

3 Original Research Article

4 **Attitude & Preference of Children Aged 4To 12 Years and Their Parents About the**
5 **Type of Attire and Gender of Dentists**

6

Abstract

7

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

12 **Method:** 400 children aged 4 to 12 years were randomly selected from the pediatric
13 department of Kerman Dental Faculty, then they were given a questionnaire that
14 included demographic information and eight images of male and female dentists with
15 different attire. The parent and the child were asked to choose the picture of their
16 desired dentist; After collecting the data, SPSS 26 software was used to check the
17 data.To describe the data, descriptive statistics (percentage, frequency, mean and
18 standard deviation) and to analyze the data, Chi-Square tests, T-Test, ANOVA, and
19 Tukey's test were used.

20 **Results:** Children participating in this study included 49.3% boys and 50.7 % girls with
21 their parents(18.75% fathers, and 81.25% mothers). The findings showed that 30.75%
22 of children and 36 % of parents chose a dentist with colored scrubs and fantasy
23 patterns. Also, most children (66.75%) and parents (72.5%) wanted to be treated by a

24 female dentist. Certainly, most children preferred to be treated by a dentist of the same
25 gender ($P=0.0001$).

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

29 **Keywords:** Children, White coat, Dentist attire, Dentist's gender.

30

31 **Introduction:**

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

41 To overcome fear, pediatric dentists must not only use anxiety control techniques but
42 also strive to establish a friendly relationship with children (8,7). This friendly
43 relationship between children and dentists reduces children's fear and plays a crucial
44 role in increasing treatment success (3, 9). Additionally, this connection with the child
45 helps them cope with anxiety-inducing stimuli, such as the sound of dental handpieces
46 (2).

47 Considering the importance of oral health, all dental professionals must be aware of
48 patients' perceptions, preferences, and fears to meet their needs and provide comforting
49 and anxiety-reducing care (8). Alongside other factors, the dental attire is an essential
50 consideration as it can significantly impact a child's acceptance of dental procedures

51 (4). When a child enters a dental clinic, their perception of the dentist is influenced by
52 their appearance, and this positive impression in the child's mind is crucial (9, 10).
53 Dental attire should be attractive to pediatric patients to reduce their fear and anxiety
54 towards dental treatment (11). This attire can include white coats, fancy and patterned
55 designs, or even simple scrubs (12). Clinical trials have shown that the effects resulting
56 from the presence of specialists, "white coats" may increase cardiovascular
57 disorders.(13). In many studies concerning individuals' preferences for dental attire,
58 patients preferred medical staff to use white coats as part of their professional attire (3,
59 11). In some studies, children preferred fantasy attire, while in others, children showed
60 no preference among different attire options (14-17).

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

67 **Method:**

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

74 A total of 417 attendees of the Pediatric Department of the School of Dentistry in
75 Kerman, along with their parents, participated in this study. Out of this number, 17
76 parents provided incomplete responses to the relevant questionnaire and were
77 subsequently excluded from the study. The sample size was determined based on
78 similar studies.

79 Inclusion criteria were as follows:

80 1) Children aged 4 to 12 years, both boys and girls.

81 2) Absence of systemic diseases that could impair accurate perception of the dental
82 images.

83 3) Children capable of verbal communication.

84 4) Children who may have had prior dental experience or were experiencing their first
85 dental encounter.

86 Exclusion criteria were as follows:

87 1) Children with cognitive and awareness limitations.

88 2) Children not accompanied by their legal guardians.

