

Scenario-Based Assessment of Children and Parents Preferences towards a Paediatric Dental Setup – An Observational Study

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Abstract: Introduction: The child's first impression about a paediatric dental set up may have a lasting impact on his dental behaviour and attitude. Paediatric dental services can provide an enhanced child-friendly experience with a relaxed environment by incorporating certain preferences of children and parents. However, few studies have addressed their perspective for a paediatric dental setup. Aim: The aim of this study was to assess the scenario based preferences of children and parents towards a paediatric dental setup. Methodology: 60 children between 6 to 12 years of age and their parents were recruited for the study. A PowerPoint based study tool was developed to include pediatric dental clinic and related scenarios. The participants chose, rated or ranked their preferences as per the scenario-based age appropriate questionnaire. The highest preferences were chosen as final responses. The frequencies of responses were compared using a Chi-squared test. Results: Participants preferred a colourful choices for dental setup and dental personnel attire. Poster was the preferred tool for oral health education. All participants preferred female gender for dental health personnel, however, parents preferred either gender. Conclusion: Patient preferred environment may bring about a change in the oral health behaviours of children and improve the parent's perception towards child oral health care.

Keywords: Attire, Childrens preference, Gender, Paediatric Dental Setup, Parents preference.

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I. Introduction

The world is encountered by us humans as a colourful place. Colours are perceived on every object, which is viewed in daily life; it is even present in our dreams [1]. There are plentiful opinions on the nature of colour associations and on presumed influences of colour on human feelings, esthetic judgements and beyond [2].

Humans have an innate tendency to bond with other living organisms, other species, which has been termed as 'Biophilia', by a Harvard biologist named 'Edward O. Wilson' [3]. As we evolved, our interaction with nature has diminished. Today, our environment has changed. Far from nature, today, our world resides in our homes, offices, hospitals and clinics. The human behaviour is known to be affected by the environment we interact with. A strong relationship has been established between psychology and design of the environment [4]. Our mood and well-being are affected by various elements of the physical environment we live in, like, spatial allocation, lightings, access to nature, colour, indoor environment quality, thermal comfort etc [5]. Hence, it is important to design the space which will be an inhabitant to several individuals, at every moment.

One such place is the hospital environment. The physical environment of the hospital has to be designed in a manner, such that, it is safe, healthy and patient friendly and, most importantly, functions as a 'healing environment' [6]. Evidence-based design has become a theoretical concept in the creation of healing environments [7][8]. Healthcare providers prefer using evidence-based information to make decisions. Children and adolescents are often neglected in fields such as architectural and urban planning, although they are typically more sensitive to environments compared with adults [9]. It has been emphasized that because young children are more dynamic than adults are, more considerations should be included in healthcare for children [10]. A child's interaction with the clinic environment and the health care providers can influence their future health behaviours, and the same can be stated about a pediatric dental health care setting. A simple characteristic could be the use of child-friendly colours in a health care facility. It can help improve the hospital experience of the children, young adults and their families. In interior designing, colour is seen as the easiest material to change the characteristics of the environment and is dominantly visible. It gives character to space. It can

influence human behaviour, decision making, health and much more [11]. Behaviour management is of utmost importance in pediatric dentistry and a child-friendly clinic environment can supplement it.

The Pediatric treatment triangle, given by G.Z. Wright in 1975, indicates the importance of a child in the overall behaviour management strategies employed in pediatric dentistry. The parents and the dentist form the base of the triangle and play a key role in shaping the child's dental behaviour [12]. Fear from dentist accounts for 4 to 43% in children of different population [13] and it is a common problem in children and adolescents worldwide [14]. The root of this fear could be separation anxiety from parents and the feeling of helplessness in a foreign environment, as well as their fear of bodily harm and corresponding perception of dental instruments as objects of pain, violence and destruction [15]. The behaviour management of the patient includes many techniques and strategies. It requires skills in communication, empathy, coaching and listening. Having an office that accommodates these management strategies and techniques is a part of the "art" of behaviour management. Many aspects need to be considered for the design of a children's dental home, like design of the office should promote patient cooperation and patient-parent acceptance, sufficient space should be created for optimal functioning of practice, appropriate use of management strategies and practicing in the style that most suits the dentist [12]. Differences in age, gender, personality, previous painful dental experiences, and increased general and parental dental anxiety can also account for fear in certain children [16]. Psychologists and sociologists stress the strong relationship between appearance and its effect on first impressions and interpersonal relationships. This information is important as it can help dentists better shape their practices to meet the preferences and needs of their patients [17]. To our knowledge, there are not many studies that shed light upon the preferences of parents and children towards the designing of a pediatric dental setup and the over-all characteristic and appearance of the pediatric dentist.

