

Children's Choice of Dentist's Attire, Color, and Type of Mouth Mask: A Cross-sectional Study in Puducherry, India

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ABSTRACT

Aims and objectives: The study was done to record the preferences of children with regard to dentist's appearance.

Settings and design: A cross-sectional descriptive study in the department of Pedodontics in a tertiary care hospital in Puducherry, India.

Materials and methods: The study sample comprised 385 children (4–15 years) who were asked about their concern as to who should perform their treatment (male/female dentist/anyone); the type of attire (white coat, formal, scrub, or cartoon); color of mask (white, blue, green, or pink); and the type of mask (plain, printed, cartoon, or magic) that they wish their dentist to wear.

Statistical analysis: Chi-square test was used to analyze the influence of age, gender, and history of dental visit on the preferences (p value set as 0.05).

Results: Girls preferred female dentists and boys preferred male dentists ($p = 0.000$), older children felt anyone could treat ($p = 0.039$). White coat was the most preferred attire (53%) irrespective of the gender ($p = 0.016$), and younger children preferred cartoon attire (56.1%; $p = 0.000$). Pink and blue masks and magic and cartoon masks were the most liked; middle-age group children liked magic masks ($p = 0.000$) and older children liked plain masks ($p = 0.000$).

Conclusion: With increasing age, white coat fear, preferences for specific gender of the dentist, and child-friendly type of masks diminish. As first dental visits mostly occur around the middle age, it is wise to consider making appropriate changes in the dentist's appearance.

Clinical significance: Child-friendly appearance of dentist would be more appropriate for children of younger age-group and could be considered for those visiting the dentist for the first time.

Keywords: Color, Communication, Mask, Patient preference, Physical appearance.

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INTRODUCTION

The pediatric dental practice continues to face the challenge of managing fear and anxiety. A review of the dental literature reveals that children have strong perceptions about the appearance of their healthcare professionals. A recent study found that children fixated their look mostly on a dentist's face, especially the circumoral area, followed by the dentist's attire. They also found that the distractors such as pens and ties on the attire effected longer length of fixations and higher concentration.¹ Variable results observed across different studies done to know children's preference of dentist gender and protective equipment could be attributed to the cultural, geographic differences, and environmental influences.^{2,3} Nonanxious middle-age group and older age-group Indian children prefer white coats, white gloves, and plain masks.^{4–8} However, their preference of dentist's gender seems to vary; some samples show a preference for a female dentist,^{5,7,9} while others like to be treated by a dentist of the same gender as that of the child.⁶ These preferences are also influenced by the age of the child, anxiety levels, and previous medical/dental experiences.^{4–8} The dental literature suggests that the dentist's attire is more of a concern to the dentist, rather than the patients.⁷ In this background, it appeared important to know the preferences of dentist appearance-related factors among children in Puducherry, a union territory in India. In the light of the children's gender, age, and dental visit history, their preferences toward dentist gender, attire, color, and type of mouth mask are analyzed in this study.

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MATERIALS AND METHODS

This is a cross-sectional descriptive study done among children aged 4–15 years reporting to the Pediatric and Preventive Dentistry Department of a tertiary care hospital in Puducherry, India. The sample size was calculated as follows: the estimated

proportion of children preferring white coat was 43.06%.⁴ With 95% confidence interval and 5% precision, the sample size needed was 377 children. Following Institutional Ethical Committee approval and after obtaining written consent from parents and assent from the children, the following details were collected: age and sex of the child, history of a previous dental visit, and their concern as to who should perform their treatment (male/female dentist/anyone). Then the children were shown a series of photographs and asked to point their preference with regard to the type of dress (traditional white coat, formal attire, professional attire—green scrub, cartoon attire), color of mask (white, blue, green, and pink), and type of mask (plain and printed masks of different colors, masks with cartoon characters of regional language—Tamil, and masks with lenticular stickers called “magic mask” because lenticular images are called as magic stickers) that they wish their dentist to wear while carrying out the treatment procedure. Male models were shown if the child preferred to be treated by a male dentist and female models if the child preferred to be treated by a female dentist. The photographs used for this study were taken in a photo studio, in a similar background. The hairstyle and facial expressions of two volunteer students who did not provide treatment to these children.

Children were also asked why they liked the particular attire (open question). Descriptive statistics (frequency and percentage) was used to show the preferences; and the influence of the age, the gender of the child, and the history of a dental visit on the preferences was analyzed using Chi-square test, with *p* value set at 0.05.

