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Socio-economic and gender dynamics influence on the parental decision-making process for children's orthodontic care – A study in Madinah, Saudi Arabia

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Abstract

OBJECTIVES: To investigate the socio-economic and personal factors that impact parental decisions regarding orthodontic treatment for their children in Madinah, Saudi Arabia.

MATERIALS AND METHODS: A digital self-administered questionnaire was employed to collect data from 414 parents, focusing on their motivations and barriers that influence their decision-making process regarding orthodontic treatment.

RESULTS: Income level was the most significant factor in orthodontic decisions. Parents with higher incomes were twice as likely to choose orthodontic treatment for esthetic reasons compared to parents with middle incomes. The main incentive for seeking treatment was getting advice from dental professionals, with 60% of participants rating it as the most important factor. 34.5% of respondents identified cost as the main barrier, with middle-income parents being 151% more inclined to perceive it as a significant barrier compared to high-income parents. Gender dynamics revealed that mothers exhibited 48.9% greater concern regarding treatment costs compared to fathers, whereas fathers placed 2.105 times more importance on the orthodontist's reputation than mothers.

CONCLUSION: Income levels, along with other socio-economic factors and gender dynamics, have a significant influence on parental decisions regarding orthodontic care. Personalized consultations that address these variations are crucial for improving communication between patients and practitioners and increasing the accessibility of treatment.

Keywords:

Children, decision making, health service accessibility, motivation, orthodontics, parental attitudes, Saudi Arabia, socio-economic factors

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Introduction

A common motivation for orthodontic treatment is the desire to improve facial, dental, and smile appearance. A variety of psychological, social, and cultural factors influence the decision to pursue such treatment for both children and adults.^[1,2] Understanding how children and their parents perceive malocclusion

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is essential for predicting the demand, motivation, and cooperation for orthodontic treatment.^[3]

Malocclusion is the third most common abnormal dental condition after caries and gingival disease according to the World Health Organization (WHO).^[4] It has a significant impact on oral health-related quality of life, affecting appearance, function, social interactions, and social well-being.^[5] Particularly affected are

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children and adolescents, who represent the largest proportion of orthodontic referrals.^[6,7] In British and North American populations, 60% to 75% of children under 16 years old have malocclusion.^[8-10] 88% of children in Saudi Arabia exhibit one or more malocclusion characteristics.^[11,12]

The decision to undergo orthodontic treatment is involved and influenced by physiological, esthetic, functional, social, and economic considerations, as well as intangible personal values and principles.^[13,14] Motivation and willingness to comply with the orthodontist's instructions are intrinsically linked. Therefore, orthodontists must have a thorough comprehension of the patient's reasons for seeking treatment.^[2,15] This knowledge facilitates the development of an appropriate treatment plan and the effective motivation of patients throughout the orthodontic process. In addition, it is a matter of public health concern that individuals who would benefit from orthodontic treatment have access to professional guidance.^[16,17]

According to a study conducted by Al-Emran in Saudi Arabia involving 1459 children aged 9 to 17, the vast majority (92%) of participants believe that proper occlusion is essential.^[18] The patients' subjective perceptions of their oral appearance, age, gender, peer group expectations, and self-esteem all influence their decision to undergo orthodontic treatment.^[19] The final treatment decision is frequently influenced by parental socio-economic factors, personal experiences, confidence in the profession, and perceived needs and self-esteem of their children.^[20]

Understanding the motivating factors and barriers from the perspective of parents is of critical importance. This study aims to explore the factors that influence parents in Madinah, Saudi Arabia, to initiate orthodontic treatment for their children. By gaining an understanding of these factors, healthcare providers and policymakers can better tailor orthodontic services, improve access to treatment, and improve the population's oral health and well-being.

Materials and Methods

Ethical approval was granted by the relevant Research Ethics Committee, and the study was conducted in adherence to the principles outlined by the World Medical Association in the Declaration of Helsinki.

The sample size was calculated using OpenEpi StatCalc version 3.01. The confidence level was set at 95%, with a power of 80% and a 50% anticipated frequency. A convenient sample of 384 participants was determined.

Inclusion criteria comprised parents who had a child of at least 7 years old and had no official dental or

orthodontic qualifications. Prior to proceeding to the core of the questionnaire, participants were provided with a participant information sheet and an informed consent form, which required their approval by ticking the box after reading the information.