The study had the following objectives:

Primary objective:

1. To assess the preference of parents and children towards the design of a pediatric dental setup.

Secondary objective:

1. To assess preference of parents towards the additional facilities in the waiting area.
2. To assess the preference of parents towards oral health education tool.
3. To assess the association between parents preferred oral health education tool and their educational qualification.
4. To assess gender preference of participants towards the dentist, dental assistant and receptionist.
5. To assess the association between gender of participants and gender of the dental health team.
6. To assess the preference of participants towards attire of the dentist, dental assistant and receptionist.

II. Material And Methods

1. Study design and settings:

This was a questionnaire-based cross-sectional observational study which was conducted in the department of Pediatric and Preventive Dentistry of a private dental college of a metro city. Children and parents reporting at the OPD were recruited for the study.

2. Participants:

60 children between the age group of 6 to 12 years and their parents were consented and agreed to participate in the study. The inclusion criteria was as follows:

1. Children who had a physical status of ASA 1 or 2
2. Adults and children who were able to communicate in English or the local language

The exclusion criteria was as follows:

1. Children with ASA physical status of 3 or more
2. Adults or children with cognitive disability
3. Children who were unable to complete the survey independently
4. Children who were not accompanied by their parents

3. Study tool

The study tool comprised of a separate questionnaire for the parents and the children. The questionnaire was aided with a power-point presentation. Each question was supplemented with pictures as answer for choice. The pictures for all categories were downloaded from the internet. The questions were categorised under the following headings:

1. Demographic details:
 - a. Children- Name, age, gender, class, school and mother tongue

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- b. Parents- Name, age, gender, education, monthly/yearly income, address
- 2. Dental clinic exteriors
 - a. Type of display board for pediatric dental clinic – Colourful and professional
 - b. Type of main entrance of pediatric dental clinic – Colourful, professional and contemporary
- 3. Dental clinic interiors

CLINIC INTERIOR	CHOICES/PREFERENCES
CLINIC DOOR	DOOR 1 – full wooden DOOR 2 – wooden with glass DOOR 3 – wooden with child door in-built DOOR 4 – door with cartoon print DOOR 5 – see through glass door
CLINIC FLOOR	FLOOR 1 – wooden floor FLOOR 2 – plain cement floor FLOOR 3 – cartoon painted floor FLOOR 4 – coloured carpet FLOOR 5 – soft tiles
CLINIC WALL	WALL 1 – plain white wall WALL 2 – cartoon painted wall WALL 3 – plain coloured wall
CLINIC LIGHTS	LIGHTS 1 – white lights LIGHTS 2 –coloured light LIGHTS 3 – bright light decor LIGHTS 4 – series lights decor
CLINIC PLAY AREA	PLAY AREA 1 – children separate play room PLAY AREA 2 – play area with waiting area together PLAY AREA 3 – separate play area section near waiting area
GAMES IN PLAY AREA	GAME 1 – kids outdoor play equipment GAME 2 – toys, cars, dolls etc GAME 3 – interactive games with story books GAME 4 – video games
RECEPTION AREA	RECEPTION AREA 1 - regular reception area RECEPTION AREA 2 – colourful and child friendly
WAITING AREA	WAITING AREA 1 – Contemporary waiting room WAITING AREA 2 – Colourful and brightly designed
CURTAIN	CURTAIN 1 – Plain hospital curtain CURTAIN 2 – colourful and printed curtain

4. Treatment equipment in the dental operatory

TREATMENT EQUIPMENT	
DENTAL CHAIR	CHAIR 1 – Regular chair with stickers CHAIR 2 – colourful and character designed dental chair CHAIR 3 – adult dental chair CHAIR 4 – dental chair camouflaged as child ride
CLINIC OPERATORY	OPERATORY 1 – Regular dental operatory OPERATORY 2 – Colourful dental operatory OPERATORY 3 – Multiple chair operatory for kids