RESULTS

Three hundred and eighty-five children aged 4–15 years (average age 8.31, standard deviation SD = 2.62) participated in this study, among whom 196 (50.9%) were males and 189 (49.1%) were females; 235 (61%) were visiting the dentist for the first time and 150 (39%) children had previous dental experience. Numbers of children in younger age-group (4–7 years) were 148, middle-age group (8–11 years) were 186, and older age-group (12–15 years) were 51. Majority of them, i.e., 304 (79%), felt that the dentist's gender and attire and the color and type of mask that the dentist wore were important. Tables 1 to 3 show the children's preferences about dentist's appearance based on child's gender, age, and history of previous visit, respectively. Majority of the children liked to be treated by female dentists. Boys strongly preferred male dentists and girls strongly preferred female dentists. Children of younger and middle age-group and those with and without previous dental experience preferred female dentists. Older age-group children opined that they could be treated by either a male or a female dentist.

The traditional white coat attire was the most preferred attire followed by the child-friendly cartoon attire. The preference was not different among boys and girls and among those with and without previous dental experience. However, younger age-group children preferred cartoon attire, while the middle-age group and older age-group preferred white coat. Professional green scrub attire was the least preferred among all the children.

Pink and blue masks were the most preferred colors in that order. Girls, younger children, and those with and without previous dental experience preferred pink, boys and middle-age group children preferred blue, and older children preferred green masks. White masks were the least preferred. Magic masks followed by cartoon masks were the most liked mask types. Younger children, boys, and children with previous dental experience preferred

cartoon masks, while the middle-age group children, girls, and those visiting the dentist for the first time preferred the magic masks. Printed design mask was the least preferred, and plain masks were preferred more by older children.

Chi-square analysis revealed an association between gender of children and their choice of dentist's gender, attire, and mask color. Choice of dentist's appearance in terms of dentist's gender, attire, color, and mask type was associated with the age of the children. An association was found between the history of previous dental visit and the choice of dentist's gender and mask type. Reasons stated for choosing traditional white coat attire were “they look like a doctor;” “because nurses wear white dress;” “because they will do good treatment;” “because doctors should wear white dress;” “because they do painless treatment;” “it helps them work;” “they look nice, decent, and smart;” and “it is a protective wear for doctors.” Reasons stated for preferring cartoon were “I like cartoons,” “it looked like my school,” “I usually watch cartoons,” “I like such dresses,” “I feel jolly,” “it looks beautiful,” and “my pain will reduce on seeing this.”

DISCUSSION

The professional appearance of a dentist can increase a child's anxiety because of generalization of fear due to unpleasant experiences in the physician's office. Children link colors with emotions, i.e., blue with happiness and green with surprise; and, therefore, they can be motivated to cooperate by using their favorite colors.⁴ In lieu of the findings of the study done by Celine et al.¹ that distractors on the attire effect prolonged concentration and eye fixation, a conventional mouth mask was modified by attaching lenticular stickers on it and was shown to children as a magic mask. Majority of the children preferred to be treated by female dentists similar to the findings of Almutairi and Münevveroğlu.^{9,10} On the contrary, majority of Saudi children aged 9–12 years preferred to be treated by male dentists.¹¹ Asokan and Zeren found that majority of the children with and without past dental/medical experience preferred female dentists similar to the observations of this study.^{5,12} Several studies proved that children's preference of dentist's gender is dependent on the sex of the child and the results of the present study reinforce the same.^{3,6,11–14} Children like female dentists because of their nature of being more caring, humane, and empathic. Male dentists are mainly preferred because of the perception that they can achieve more successful results with treatment due to their sturdy nature.⁷ Owing to attitudinal changes and growing intelligence with time, it is possible that older children in the present study chose to be treated by either female or male dentists. Although not studied, a worthy observation is that in general there are more females than males in the dental profession and this could be a reason for choosing females.