A tailored electronic self-administered questionnaire with closed-ended answers was designed specifically for this study. Plain and simple Arabic language was used. Content and face validity were evaluated by an independent epidemiologist and consultant orthodontist, and ten participants from the targeted population regarding the clarity and understanding of the questions. Feedback and comments were addressed prior to questionnaire distribution. Participants were recruited locally from various settings, including the Orthodontic Outpatient Department at the University Dental Hospital, different public and private hospitals and dental centers, and shopping malls. The data collection period started in June 2020 and ended in January 2023.

The questionnaire core was composed of three sections. The first section included demographic data: sex, age, education, and income levels; aesthetic self-perception; and history of orthodontic treatment for the parents. The second and third sections measured the motivating and deterring factors, respectively, from the parental perspective regarding their children's orthodontic treatment needs using a 5-point Likert scale.

SPSS, version 26.0 (IBM Corp., NY, USA), was used for statistical analysis. Both descriptive and analytical statistical tests were used. For nominal data and sub-group analysis, the Chi-square test with the Bonferroni adjustment and Fisher's exact test were used. Sub-group quantitative data were analyzed using the Mann-Whitney U and Kruskal-Wallis tests. Ordinal logistic regression analyses were performed to test the interactions between dependent and independent variables, expressed as odds ratio (OR) with 95% confidence intervals (95% CI). A *P* value of less than 0.05 was chosen as the threshold for statistical significance.

Results

Four hundred and fourteen parents participated in the study. The mean age was 45.96 years old, with the minimum and maximum ages being 31 and 84 years old, respectively. The percentages of female and male participants were 44.9% and 55.1%, respectively. Full demographic descriptive statistics can be found in Table 1.

Regarding parents' previous experience and self-perception, only 24.2% of parents reported having

a history of orthodontic treatment. While 52.7% of the participants were satisfied with their dental appearance, there was a statistical significance between low-income and high-income groups. Moreover, only 30.4% were considering orthodontic treatment for themselves, with a statistically significant difference among participants' sexes (female to male OR 2.414, *P* value 0.000) [Table 2].

The overall consensus on motivators and barriers that influence parental treatment decision-making is presented in [Figure 1].

Upon analyzing the significance of each independent factor separately on the motivating and barrier variables, participants' income level was the most significant independent factor influencing 9 out of 12 statements regarding motivating and barrier factors, followed by sex and self-satisfaction (4 out of 12). Parental history of orthodontic treatment was the least significant independent variable [Tables 3 and 4].

To account for and control the effects of all independent factors concurrently, an ordinal regression model was employed. Income was the most significant factor for all positive and negative factors influencing the decision-making process, followed by parental gender, previous exposure, and future consideration toward

orthodontic treatment. Parental self-satisfaction with their dental alignment was the least significant variable for the motivators and barrier factors [Tables 5 and 6].

Discussion

Orthodontic literature has focused on parental perceptions and concerns regarding their children's malocclusion, esthetic, and functional issues.^[21-24] While clinically relevant, such a focus often overlooks the many socio-economic and personal factors that influence parental orthodontic intervention decisions for their

Table 1: Descriptive statistics of the sample demographic data

Variable	Number	Percentage
Total Sample	414	(100%)
Mean Age	45.96	(SD±9.05)
Sex		
Female	186	(44.9%)
Male	228	(55.1%)
Income level		
Low	66	(16.0%)
Middle	116	(28.0%)
High	232	(56.0%)