5. Additional facilities for parents in the waiting area:

ADDITIONAL FACILITIES (Only for parents)	
MEANS FOR ORAL HEALTH COMMUNICATION	1. Magazines, pamphlets and books 2. Oral health education posters 3. Computers, tabs and smart phones 4. Television
ADDITIONAL FACILITIES	1. Wi-fi 2. Tea/coffee machine 3. Music 4. Drinking water 5. Mobile charging station 6. Height and weight scale 7. Age with height and weight scale 8. Washroom 9. Drug store 10. Waiting number

6. Characteristics assessed for dental personnel:

RECEPTIONIST	Gender Attire 1– white coat Attire 2 - coloured scrubs
DENTAL ASSISTANT	Gender Attire 1 – white coat Attire 2 - coloured scrubs
DENTIST	Gender Age - Young/Middle-aged/Old-aged Attire –Plain coloured/Cartoon printed scrubs/ surgeons scrub/white apron(half-sleeves)/white apron (full-sleeves/casual wear) Beard – Bearded/Non-bearded Face masks – regular/smiley mask Head-cap – regular/textured Face expressions –No smile/smile Overall attire of dental health team – Child friendly and colourful/ white apron attire

4. Data collection

Demographic details of the participants were collected. Parents and children were asked similar questions. Parents had to rank their choices while children chose their best choices as responses. The pictorial representation of each question was displayed on the PowerPoint presentation while the participants answered each question. The parents and children were interviewed separately to avoid influence of choices of parents over children or vice versa.

5. Statistical analysis

All findings were recorded and the data was captured into a Microsoft Office Excel (version 2013) spreadsheet. The master chart was checked for errors and discrepancies. Data analysis was done using windows based *MedCalc Statistical Software version 13.3.1 (MedCalc Software bvba, Ostend, Belgium; <http://www.medcalc.org>; 2014)*. $p < 0.05$ was considered as significant. The following statistics were applied:

1. Means: Average age of participants.
2. Proportions: Most preferred choice.
3. Chi-squared test: Association between oral health education medium and parent education level and gender of participants and dental health personnel.

3. Results

A total of 120 participants were recruited for the study that is, 60 parents and children pairs. The demographic details of the study population are outlined in TABLE 1 and TABLE 2.

TABLE 1. Distribution of participant (parents) age wise and based on levels of education

	Males	Females	Education status			
			Uneducated	School	Graduates	Post-graduates
Parent	23	37	1	22	24	13

Mean age: 35.25 ± 6.155

TABLE 2. Distribution of participant (children) gender wise and age wise

	Boys	Girls	6 to 9	9 to 12 year
Children	34	26	45	15

Mean age: 8.53 ± 1.67

PREFERENCES FOR PEDIATRIC CLINIC

The preferences given by parents and children have been summarized in TABLE 3 and TABLE 4. All the data has been represented in frequencies and percentages.

PEDIATRIC DENTAL CLINIC EXTERIOR

Preferences for display board and main entrance of pediatric dental clinic

Both parents and children chose a display board and main entrance which was more colourful and attractive as seen in TABLE 3.

PEDIATRIC DENTAL CLINIC INTERIOR

Parents and children, both chose a cartoon painted door suitable as clinic doors. Soft tiles were preferred for floor, but equal preference was also given to a cartoon painted floor by children. Similar result was obtained for the clinic walls, where the participants preferred cartoons painted on the walls. Parents chose regular white lights for the clinic, while children preferred to have colourful series lights added to it. Both groups preferred to have a separate play room in the dental clinic. When questioned about the types of games that should be provided, parents preferred that playful toys be given to their children, while most children voted for video games, playing with toys was their second choice.

Both groups voted for a colourful, vibrant and bright looking reception and waiting area. For the type of dental chair that would be preferred, parents voted for a regular dental chair decorated with colourful stickers while children chose a camouflaged character based chair dental chair that appeared like a toy ride. Parents as well as children would prefer to be treated in an operatory where all children would be treated together (multi-chair clinic area for children).

Parents were also asked to vote for the additional facilities that can be provided to them in the waiting room. A positive response to each type of facility was given by the participants, as seen in TABLE5.