Ethnic and cultural differences influence children's and adult's perception and personal preferences about their healthcare professional, and Asian children were found to prefer physicians in white coats.¹⁴ In the present study also, children preferred white coat more than the cartoon attire, irrespective of the sex and history of previous dental visit. Mistry and Tahmassebi¹³ reported no differences in the attire preference between the two genders. Chen¹⁵ and Tong et al.¹⁴ reported that age and gender of child do not influence children's preference of dentist's attire. One study reported sex-dependent differences in the choice of dentist attire, with more girls than boys preferring colored coat.¹¹ In a study among the children in Rajasthan, younger age-group (4–7 years) children preferred cartoon apron and middle-age group and older

Children's Choice of Dentist's Appearance

Table 1: Children's preferences about dentist's appearance based on children's gender

Question	Options	Boys n (%)	Girls n (%)	Total n (%)	X ²	df	p value
Do you prefer a male or female dentist or anyone?	Male dentist	89 (45.4)	15 (7.9)	104 (27.0)	90.771	2	0.000
	Female dentist	45 (23.0)	124 (65.6)	169 (43.9)			
	Anyone	62 (31.6)	50 (26.5)	112 (29.1)			
Which dress do you want your dentist to wear while providing treatment for you?	White coat	95 (48.5)	109 (57.7)	204 (53.0)	10.336	3	0.016
	Casual attire	21 (10.7)	22 (11.6)	43 (11.2)			
	Scrub	11 (5.6)	1 (0.5)	12 (3.1)			
	Cartoon attire	69 (35.2)	57 (30.2)	126 (32.7)			
Which color mask you want your dentist to wear while providing treatment for you?	White	23 (11.7)	15 (7.9)	38 (9.9)	36.342	3	0.000
	Blue	83 (42.3)	41 (21.7)	124 (32.2)			
	Green	47 (24.0)	38 (20.1)	85 (22.1)			
	Pink	43 (21.9)	95 (50.3)	138 (35.8)			
What type of mask you want your dentist to wear while providing treatment for you?	Plain	38 (19.4)	32 (16.9)	70 (18.2)	1.810	3	0.613
	Printed	13 (6.6)	12 (6.3)	25 (6.5)			
	Cartoon	74 (37.8)	64 (33.9)	138 (35.8)			
	Magic mask	71 (36.2)	81 (42.9)	152 (39.5)			

Table 2: Children's preferences about dentist's appearance based on children's age

Question	Options	4-7 years n (%)	8-11 years n (%)	12-15 years n (%)	Total n (%)	X ²	df	p value
Do you prefer a male or female dentist or anyone?	Male dentist	48 (32.4)	47 (25.3)	9 (17.6)	104 (27.0)	10.077	4	0.039
	Female dentist	61 (41.2)	89 (47.8)	19 (37.3)	169 (43.9)			
	Anyone	39 (26.4)	50 (26.9)	23 (45.1)	112 (29.1)			
Which dress do you want your dentist to wear while providing treatment for you?	White coat	41 (27.7)	123 (66.1)	40 (78.4)	204 (53.0)	73.283	6	0.000
	Casual attire	18 (12.2)	20 (10.8)	5 (9.8)	43 (11.2)			
	Scrub	6 (4.1)	6 (3.2)	0	12 (3.1)			
	Cartoon attire	83 (56.1)	37 (19.9)	6 (11.8)	126 (32.7)			
Which color mask you want your dentist to wear while providing treatment for you?	White	11 (7.4)	20 (10.8)	7 (13.7)	38 (9.9)	24.122	6	0.000
	Blue	37 (25.0)	72 (38.7)	15 (29.4)	124 (32.2)			
	Green	29 (19.6)	37 (19.9)	19 (37.3)	85 (22.1)			
	Pink	71 (48.0)	57 (30.6)	10 (19.6)	138 (35.8)			
What type of mask you want your dentist to wear while providing treatment for you?	Plain	12 (8.1)	34 (18.3)	24 (47.1)	70 (18.2)	66.722	6	0.000
	Printed	14 (9.5)	5 (2.7)	6 (11.8)	25 (6.5)			
	Cartoon	75 (50.7)	59 (31.7)	4 (7.8)	138 (35.8)			
	Magic mask	47 (31.8)	88 (47.3)	17 (33.3)	152 (39.5)			

Table 3: Children's preferences about dentist's appearance based on their history of previous dental visit

