



# Attitude & Preference of Children Aged 4 to 12 Years and Their Parents about the Type of Attire and Gender of Dentists

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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

**Objective:** Dentist's gender and appearance, significantly, affect the child's acceptance and makes him cooperate better during the treatment. The purpose of this study was to investigate the preference of children aged 4 to 12 years regarding attire and gender of the dentist.

**Methods:** Four hundred children aged 4 to 12 years were randomly selected from the pediatric department of Kerman Dental Faculty, then they were given a questionnaire that included demographic information and eight images of male and female dentists with different attire. The parent and the child were asked to choose the picture of their desired dentist; After collecting the data, SPSS 26 software was used to check the data. To describe the data, descriptive statistics

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(percentage, frequency, mean and standard deviation) and to analyze the data, Chi-Square tests, T-Test, ANOVA, and Tukey's test were used.

**Results:** Children participating in this study included 49.3% boys and 50.7 % girls with their parents (18.75% fathers, and 81.25% mothers). The findings showed that 30.75% of children and 36 % of parents chose a dentist with colored scrubs and fantasy patterns. Also, most children (66.75%) and parents (72.5%) wanted to be treated by a female dentist. Certainly, most children preferred to be treated by a dentist of the same gender ( $P=0.0001$ ).

**Conclusion:** the majority of Children and parents generally preferred female dentists, but many children tended to choose dentists of the same gender. most girls and parents chose cartoon attire, and most boys chose white coats.

*Keywords: Dental anxiety; white coat; dental fear; pediatric dentist.*

## 1. INTRODUCTION

Managing children in dental clinics can be challenging due to the lack of cooperation from most children during dental treatments. The primary reason for this non-cooperation in dental visits is the fear that children have of dentists [1]. Studies indicate that 5-6% of the general population and 16% of school-aged children experience fear of dentists [2]. Children with dental caries are more fearful of dental visits compared to those without cavities, largely due to negative past experiences [3]. Studies have shown that individuals with higher levels of dental caries had significantly higher average dental fear compared to those without cavities [4]. Moreover, this fear and anxiety can lead to postponing dental treatment [1,5,6].

To overcome fear, pediatric dentists must not only use anxiety control techniques but also strive to establish a friendly relationship with children [7,8]. This friendly relationship between children and dentists reduces children's fear and plays a crucial role in increasing treatment success [3,9]. Additionally, this connection with the child helps them cope with anxiety-inducing stimuli, such as the sound of dental handpieces [2].

Considering the importance of oral health, all dental professionals must be aware of patients' perceptions, preferences, and fears to meet their needs and provide comforting and anxiety-reducing care [8]. Alongside other factors, the dental attire is an essential consideration as it can significantly impact a child's acceptance of dental procedures [4]. When a child enters a dental clinic, their perception of the dentist is influenced by their appearance, and this positive impression in the child's mind is crucial [9,10]. Dental attire should be attractive to pediatric patients to reduce their fear and anxiety towards

dental treatment [11]. This attire can include white coats, fancy and patterned designs, or even simple scrubs [12]. Clinical trials have shown that the effects resulting from the presence of specialists, "white coats" may increase cardiovascular disorders [13]. In many studies concerning individuals' preferences for dental attire, patients preferred medical staff to use white coats as part of their professional attire [3,11]. In some studies, children preferred fantasy attire, while in others, children showed no preference among different attire options [14-17].

Another factor that may play a significant role in reducing children's stress is the gender of the dentist. Some studies have shown that children preferred male dentists, and parents tended to prefer female dentists, but in most cases, children preferred dentists of the same gender [12,18,19]. Given the lack of such studies in Iran, the objective of this research was to ascertain the preferences of children and their parents regarding the type of professional attire and the gender of pediatric dentists.

## 2. METHODS

This cross-sectional descriptive-analytical study was conducted among children aged 4 to 12 years and their parents. The study was carried out in the Pediatric Department of Kerman University of Medical Sciences. The mean age of the children was 7.97 years (ranging from 4 to 12 years), and the mean age of the parents was 36.41 years (ranging from 20 to 61 years). Informed consent was obtained from the parents of participating children.