We also questioned parents about the best and easiest means to convey oral health information to them, and maximum participants voted for oral health education posters. Additionally, it was found that their choice was not influenced by the education level of the respective participants ($p < 0.05$). The data has been tabulated in TABLE6.

PREFERENCE FOR CHARACTERISTICS OF DENTAL PERSONNEL

Participants were surveyed about the attire that they would prefer the receptionist, dental assistant and dentist to wear. Most parents tended to choose an attire having colourful and printed scrubs while children chose character-costume attire for the receptionist. Children preferred an assistant wearing a white coat, parents on the other hand chose coloured scrubs for the dental assistant. A dentist wearing colourful scrubs, printed with cartoons was the attire preferred by the children. Most parent liked the pediatric dentist to be professionally dressed in a full sleeves white coat. However, when questioned about the over-all appearance of the dental health team, a contradictory opinion was given by both groups. Colourful and printed protective garments like head caps and face masks were also shown to the participants but they voted for regular ones.

We also asked about the age that would be preferred for the dentist. Children preferred to be treated by a young-aged dentist while parents preferred a middle-aged dentist to treat their child. All participants voted for a clean shaven look for a male dentist. The dentist with a smiling face expression got maximum votes by the participants. The data for the same has been represented in TABLE 7.

PREFERENCES FOR GENDER OF DENTAL PERSONNEL

The responses given by the participants for the gender of dental personnel, incline towards a female receptionist and dental assistant. Their choice differed for the dentist, wherein parents voted for either gender and children preferred a female dentist for treatment. We also associated the gender of the parents and children with their choice of gender for the dental personnel. A significant association was found with the choice of gender of parents and that of the dental assistant ($p < 0.05$). On assessment for association with choice of gender of children, a statistically significant association ($p < 0.001$) was obtained which meant that, children preferred dental health personnel of the same gender as their own. TABLE8 present data for the same.

TABLE 3: Preferences of parents regarding Pediatric dental setup (frequency and percentages)

CLINIC EXTERIOR					
DISPLAY BOARD					
Display Board 1	80%				
Display Board 2	11.7%				
Both	8.3%				
MAIN ENTRANCE	RANK 1	RANK 2	RANK 3	RANK 4	RANK 5
Entrance no. 1	63.3%	23.3%	13.3%		
Entrance no. 2	21.7%	43.3%	35%	-	-
Entrance no. 3	15%	33.3%	51.7%		
CLINIC INTERIOR					
CLINIC DOOR					
Door 1	3.3%	6.7%	25%	36.7%	28.3%
Door 2	6.7%	11.7%	16.7%	31.7%	33.3%
Door 3	16.7%	40%	23.3%	13.3%	6.7%
Door 4	41.7%	23.3%	11.7%	6.7%	16.7%
Door 5	31.7%	18.3%	23.3%	11.7%	15%
CLINIC FLOOR					
Floor 1	5%	10%	21.7%	40%	23.3%
Floor 2	8.3%	10%	15%	15%	51.7%

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Floor 3	26%	33.3%	20%	13.3%	6.7%
Floor 4	15%	18.3%	33.3%	25%	8.3%
Floor 5	45%	28.3%	10%	6.7%	10%
CLINIC WALL					
Wall 1	8.3%	20%	71.7%	-	-
Wall 2	65%	16.7%	18.3%	-	-
Wall 3	26.7%	63.3%	10%	-	-
LIGHTS					
Light 1	36.7%	21.7%	16.7%	25%	-
Light 2	23.3%	26.7%	28.3%	21.7%	-
Light 3	11.7%	28.3%	28.3%	31.7%	-
Light 4	28.3%	23.3%	26.7%	21.7%	-
PLAY AREA					
Play area 1	70%				
Play area 2	15%				
Play area 3	15%				
GAMES					
Game 1	28.3%	33.3%	20%	16.7%	-
Game 2	41.7%	25%	25%	8.3%	-
Game 3	16.7%	30%	45%	6.7%	-
Game 4	13.3%	10%	8.3%	66.7%	-
RECEPTION AREA					
Reception area 1	20%				
Reception area 2	61.7%				
Both	18.3%				
WAITING AREA					
Waiting area 1	5%				
Waiting area 2	83%				
Both	10%				
CURTAIN					
Curtain 1	8.3%				
Curtain 2	86.7%				
Both	5%				
DENTAL CHAIR					
Dental chair 1	43.3%	38.3%	11.7%	6.7%	-
Dental chair 2	26.7%	31.7%	31.7%	10%	-
Dental chair 3	8.3%	15%	25%	51.7%	-
Dental chair 4	21.7%	15%	31.7%	31.7%	-
DENTAL OPERATORY					
Operatory 1	6.7%	21.7%	71.7%	-	-
Operatory 2	41.7%	38.3%	20%	-	-
Operatory 3	51.7%	40%	8.3%	-	-
ORAL HEALTH INFORMATION					
Magazines/Pamphlets/Books	11.7%				
Oral health Education Posters	56.7%				
Computers/Tabs/Smart phones	16.7%				
Television	13.3%				