89 3) **Participants with siblings.**

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

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

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

103 A1: Conventional dental attire: White coat for male dentist

- 104 A2: Conventional dental attire: White coat for female dentist
- 105 B1: Professional attire: Green scrubs for male dentist
- 106 B2: Professional attire: green scrubs for female dentist
- 107 C1: Friendly attire (fantasy): Colorful scrubs with cartoon images for male dentist
- 108 C2: Friendly attire (fantasy): Colorful scrubs with cartoon images for female dentist
- 109 D1: Casual attire: Plain colored scrubs with trousers for male dentist
- 110 D2: Casual attire: Plain colored scrubs with trousers for female dentist

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

121 **Results:** In this study, 400 children participated, comprising 197 boys (49.3%) and
 122 203 girls (50.7%), along with their parents, consisting of 75 fathers (18.75%) and
 123 325 mothers (81.25%).

124 **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

125

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

129 **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	52	13

female dentist		
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

130

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

134

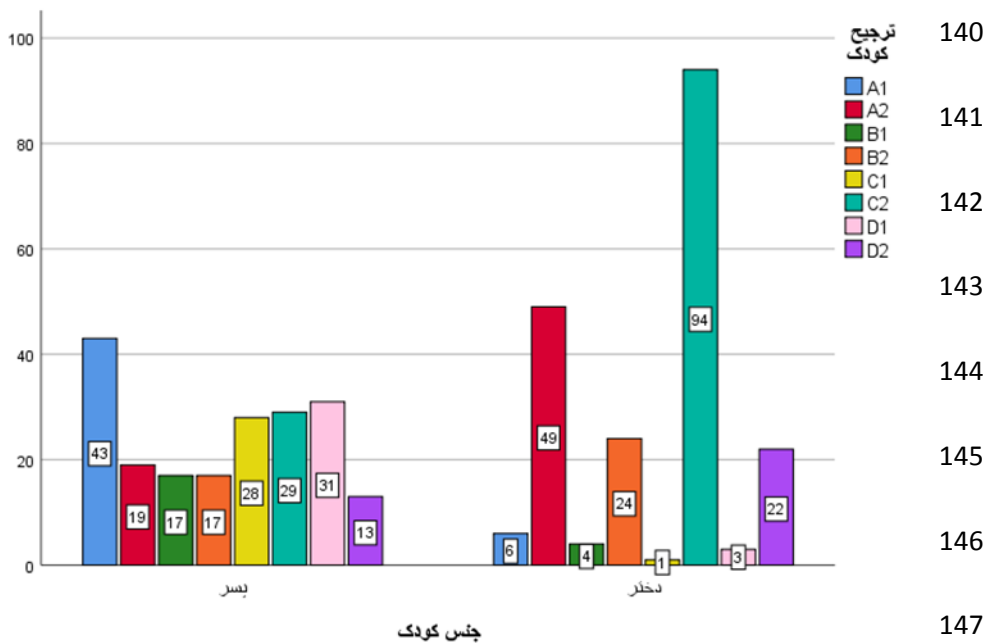
135 **Table 3. Preferences of children and parents regarding the choice of dentist's**
 136 **gender.**

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

137

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



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

152

153 Based on the Pearson Chi-Square test, there was a significant difference in the
 154 preference of children based on their gender ($p = 0.001$). According to Graph 1, the

155 majority of girls (94 individuals) preferred image C2, while most boys (43 individuals)
 156 chose image A1.