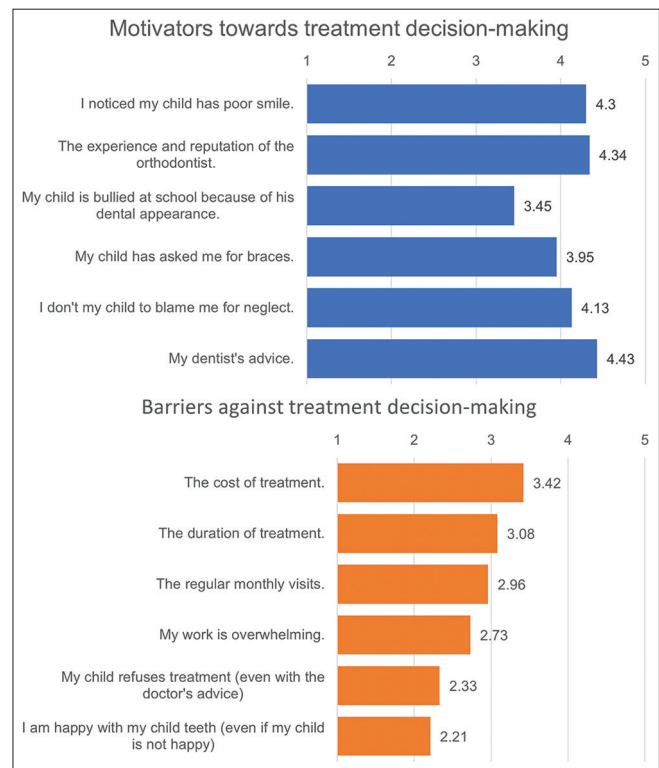


Figure 1: Overall agreement of motivators and barriers influencing treatment decision-making

Table 2: Interactions between independent variables, with Chi-square (χ^2) significance level. (N.S.) denotes no statistical significance

Variable	Sex n (%)		χ^2 significance	Income Level n (%)			χ^2 significance
	Females	Males		Low	Middle	High	
Did you have braces before?							
No	136 (73.1%)	178 (78.1%)	N.S.	42 (63.6%)	88 (75.9%)	184 (79.3%)	N.S.
Yes	50 (26.9%)	50 (21.9%)		24 (36.4%)	28 (24.1%)	48 (20.7%)	
Are you satisfied with your dental alignment?							
No	80 (43%)	94 (41.2%)	N.S.	36 (54.5%)	64 (55.2%)	74 (31.9%)	<i>P</i> <0.000
Indifferent	12 (6.5%)	10 (4.4%)		10 (15.2%)	2 (1.7%)	10 (4.3%)	
Yes	94 (50.5%)	124 (54.4%)		20 (30.3%)	50 (43.1%)	148 (63.8%)	
Are you considering having braces in the future?							
No	102 (54.8%)	162 (71.1%)	<i>P</i> <0.000	24 (36.4%)	74 (63.8%)	166 (71.6%)	<i>P</i> <0.000
Indifferent	8 (4.3%)	16 (7.0%)		8 (12.1%)	6 (5.2%)	10 (4.3%)	
Yes	76 (40.9%)	50 (21.9%)		34 (51.5%)	36 (31.0%)	56 (24.1%)	

Table 3: Motivating factors independent sub-group analysis. (*) denotes statistical significance with $P < 0.05$. Superscript letters (a, b) denote *post-hoc* significance between sub-groups

	Mann-Whitney U test (mean rank, P)		Kruskal-Wallis test (mean rank, P significance)		
	Sex	Did you have braces before?	Income level:	Are you satisfied with your dental alignment?	Are you considering having braces in the future?
	F: Female M: Male	N: No Y: Yes	L: Low M: Middle H: High	N: No I: Indifferent Y: Yes	N: No I: Indifferent Y: Yes
I noticed my child has poor smile (I want them more beautiful)	F: 211.60 M: 204.16 P-sig: 0.481	N: 200.10 Y: 230.74 P-sig: 0.013*	L: 235.65 ^{ab} M: 190.71 ^a H: 207.89 ^b P-sig: 0.024*	N: 185.05 ^a I: 213.59 Y: 224.80 ^a P-sig: 0.001*	N: 213.42 I: 191.83 Y: 198.09 P-sig: 0.316
The experience and reputation of the orthodontist.	F: 203.60 M: 210.68 P-sig: 0.493	N: 200.33 Y: 230.00 P-sig: 0.014*	L: 213.99 M: 229.26 ^a H: 194.80 ^a P-sig: 0.013*	N: 215.05 I: 207.77 Y: 201.44 P-sig: 0.442	N: 207.68 I: 202.67 Y: 208.04 P-sig: 0.973
My child is bullied because of the dental appearance.	F: 203.66 M: 208.62 P-sig: 0.674	N: 204.15 Y: 213.82 P-sig: 0.461	L: 223.13 M: 225.41 ^a H: 192.46 ^a P-sig: 0.018*	N: 203.03 I: 194.05 Y: 210.56 P-sig: 0.706	N: 212.82 I: 220.83 Y: 190.63 P-sig: 0.164
My child has asked me for braces.	F: 210.66 M: 204.92 P-sig: 0.606	N: 202.49 Y: 223.24 P-sig: 0.108	L: 242.56 ^a M: 211.90 H: 195.33 ^a P-sig: 0.010*	N: 206.59 I: 210.95 Y: 207.88 P-sig: 0.983	N: 209.05 I: 207.08 Y: 204.33 P-sig: 0.927
I don't want my child to blame me for neglect in the future.	F: 220.02 M: 193.91 P-sig: 0.014*	N: 199.84 Y: 224.00 P-sig: 0.054	L: 230.44 ^a M: 233.82 ^b H: 184.73 ^{ab} P-sig: 0.000*	N: 217.74 I: 203.23 Y: 195.78 P-sig: 0.134	N: 206.16 I: 192.58 Y: 206.61 P-sig: 0.831
My dentist's advice.	F: 223.31 M: 193.61 P-sig: 0.005*	N: 204.05 Y: 218.32 P-sig: 0.231	L: 215.89 M: 188.93 H: 214.40 P-sig: 0.075	N: 175.36 ^a I: 225.32 Y: 231.35 ^a P-sig: 0.000*	N: 219.97 I: 177.67 Y: 187.06 P-sig: 0.005*