TABLE 4. Preferences of children regarding pediatric dental setup

CLINIC EXTERIOR	
Display board 1	73.3%
Display board 2	23.3%
Both	3.3%
MAIN ENTRANCE	
Entrance 1	63.3%
Entrance 2	28.3%
Entrance 3	8.3%
CLINIC INTERIOR	
CLINIC DOOR	
Door 1	6.7%
Door 2	6.7%
Door 3	23.3%
Door 4	45%
Door 5	8.3%
CLINIC FLOOR	
Floor 1	18.3%
Floor 2	6.7%
Floor 3	35%
Floor 4	5%
Floor 5	35%
CLINIC WALL	
Wall 1	6.7%
Wall 2	65%

Wall 3	28.3%
CLINIC LIGHTS	
Light 1	31.7%
Light 2	25%
Light 3	8.3%
Light 4	35%
PLAY AREA	
Play area 1	55%
Play area 2	18.3%
Play area 3	26.7%
GAMES	
Game 1	23.3%
Game 2	33.3%
Game 3	8.3%
Game 4	35%
RECEPTION AREA	
Reception area 1	25%
Reception area 2	70%
Both	5%
WAITING AREA	
Waiting area 1	10%
Waiting area 2	86%
Both	1.7%
CURTAIN	
Curtain 1	20%
Curtain 2	78.3%
Both	1.7%
DENTAL CHAIR	
Dental chair 1	21.7%
Dental chair 2	26.7%
Dental chair 3	13.3%
Dental chair 4	38.3%
DENTAL OPERATORY	
Operatory 1	11.7%
Operatory 2	33.3%
Operatory 3	55%

TABLE5: Additional facilities for parents

FACILITY	YES	NO	MAYBE
Wi-fi	71.7%	20%	8.3%
Tea/Coffee machine	73.3%	18.3%	58.3%
Music	58.3%	33.3%	8.3%
Drinking water	98.3%	-	1.7%
Charging station	86.7%	6.7%	6.7%
Height/Weight chart	96.7%	3.3%	-
Age for height and weight chart	100%	-	-
Washroom	100%	-	-
Drug store	95%	-	5%
Waiting number	100%	-	-

TABLE 6: Assessment of education level of parents with choice of oral health education media

Education status/ type of media	Uneducated	Basic schooling	Graduation	Post-graduation	p-value (Chi-square test)
Missing data	0	0	1	0	p<0.05
Magazines/pamphlets/books	1	5	0	1	
Posters	0	11	15	8	
Electronic media (mobile phones/tabs)	0	2	7	1	
Television	0	4	1	3	

TABLE 7: Preferences of parents and children for characteristics of dental personnel

DENTAL PERSONNEL TRAITS					
RECEPTIONIST					
Gender	Male (P) 5%	Female (P) 53.3%	Either (P)41.7%		
	Male (C) 41.7%	Female (C) 51.7%	Either (C) 6.7%		
Attire (P)	RANK 1		RANK 2		RANK 3
Attire 1	18.3%		46.7%		35%
Attire 2	58.3%		35%		6.7%
Attire 3	23.3%		18.3%		58.3%
Attire (C)	Attire 1 23.3%	Attire 2 20%	Attire 3 56.7%		