A total of 417 attendees of the Pediatric Department of the School of Dentistry in Kerman, along with their parents, participated in this study. Out of this number, 17 parents provided incomplete responses to the relevant questionnaire and were subsequently excluded

from the study. The sample size was determined based on similar studies.

### 2.1 Inclusion Criteria were as Follows

- 1) Children aged 4 to 12 years, both boys and girls.
- 2) Absence of systemic diseases that could impair accurate perception of the dental images.
- 3) Children capable of verbal communication.
- 4) Children who may have had prior dental experience or were experiencing their first dental encounter.

### 2.2 Exclusion Criteria were as Follows

- 1) Children with cognitive and awareness limitations.
- 2) Children not accompanied by their legal guardians.
- 3) Participants with siblings.

The questionnaire was randomly distributed among attendees of the Pediatric Department at the School of Dentistry in Kerman. Trained student explained the questions to the parents and asked them to complete the questionnaire before the dental treatment and while waiting. The images of male and female dentists were shown to the children, and their responses were recorded. The individuals depicted in the images had no prior involvement in the dental treatment of the children. The questionnaire was designed based on the study by Ellore et al. [3] and included demographic information as well as images of male and female dentists.

In the demographic section, information about the parents and children, including their age and gender, was recorded.

The images section included high-quality images of male and female dentists with different attire options. Each image was assigned a code for ease of reference (A1 to D2).

- A1: Conventional dental attire: White coat for male dentist
- A2: Conventional dental attire: White coat for female dentist
- B1: Professional attire: green scrubs for male dentist
- B2: Professional attire: green scrubs for female dentist

C1: Friendly attire (fantasy): Colorful scrubs with cartoon images for male dentist

C2: Friendly attire (fantasy): Colorful scrubs with cartoon images for female dentist

D1: Casual attire: Plain colored scrubs with trousers for male dentist

D2: Casual attire: Plain colored scrubs with trousers for female dentist

Data were analyzed using SPSS 26. Descriptive statistics (percentage, frequency, mean, and standard deviation) were used to describe the data. Chi-Square test was used to assess the relationship between categorical variables, such as the relationship between children's and parents' gender and the type of attire used. T-test was utilized to examine the relationship between quantitative variables, such as age, and binary qualitative variables, such as children's and parents' gender. ANOVA test was used to investigate the association between attire types and age. Tukey's post hoc test was employed for pairwise comparisons. The research was approved by the Ethics Committee of Kerman University of Medical Sciences, with the ethical code IR.KMU.REC.1401.220.

## 3. RESULTS

In this study, 400 children participated, comprising 197 boys (49.3%) and 203 girls (50.7%), along with their parents, consisting of 75 fathers (18.75%) and 325 mothers (81.25%).

The results regarding children's preferences for dental attire and the dentist's gender are presented in Table 1. According to Table 1, 30.75% of children chose image C2 as their preferred dental attire.

The results regarding parents' preferences for dental attire and the dentist's gender are presented in Table 2. According to Table 2, 36% of parents chose image C2 as their preferred dental attire.

Therefore, overall, the majority of children and parents preferred to be treated by female dentists (Table 3).