children. This study addressed this gap by systematically examining parents' gender, income, dental esthetic self-satisfaction, and orthodontic experiences. Several studies highlighted the importance of exposing and integrating these variables into orthodontic consultations and treatment planning. This expanded approach aimed to improve practitioner–parent communication, potentially resulting in treatment plans that better match parental perspectives and circumstances.^[25,26]

Among 414 parents, income was the most important factor in their orthodontic decisions for their children, followed by sex, previous orthodontic treatment, consideration of treatment for themselves, and personal satisfaction with their dental alignment. These findings matched with previous Saudi Arabian regional studies.^[21–24] Participants agreed strongly on treatment uptake decision-making motivators. Dentist advice was the most persuasive factor in parents' treatment decisions, while school bullying concerns were the least. Compared to motivating factors, barrier factors were of lesser significance to the entire sample. The cost of treatment and parental satisfaction with their child's appearance were the most and least reported negative

factors that influence parents' orthodontic treatment decisions [Figure 1].

Income levels most strongly influenced parents' orthodontic treatment decisions for their children. Saad AlAnzan *et al.*^[22] found that socio-economic status influenced orthodontic treatment in Riyadh city Saudis, with socio-economic status determining orthodontic treatment more than patient willingness.

High-income parents took esthetics into account more than middle-income parents, choosing orthodontic treatment twice as often for their child's smile (P value < 0.000). The literature worldwide documented parents' perception and decision to seek treatment based on their children's dental esthetics.^[14,26–32] A recent systematic review found that parental socio-economic status correlates with orthodontic treatment perception and need.^[33] Several Saudi Arabian studies suggested that these parents value dental esthetics due to societal pressures or personal values associated with higher income brackets.^[22,23,34]

Interestingly, income differentiation affected children's braces requests. Low-income and middle-income parents

Table 4: Barrier factors independent sub-group analysis. (*) denotes statistical significance with $P < 0.05$. Superscript letters (a, b) denote post-hoc significance between sub-groups