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DENTAL ASSISTANT						
Gender	Male (P) 6.7%	Male (C) 33.3%	Female (P) 53.3%	Female (C) 55.9%	Either (P) 40%	Either (C) 10.2%
Attire	Parents			Children		
Attire 1	60%			45%		
Attire 2	35%			51.7%		
Either	5%			3.3%		
DENTIST						
Gender	Male (P) 13.3%	Male (C) 41.7%	Female (P) 31.7%	Female (C) 46.7%	Either (P) 55%	Either (C) 11.7%
Age (P)	RANK 1		RANK 2		RANK 3	
Young	28.3%		25%		46.7%	
Middle aged	36.7%		53.3%		10%	
Old aged	35%		21.7%		43.3%	
Age (C)	Young 48.3%		Middle-aged 35%		Old-aged 10%	
Attire (P)	RANK 1	RANK 2	RANK 3	RANK 4	RANK 5	RANK 6
Attire 1	3.3%	28.3%	21.7%	21.7%	15%	10%
Attire 2	21.7%	10%	13.3%	13.3%	18.3%	23.3%
Attire 3	13.3%	8.3%	28.3%	30%	8.3%	11.7%
Attire 4	21.7%	33.3%	16.7%	16.7%	8.3%	3.3%
Attire 5	31.7%	13.3%	10%	11.7%	26.7%	6.7%
Attire 6	8.3%	6.7%	10%	6.7%	23.3%	45%
Attire (C)	Attire 1 11.7%	Attire 2 25%	Attire 3 10%	Attire 4 18.3%	Attire 5 23.3%	Attire 6 11.7%
Beard	Parents			Children		
Beard	13.3%			26.7%		
No beard	68.3%			63.3%		
Either	16.7%			10%		
Facemask	Parents			Children		
Plain mask	68.3%			55%		
Smiley mask	28.3%			41.7%		
Either	3.3%			3.3%		
Head-cap	Parents			Children		
Plain	63.3%			53.3%		
textured	26.7%			41.7%		
Either	10%			3.3%		
None	-			1.7%		
Face expressions	Parents			Children		
Without smile	10%			28.3%		
With smile	83.3%			68.3%		
Either	6.7%			3.3%		
Dental health team attire	Parents			Children		
Colourful scrubs	63.3%			45%		
White apron	35%			53.3%		
Either	1.7%			1.7%		

P- Parent; C- Children

TABLE 8: Assessment of gender of parents and children with gender of dental personnel

GENDER	Dentist			Dental assistant			Receptionist		
	Male	Female	Either	Male	Female	Either	Male	Female	Either
Male (P)	5	7	11	4	11	8	2	11	10
Female (P)	3	12	22	0	21	16	1	21	15
Total (60)	8	19	33	4	32	24	3	32	25
p-value	0.310			0.032			0.533		
Male (C)	23	7	4	20	11	4	24	7	2
Female (C)	2	21	3	0	22	3	1	24	2
Total (60)	25	28	7	20	33	7	25	31	4
p-value	<0.001			<0.001			<0.001		

P- Parent; C- Children

4. Discussion

The study population comprised of 60 parent-child pairs. In the parents group, 23 were males and 37 were females (TABLE 1) and amongst children, 34 were boys and 26 were girls (TABLE 2). In the children group, 75% were between 6 to 9 years of age and 25% between 9 to 12 years of age. The education status of the parents has been shown in TABLE 1. Amongst the parents, 1.6% were uneducated, 36.6% finished basic schooling, 40% were graduates and 21.6% completed post-graduation.

In dentistry, a doctor patient relationship can be compared to that of a service-provider and beneficiary, where importance is given to the ability of physical environment to influence behaviours and create an image. Service providers in business recognise the importance of the effect atmospherics, or physical design and décor elements on consumers and workers [18].

In this study, both groups have shown an inclination towards more attractive and colourful appearing exterior and interior designs as well as attire of the dental health personnel.

In interior designing, colour is the easiest material to change [11]. Colour can be sold to the people, as it influences one's mood and emotions, perception and behaviour [19]. A colour's tone or hue and the variation in brightness or saturation plays a more important role in its perception and association with behaviour [20][21]. The physical world is said to have no colours but only light waves that are recognised by the retinal cones of the normal human eye [22].

Dental environment: In the present study, both groups have colourful preferences. Using child friendly colours in paediatric dentistry could pose a positive impact on their emotional status and reduce dental anxiety. Thus by adding bright colours to the dental set up and incorporating colourful equipment, the child may feel good and at ease in the dental environment [22]. Colours like blue and pink, have been found to instil a positive dental attitude in children while colours like black and red could develop a negative outlook in their mind [23].