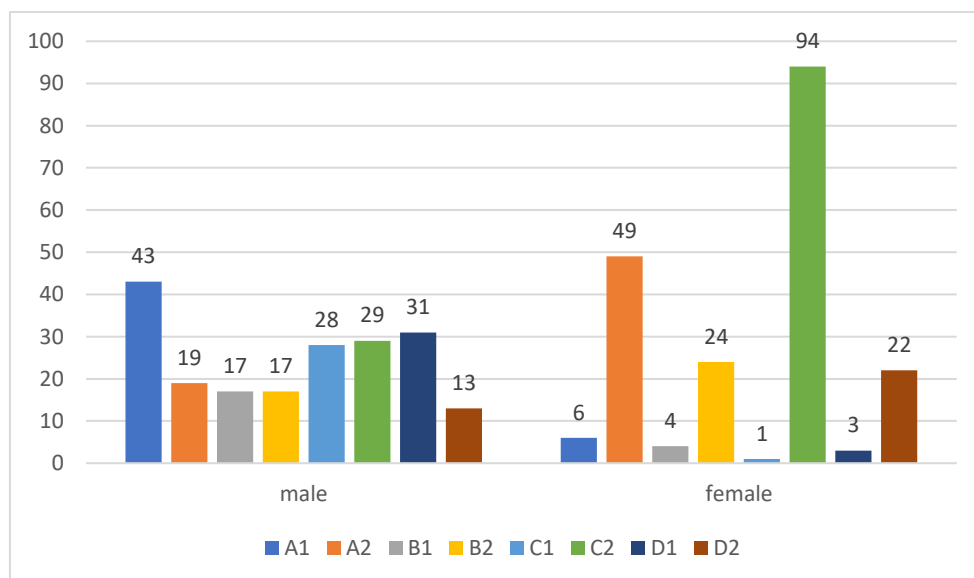
Based on the Pearson Chi-Square test, there was a significant difference in the preference of children based on their gender ( $p = 0.001$ ). According to Graph 1, the majority of girls (94 individuals) preferred image C2, while most boys (43 individuals) chose image A1.

**Table 1. Children's preferences for dentist's attire and gender**

Type	Frequency	Percentage
A1: Conventional dental attire: White coat for male dentist	49	12.25
A2: Conventional dental attire: White coat for female dentist	68	17
B1: Professional attire: Green scrubs for male dentist	21	5.25
B2: Professional attire: green scrubs for female dentist	41	10.25
C1: Friendly attire (fantasy): Colorful scrubs with cartoon images for male dentist	29	7.2
C2: Friendly attire (fantasy): Colorful scrubs with cartoon images for female dentist	123	30.75
D1: Casual attire: Plain colored scrubs with trousers for male dentist	34	8.5
D2: Casual attire: Plain colored scrubs with trousers for female dentist	35	8.8
Total	400	100

**Table 2. Parents' preferences for dentist's attire and gender**

Type	Frequency	Percentage
A1: Conventional dental attire: White coat for male dentist	33	8.3
A2: Conventional dental attire: White coat for female dentist	52	13
B1: Professional attire: Green scrubs for male dentist	22	5.5
B2: Professional attire: Green scrubs for female dentist	50	12.5
C1: Friendly attire (fantasy): Colorful scrubs with cartoon images for male dentist	33	8.3
C2: Friendly attire (fantasy): Colorful scrubs with cartoon images for female dentist	144	36
D1: Casual attire: Plain colored scrubs with trousers for male dentist	22	5.5
D2: Casual attire: Plain colored scrubs with trousers for female dentist	44	11
Total	400	100



**Graph 1. Relationship between the gender of the child and the child's preference**

**Table 3. Preferences of children and parents regarding the choice of dentist's gender**

Childs preference	Frequency	Percentage
Male dentist	133	32.25
Female dentist	267	66.75
Parents preference	Frequency	Percentage
Male dentist	110	27.5
Female dentist	290	72.5

Additionally, the results showed that overall, boys significantly preferred male dentist images, while girls significantly preferred female dentist images (p-value < 0.001) (Table 4).