	Mann-Whitney <i>U</i> test (mean rank, <i>P</i>)		Kruskal-Wallis test (mean rank, <i>P</i> significance)		
	Sex	Did you have braces before?	Income level:	Are you satisfied with your dental alignment?	Are you considering having braces in the future?
	F: Female M: Male	N: No Y: Yes	L: Low M: Middle H: High	N: No I: Indifferent Y: Yes	N: No I: Indifferent Y: Yes
The cost of treatment.	F: 222.97 M: 194.88 <i>P</i> -sig: 0.014*	N: 207.40 Y: 207.80 <i>P</i> -sig: 0.976	L: 220.71 ^a M: 247.55 ^b H: 183.72 ^{ab} <i>P</i> -sig: 0.000*	N: 226.97 ^a I: 202.59 Y: 192.45 ^a <i>P</i> -sig: 0.013*	N: 198.90 ^a I: 251.83 ^a Y: 217.07 <i>P</i> -sig: 0.021*
The duration of treatment.	F: 210.39 M: 205.14 <i>P</i> -sig: 0.648	N: 211.58 Y: 194.70 <i>P</i> -sig: 0.207	L: 198.08 ^a M: 258.79 ^{ab} H: 184.52 ^b <i>P</i> -sig: 0.000*	N: 230.28 ^a I: 194.95 Y: 190.58 ^a <i>P</i> -sig: 0.003*	N: 199.36 I: 246.18 Y: 217.18 <i>P</i> -sig: 0.090
The regular monthly visits.	F: 207.66 M: 205.54 <i>P</i> -sig: 0.854	N: 202.39 Y: 219.68 <i>P</i> -sig: 0.198	L: 208.74 M: 247.36 ^a H: 185.25 ^a <i>P</i> -sig: 0.000*	N: 211.47 I: 187.95 Y: 204.39 <i>P</i> -sig: 0.621	N: 207.21 I: 252.92 Y: 196.18 <i>P</i> -sig: 0.089
My work is overwhelming.	F: 200.53 M: 207.69 <i>P</i> -sig: 0.531	N: 204.26 Y: 205.24 <i>P</i> -sig: 0.941	L: 180.95 ^a M: 224.20 ^a H: 201.11 <i>P</i> -sig: 0.046*	N: 213.53 I: 206.23 Y: 197.06 <i>P</i> -sig: 0.374	N: 195.42 ^a I: 270.83 ^a Y: 210.68 <i>P</i> -sig: 0.007*
My child refuses treatment (even with the doctor's advice)	F: 217.97 M: 195.35 <i>P</i> -sig: 0.046*	N: 207.64 Y: 198.88 <i>P</i> -sig: 0.504	L: 187.72 M: 222.64 H: 201.80 <i>P</i> -sig: 0.110	N: 211.07 I: 226.41 Y: 198.82 <i>P</i> -sig: 0.388	N: 203.99 I: 233.17 Y: 203.34 <i>P</i> -sig: 0.471
I am happy with my child teeth (even if my child is not happy)	F: 205.72 M: 207.13 <i>P</i> -sig: 0.899	N: 207.12 Y: 204.56 <i>P</i> -sig: 0.842	L: 197.94 M: 224.90 H: 199.66 <i>P</i> -sig: 0.112	N: 208.35 I: 232.32 Y: 202.38 <i>P</i> -sig: 0.470	N: 206.24 I: 227.50 Y: 203.04 <i>P</i> -sig: 0.617

were 2.397 and 2.470 times more likely than high-income parents to consider their child's treatment request a motivator. This difference was highly significant (P value < 0.001). This suggests that while high-income parents may be self-motivated and self-perceived on the importance of improving their child's esthetics and initiate the decision themselves over their child's request, lower-income parents may be less self-perceived but motivated by their child's request and immediate happiness or societal fitting. Parental orthodontic history, self-satisfaction, and gender did not significantly affect this perception.

Dentist advice on orthodontic treatment varied by income and gender. Middle-income parents were 126.1% more likely than high-income parents to consider a dentist's advice. A strong reliance on professional advice may indicate a trust in expert opinions when personal knowledge or resources are limited.

Low- and middle-income parents may be more concerned about neglect accusations than high-income

parents due to socio-economic pressures. Low-income and middle-income parents were 63.1% and 43.2% more likely to have these concerns, respectively. A Polish study found that 64% of parents pressured their children to get orthodontic treatment to avoid neglect claims. However, their study did not show how these concerns vary by income.^[30] Middle-income parents worry 1.432 times more about dental bullying than high-income parents. This suggests different income groups' social experiences or perceptions. Other factors like parent gender and orthodontic history did not affect this perception.

The orthodontic treatments parents choose for their children were dependent on gender. A pattern emerged from the orthodontist's reputation and experience. Men valued the orthodontist's experience and reputation more than women. When choosing an orthodontist, men were 2.105 times more likely than women to value experience and reputation. In a study in Jeddah, Saudi Arabia, more than half of participants cited the orthodontist's reputation and experience as significant factors in their

Table 5: Ordinal regression analysis for the motivating factors. OR and 95% CI were only reported if $P < 0.05$