Play area: Parents and children both chose a play area which would be separate from the waiting room. A novel idea which is followed, is that of a 'cave' for children to play. This gives children a sense of privacy and fun [12]. In medical literature it has been found that, pre-operative anxiety is reduced when children participate in playful activities in the waiting area, helping the child to become relaxed, besides acting as a facilitator for interaction and communication among health professionals, children and their companions [24][25]. A study by Panda et al, supports this, wherein the participants preferred to play in the dental waiting area [26].

Attire: Professional appearance of a paediatrician is an important element affecting the perception of competence of the doctor among patients and their parents/guardians, thus influencing their compliance [27]. In order to make positive changes and adjustments that would make a paediatric dentist look more acceptable for the child, importance must be given to what form of attire will be more preferential. Psychologists/sociologists highlight the importance of appearance and its effect upon first impressions and interpersonal relationships [28][29]. In the present study, participants have mostly preferred dental health personnel to wear bright, colourful and child-friendly attire, mostly having prints of different cartoons. In a study performed in a dental setting by Asokan et al, children have preferred colourful attires for dentist [29]. However, there are also studies, wherein, informal attire has been the least favourite choice by patients [30][31][32]. Based on children's age, it has been observed that children in young age group prefer a regular outfit, middle aged preferred white coat and older children prefer a surgical coat. Based on the environment, children preferred white coat in school environment and surgical scrubs in dental operator [33]. In this study, a plain head cap and face-mask for the dentist was preferred by children.

Gender: In this study, children preferred to choose a female dentist to treat them while parents preferred either a male or a female dentist. A similar finding has been found in anxious children and children with past dental/medical experience [26]. Many studies have reported of children preferring a health professional of the same gender as theirs [29], however, studies conducted in the past have shown that female paediatric patient prefer a female health care provider [17][26]. We assume that societal culture and stereotypes may have influenced the choice of participants, mainly children, while giving preference for gender of dental personnel.

Appearance: We also assessed the preferences regarding the over-all appearance of the dentist. Both groups chose a dentist having a smiling face and clean shaven appearance. Faces displaying cues to happiness consistently appear relatively trustworthy and young children have been found to be sensitive to facial trustworthiness [34]. It is said that an individual's facial appearance can reliably influence trustworthiness and that children selectively place their trust on trust-worthy looking faces [35].

Age: The age of the dentist preferred by children and parents was also assessed. Children preferred a dentist of young age and parents preferred a middle-aged dentist to treat their children.

Oral health education means: In the present study, posters were preferred by almost all parents as the best means to understand oral health education. Their choice was not associated with their education status. Research has indicated that health information framed in a poster presentation may be an effective method of knowledge transfer, and posters in the waiting room can increase awareness of health promotion issues [36].

Limitations

The past dental experience of the children and parents could not be assessed. The child's personality or previous experiences, may also have played a crucial role and could have affected the child's level of dental fear. However, the questionnaire in this study was not designed to evaluate this. The caries score of the patients was not recorded in the study. It may also be of value to evaluate longitudinally in future studies, the effect and pattern of dental fear in children with high caries rates, who are subjected to multiple dental appointments

Generalizability

The results of this study are generalizable in children of age-group of 6 to 12 years in a similar setting.

5. Conclusion

1. Children and parents both prefer a child-friendly and dental environment.
2. Parents preferred to have additional facilities in the waiting area.
3. Parents chose poster as the most preferred means for oral health education.
4. The choice for oral health education given by the parents was not associated with their education qualification.
5. Children preferred a female pediatric dentist while parents preferred a dentist of either gender.
6. An association was found in the study between choice of gender of children and dental personnel and between choice of gender of parent and the dental assistant.
7. Oral health care givers dressed in coloured attire were preferred by most participants, however, children chose a dental health team dressed in white coat.

6. Recommendations

We recommend that an assessment for association between the ethnicity of the patient and the pediatric dentist can be made in the future studies. The influence of child's anxiety (with or without past dental experience) on their preferences can also be considered. Additionally, an assessment of preferences given by children-parent pairs can be done. A similar study can be carried out with a larger sample, in a different setting and with real life scenarios.

Conflict of interest

The authors declare no conflict of interest.

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