Question	Options	First dental visit n (%)	Previous dental experience n (%)	Total n (%)	X ²	df	p value
Do you prefer a male or female dentist or anyone?	Male dentist	73 (31.06)	31 (20.67)	104 (27.01)	11.99	2	0.002
	Female dentist	108 (45.96)	61 (40.67)	169 (43.90)			
	Anyone	54 (22.98)	58 (38.67)	112 (29.09)			
Which dress do you want your dentist to wear while providing treatment for you?	White coat	128 (54.47)	76 (50.67)	204 (52.99)	1.04	3	0.791
	Casual attire	25 (10.64)	18 (12.00)	43 (11.17)			
	Scrub	6 (2.55)	6 (4.00)	12 (3.12)			
	Cartoon attire	76 (32.34)	50 (33.33)	126 (32.73)			
Which color mask you want your dentist to wear while providing treatment for you?	White	21 (8.94)	17 (11.33)	38 (9.87)	0.95	3	0.814
	Blue	74 (31.49)	50 (33.33)	124 (32.21)			
	Green	54 (22.98)	31 (20.67)	85 (22.28)			
	Pink	86 (36.60)	52 (34.67)	138 (35.84)			
What type of mask you want your dentist to wear while providing treatment for you?	Plain	37 (15.74)	33 (22.00)	70 (18.18)	7.38	3	0.061
	Printed	19 (8.09)	6 (4.00)	25 (6.49)			
	Cartoon	78 (33.19)	60 (40.00)	138 (35.84)			
	Magic mask	101 (42.98)	51 (34.00)	152 (39.48)			



age-group (8–14 years) children preferred white coat similar to the results of the present study. It is stated that as children age, their anxiety levels decrease and hence the tendency to choose white apron.⁴ It is also stated that younger age-group fear white coat and scrub as they related it to bodily injury.³ Contrary to the results of the present study, majority of the children in Bhopal with previous dental/medical experiences preferred colored attires and those without past dental/medical experiences preferred conventional attire.⁵ In a study of 9–13-year-olds in Raichur of Andhra Pradesh, the least favored attire was the scrub, which is similar to our findings.⁶ On the contrary, in the United States, children aged 4–17 years preferred scrubs followed by white coat.¹⁶ Cohen recommended younger patients be treated by wearing informal attire to make the environment more comfortable.¹⁷ Jafarzadeh reported an experimental study of Iranian children in which they did not find any differences in treatment acceptance between children treated by dentists wearing plain white coats and those treated by dentists wearing white coats adorned with cartoon characters.¹⁸

In a study by Panda, among 6–14-year-olds in Navi Mumbai, it was observed that a large number of children preferred white gloves and plain masks in contrast to colored gloves and cartoon masks, respectively. They stated that owing to familiarity obtained from previous experiences, children were conditioned to choose these options. However, the younger age-groups were fascinated by cartoon painted on masks.⁸ In the present study, strong color and design preferences for mask types were observed. Children chose pink and blue more and white was the least preferred. Similarly magic masks were preferred more than cartoon masks, and plain masks were less preferred compared to printed ones. As children get older, their preferences of colors change based on their experiences. Majority of children in a study chose yellow and blue for representing positive emotion.¹⁹ The distraction component utilized in the magic mask used in this study grabbed the children's attention; however, results obtained could not be compared as it was a novel idea. Considering the mean age of first dental visit of this population which was found to occur at around 6–9 years²⁰ and since majority of the study population were in the age-group of 4–11 years, it would be wise to consider female dentists for the introductory visits and have dentists dressed in both white coat and child-friendly cartoon attire, pink or blue masks, and cartoon or magic masks to attract and motivate them.

The strength of the study lies in the fact that the models photographed belonged to the population studied. Study limitations are (a) inclusion of very young children (less than 6 years) incapable of understanding the questions and choices could have been based on physical appearance of the models, (b) involving children from one hospital only where most providers wear white coat and a few wear scrubs, and (c) possible role of socioeconomic status of the child and the nature of previous dental visit were not studied.

Future research on this population should compare attire preferences of parents for their child's healthcare provider and the child's preference for his or her provider. Experimental studies assessing behavioral changes and treatment acceptance on using specific attire, colors, and mask types should be reported.

In conclusion, age, sex, and previous dental experiences are important variables that determine children's preferences of dentist's appearance. As children grow older and mature, the fear for white coat diminishes and preferences for specific gender of the dentist and child-friendly mask types also decrease. It should,

however, be borne in mind that apart from the appearance, other assets such as communication skills, behavior, and attitude of the dentist have greater impact on the child–dentist relationship.

CLINICAL SIGNIFICANCE

Child-friendly appearance of dentist would be more appropriate for children of younger age-group and could be considered for those visiting the dentist for the first time.

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