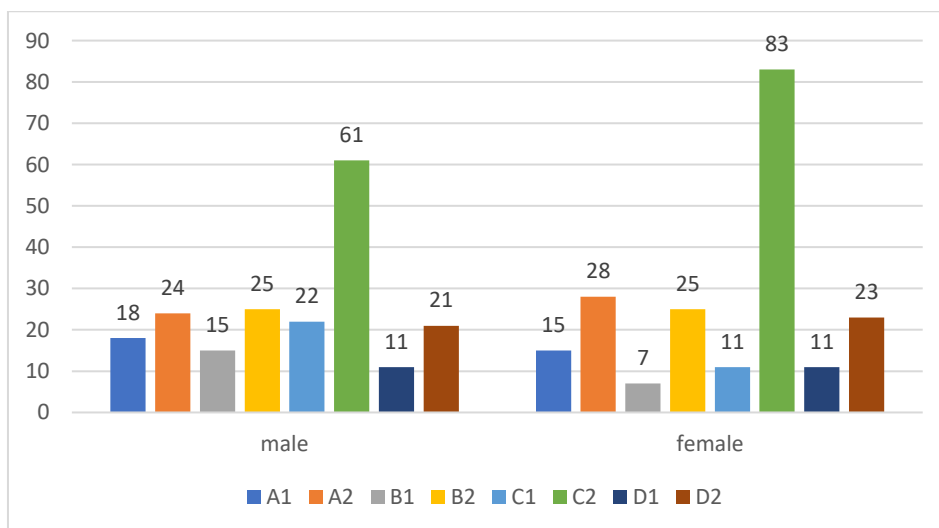
Based on the Pearson Chi-Square test, there was no significant difference in parental preference based on the gender of the child. Most parents of both girls and boys selected image C2 (p=0.161).

Overall, the results showed that both fathers and mothers had a greater preference for a female dentist to treat their children (p=0.496) (Table 5).

The analysis of children's preferences and their ages showed that the average age of the children was nearly the same in all cases (p > 0.05). However, children who preferred image D2 compared to those who chose image A1 were significantly younger (p = 0.011) or image B1 (p = 0.011) (Table 6).

**Table 4. Relationship between children's gender and preferred dentist's gender**

Preference	Male dentist	Female dentist	Frequency (percentage)
Boy	119 (60.4)	78 (29.6)	197 (100)
Girl	14 (6.9)	189 (93.1)	203 (100)
Total	133 (33.3)	267 (66.7)	400 (100)



**Graph 2. Relationship between the gender of the child and the parental preference**

**Table 5. Association between parental gender and the preferred gender of the dentist from the parents' perspective**

Preference	Male dentist	Female dentist	Frequency (percentage)
Father	23 (30.7)	52 (69.3)	75 (100)
Mother	87 (26.8)	238 (73.2)	325 (100)
Total	110 (27.5)	290 (72.5)	400 (100)

**Table 6. Comparison of the age of children with their preferences for selecting a dentist's attire**

Child preference	Children frequency	Average age of the children	Standard deviation
A1: Conventional dental attire: White coat for male dentist	49	8.69	2.44
A2: Conventional dental attire: White coat for female dentist	68	8.24	2.46
B1: Professional attire: Green scrubs for male dentist	21	9.14	2.37
B2: Professional attire: Green scrubs for female dentist	41	8.2	2.54
C1: Friendly attire (fantasy): Colorful scrubs with cartoon images for male dentist	29	7.66	2.39
C2: Friendly attire (fantasy): Colorful scrubs with cartoon images for female dentist	123	7.76	2.06
D1: Casual attire: Plain colored scrubs with trousers for male dentist	34	7.5	2.43
D2: Casual attire: Plain colored scrubs with trousers for female dentist	35	6.89	2.19
Total	400	7.97	2.36

**Table 7. Comparison of the children's ages in parental preferences for dentist attire choice**

Parents preference	Parents frequency	Average age of the children	Standard deviation
A1: Conventional dental attire: White coat for male dentist	33	8.45	2.56
A2: Conventional dental attire: White coat for female dentist	52	8.52	2.48
B1: Professional attire: Green scrubs for male dentist	22	9.23	2.29
B2: Professional attire: Green scrubs for female dentist	50	8.12	2.37
C1: Friendly attire (fantasy): Colorful scrubs with cartoon images for male dentist	33	7.61	2.42
C2: Friendly attire (fantasy): Colorful scrubs with cartoon images for female dentist	144	7.54	2.11
D1: Casual attire: Plain colored scrubs with trousers for male dentist	22	7.95	2.57
D2: Casual attire: Plain colored scrubs with trousers for female dentist	44	7.82	2.40
Total	400	7.97	2.36

The age of the children also did not have a significant impact on parental preferences in most cases ( $P>0.05$ ). The only significant difference was related to the two types of images C2 and B1 ( $P=0.036$ ), where parents who chose a female dentist with cartoon attire had significantly younger children compared to parents who chose a male dentist with green scrubs (Table 7).