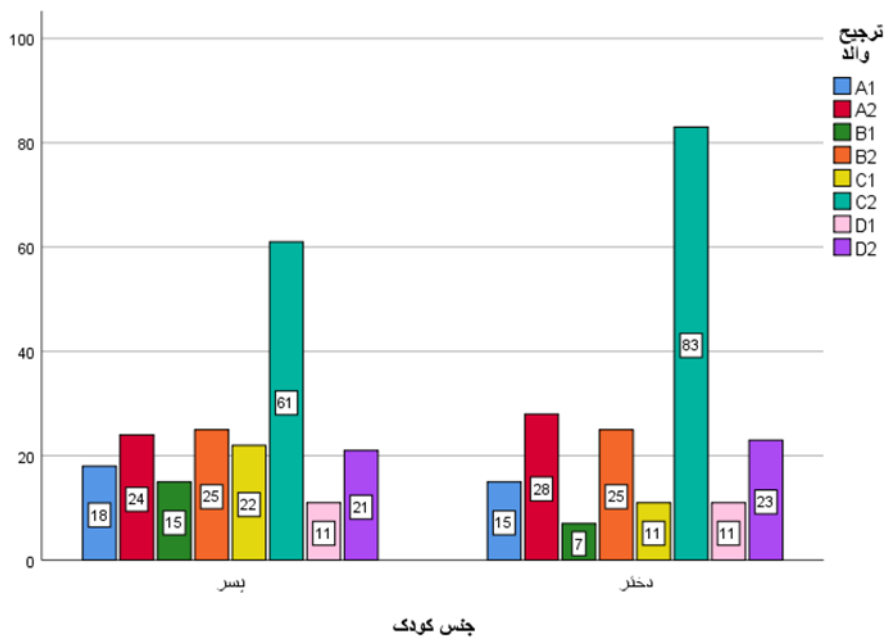
157

158 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)

159

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



163

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

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

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

170

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)

171

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

174

175 **Table 6. Comparison of the age of children with their preferences for selecting a**
 176 **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	21	9.14	2.37

dentist			
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

177

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

182 Table 7. Comparison of the Children's Ages in Parental Preferences for Dentist attire
183 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
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185 The age of the children also did not have a significant impact on parental preferences
186 in most cases ($P>0.05$). The only significant difference was related to the two types of
187 images C2 and B1 ($P=0.036$), where parents who chose a female dentist with cartoon
188 attire had significantly younger children compared to parents who chose a male dentist
189 with green scrubs (Table 7).

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

193 Discussion:

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

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

207 However, other studies conducted in Turkey (7), Saudi Arabia (23), Spain, and
208 Uruguay (12) have shown that most children prefer to be treated by a female dentist
209 regardless of the child's gender. According to a systematic review and meta-analysis

210 (15), some studies cited reasons for preferring female dentists, stating that younger
211 children perceive female dentists to be similar to their mothers. Additionally, Asokan
212 and colleagues found that anxious children prefer treatment by female dentists (18),
213 which supports the aforementioned reasons.

214 Another finding of our study was the preference for white attire by boys and cartoon
215 attire by girls, with a significant difference between the genders. Most studies in various
216 countries such as Brazil (20), India (10, 21, 22), Saudi Arabia (23), Israel (12), and
217 Turkey (24) showed that all children preferred white attire regardless of gender. These
218 studies suggest that children feel more comfortable with dentists in white attire.

219 Additionally, preferring dentists in white attire represents a professional image, which
220 boosts the patient's confidence (25). Furthermore, children may be accustomed to
221 white attire worn by healthcare professionals, such as pediatricians and family doctors
222 (24). The preference for formal attire may be related to the predetermined image
223 children have of dentists. In our study, children who chose a female dentist with colorful
224 scrubs (red) had the lowest average age. Ravikumar and colleagues (25) also
225 observed that age can influence a child's preference, with children under the age of 8
226 preferring dentists in casual attire and those over 8 years choosing white attire or
227 surgical scrubs. Therefore, dentists should consider age and gender to improve their
228 relationship with children in attire selection.

229 Regarding parents, the current study showed that their preferred choice was a female
230 dentist with colorful attire. This finding is consistent with the results of studies by Ricci
231 Volpato in Brazil (20) and Ellore in India (3), indicating that while children prefer white
232 attire, parents chose colorful and child-oriented attire. However, it contrasts with Mistry
233 and colleagues' study in England, which showed that parents significantly preferred
234 formal and informal attire (26). Parents' opinions may vary from those of their children,
235 and the choice of colorful attire in most studies may result from parents believing that
236 their children are less anxious about cartoon attire. Furthermore, this study indicated

237 that parents' attire and the gender of the dentist had no significant association with the
238 child's or parent's gender.

239 **Conclusion:**

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

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UNDER PEER REVIEW