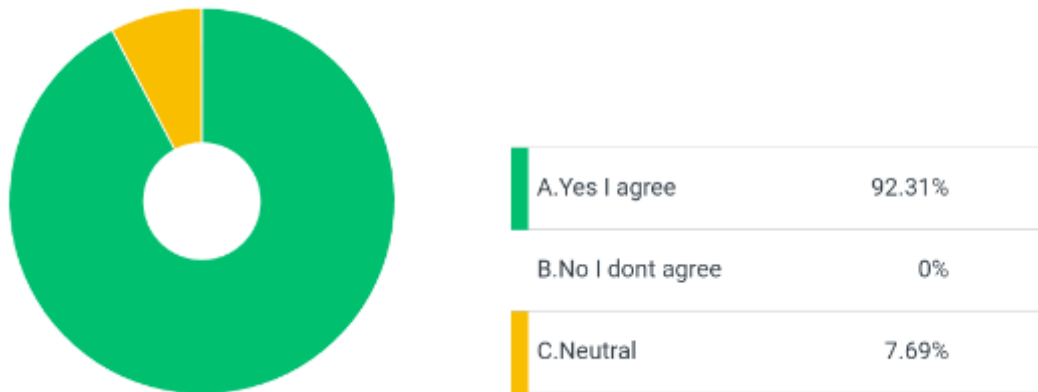


Fig. 10. Coughing etiquettes to be taught

4. DISCUSSION

Teledentistry is coming as an option for in office dental care and telephonic triage needs to be done to determine whether the patient needs to be seen in dental setting [6]. The patients and their attendants need to be advised to wear a face mask and need to be screened for fever and symptoms consistent with COVID-19 and dental facilities should post visual alerts showing coughing etiquette, toys and magazines away from waiting area, ABHR (alcohol based hand rub) with 60-95% alcohol at the entrance in dispensers [7].

The genome of COVID-19 virus has been detected in saliva indicating the potential infection of salivary gland and loss of taste and smell have been recognized with COVID-19 [8].

The colour of the professional attire of a pediatric dentist can alleviate generalization of fear and anxiety as child links colour to emotions like blue with happiness and green with surprise thereby modifying behaviour of the child according to their favourite colours [9]. Celine et al in 2018 conducted a study on 4-12 year old children where the attire of the dentist mouth mask modified by attaching lenticular stickers was used as magic mask for distraction and minimising unpleasant fear and anxiety [10]. So using child's favourite colour PPE kits with masks and face shield with cartoons will decrease procedural anxiety and rewarding a child with mini PPE kits with cartoon masks and symbolising it with astronaut in the space will influence the cooperation of child during the process of treatment and 80.77% respondents in our study agreed with it.

Dental care settings invariably increase risk of spread of COVID-19 as it involves face to face communication with exposure to saliva, blood, body fluids, handling of sharp instruments [11]. The patient with COVID -19 infection should only be treated in Negative –pressure treatment rooms/airborne infection isolation rooms (AIIRS) and not in a routine dental practice setting [12].

Children who are at additional risk from COVID-19 should not attend dental clinic environment are long term respiratory conditions, immunocompromised, hemodynamically significant, children with chronic kidney disease stage 4 ,5 or on dialysis and their treatment plan should be postponed [13]. Measures like travel restrictions, quarantines and self isolation , social distancing and heightened hygiene were followed to prevent the spread [8].

So Teledentistry should be introduced to preschedule appointments for children in the dental operatory and telepediatricdentistry could aid in counselling the child as well as their parents by explaining them about diet counselling , oral hygiene practices and various preventive measures that can be taken at home [14].

5. CONCLUSION

Pedodontist should use N95 respirator or a respirator that offers high level of protection such as disposable filtering facepiece respirator, PAPRs, or elastomeric respirators on patients assumed to be non contagious during aerosol generating procedure.A Pediatric dentist must be fully aware of 2019-nCoV spreading modalities ,how to identify children with this infection, self

protection consideration, use of pre-procedural mouth wash with oxidative agents in children. 92.31% pedodontist agreed that the procedures like Halls technique, use of silver diamine fluoride, atraumatic restorative treatment, lasers and remineralizing agents should be preferred over conventional restorative techniques.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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