Regarding the relationship between the age of parents and the choice of dentist, the results showed that the average age of parents in selecting a dentist did not demonstrate a significant difference ( $P>0.05$ ).

#### 4. DISCUSSION

The friendly relationship between children and dentists holds the utmost importance in improving treatment success [3,4,9]. Psychiatrists also emphasize the impact of the initial connection [11]. In the current study, it was shown that a total of 66.5% of children and 72.5% of parents preferred to be treated by a female dentist. However, most children preferred to be treated by a same-gender dentist, with more girls choosing a female dentist with colorful cartoon attire and more boys selecting a male dentist with white attire. Parents also preferred a female dentist with colorful attire.

The finding that boys preferred male dentists more and girls preferred female dentists more is consistent with studies by Ricci Volpato in Brazil [20], India [18,21,22], Singapore [17], and Saudi Arabia (2). Therefore, based on the present study and previous research, it seems that interactions between children and same-gender dentists may be more favorable, possibly due to developmental reasons and cultural influences, leading to greater cooperation with dentists of the same gender [2].

However, other studies conducted in Turkey [7], Saudi Arabia [23], Spain, and Uruguay [12] have shown that most children prefer to be treated by a female dentist regardless of the child's gender. According to a systematic review and meta-analysis [15], some studies cited reasons for preferring female dentists, stating that younger children perceive female dentists to be similar to their mothers. Additionally, Asokan and colleagues found that anxious children prefer treatment by female dentists [18], which supports the aforementioned reasons.

Another finding of our study was the preference for white attire by boys and cartoon attire by girls, with a significant difference between the genders. Most studies in various countries such as Brazil [20], India [10,21,22], Saudi Arabia [23], Israel [12], and Turkey [24] showed that all children preferred white attire regardless of gender. These studies suggest that children feel more comfortable with dentists in white attire. Additionally, preferring dentists in white attire represents a professional image, which boosts the patient's confidence [25]. Furthermore, children may be accustomed to white attire worn by healthcare professionals, such as pediatricians and family doctors [24]. The preference for formal attire may be related to the predetermined image children have of dentists. In our study, children who chose a female dentist with colorful scrubs (red) had the lowest average age. Ravikumar and colleagues [25] also observed that age can influence a child's preference, with children under the age of 8 preferring dentists in casual attire and those over 8 years choosing white attire or surgical scrubs. Therefore, dentists should consider age and gender to improve their relationship with children in attire selection.

Regarding parents, the current study showed that their preferred choice was a female dentist with colorful attire. This finding is consistent with the results of studies by Ricci Volpato in Brazil

[20] and Ellore in India [3], indicating that while children prefer white attire, parents chose colorful and child-oriented attire. However, it contrasts with Mistry and colleagues' study in England, which showed that parents significantly preferred formal and informal attire [26]. Parents' opinions may vary from those of their children, and the choice of colorful attire in most studies may result from parents believing that their children are less anxious about cartoon attire. Furthermore, this study indicated that parents' attire and the gender of the dentist had no significant association with the child's or parent's gender.

## 5. CONCLUSION

This study revealed that, overall, children and parents preferred female dentists. However, children exhibited a preference for dentists of the same gender. Results also showed that more girls chose dentists with colorful attire, while more boys preferred dentists in white attire. The parents' preference was for dentists with colorful attire. The implementation limitations of the study due to the COVID-19 pandemic necessitated the use of additional protective attire, including sterile surgical gowns, but dentists can still establish communication with children before starting the procedure using the child's preferred attire and utilize protective gear during treatment.

## CONSENT

As per international standard, parental written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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