	Sex F: Female M: Male	Did you have braces before? N: No Y: Yes	Income level: L: Low M: Middle H: High	Are you satisfied with your dental alignment? N: No I: Indifferent Y: Yes	Are you considering having braces in the future? N: No I: Indifferent Y: Yes
I noticed my child has poor smile (I want them more beautiful).			OR (M:H) = 0.447 [0.323 to 0.619]		
The experience and reputation of the orthodontist.	OR (F:M) = 0.475 [0.344 to 0.655]	OR (Y:N) = 2.252 [1.466 to 3.463]	OR (M:H) = 3.891 [1.642 to 9.250]		OR (Y:N) = 1.631 [1.113 to 2.396]
My child is bullied because of the dental appearance.			OR (M:H) = 1.432 [1.095 to 1.874]		
My child has asked me for braces.			OR (L:H) = 2.397 [1.597 to 3.589]		
			OR (M:H) = 2.470 [1.809 to 3.376]		
I don't want my child to blame me for neglect in the future.	OR (F:M) = 1.361 [1.079 to 1.980]		OR (L:H) = 1.631 [1.089 to 2.440]		
			OR (M:H) = 1.432 [1.095 to 1.874]		
My dentist's advice.	OR (F:M) = 2.00 [1.402 to 2.849]	OR (Y:N) = 2.119 [1.342 to 3.344]	OR (M:H) = 2.261 [1.471 to 3.468]	OR (Y:N) = 3.039 [2.071 to 4.464]	

Table 6: Ordinal regression analysis for the barrier factors. OR and 95% CI were only reported if $P < 0.05$

	Sex F: Female M: Male	Did you have braces before? N: No Y: Yes	Income level: L: Low M: Middle H: High	Are you satisfied with your dental alignment? N: No I: Indifferent Y: Yes	Are you considering having braces in the future? N: No I: Indifferent Y: Yes
The cost of treatment.	OR (F:M) = 1.489 [1.116 to 1.987]	OR (Y:N) = 1.40 [1.004 to 1.973]	OR (M:H) = 2.511 [1.714 to 3.688]		OR (Y:N) = 0.58 [0.418 to 0.817]
The duration of treatment.		OR (Y:N) = 1.41 [1.069 to 1.862]		OR (Y:N) = 0.72 [0.561 to 0.940]	
The regular monthly visits.		OR (Y:N) = 3.60 [2.611 to 4.693]	OR (L:H) = 0.525 [0.375 to 0.738]		OR (Y:N) = 0.64 [0.484 to 0.848]
The busy work life.	OR (F:M) = 0.624 [0.498 to 0.782]	OR (Y:N) = 2.217 [1.679 to 2.919]	OR (L:H) = 0.256 [0.192 to 0.392]		OR (Y:N) = 1.336 [1.006 to 1.766]
			OR: (M:H) = 1.420 [1.081 to 1.868]		
My child refuses treatment (even with the doctor's advice)	OR (F:M) = 1.729 [1.377 to 2.169]		OR (L:H) = 0.465 [0.379 to 0.725]	OR (Y:N) = 0.668 [0.497 to 0.857]	OR (Y:N) = 0.711 [0.538 to 0.937]
I am happy with my child teeth (even if my child is not happy)			OR (M:H) = 1.699 [1.305 to 2.211]		OR (Y:N) = 0.693 [0.520 to 0.922]

desire for orthodontic treatment; however, there were no gender sub-group analysis details.^[23] A US national health survey found that males may value professional credentials more when choosing orthodontic options, viewing the decision as an investment that requires proven expertise.^[35]

In contrast, gender differences in dentist advice and negligence fear were the opposite. Women were twice as likely to use a dentist's advice as motivation. Literature

has shown mothers were more sensitive to long-term effects and blame.^[29,34] This difference may be due to societal pressures on motherhood and caregiving.

Parents with orthodontic experience were 2.252 and 2.119 times more likely to value orthodontist and dentist advice than those without, respectively. Their firsthand experience with the process and its benefits helped. Middle-income parents and those who are considering orthodontic treatment for themselves also consider the

orthodontist's reputation. Parents without orthodontic experience and female parents were less influenced by the orthodontist's reputation. Self-satisfaction and low income did not affect this decision. These findings supported a study that found parents' self-perception and orthodontic experiences could influence their decision to get braces for their children.^[36]

Treatment cost was the biggest decision-making barrier. Income affected cost perception as a barrier. Middle-income parents were 151% more likely than high-income parents to find it problematic. People who have had orthodontic treatment were 40% more likely to find the cost a barrier. Cost was the biggest barrier to orthodontic treatment in Saudi Arabia, accounting for 34.5%. The study also found a large monthly income difference, suggesting that lower-income people were more likely to see cost as an obstacle.^[21] However, those considering orthodontic treatment for themselves viewed the cost as 42% lower than those not considering it. Those satisfied with their dental alignment were 21% less likely to consider cost a barrier than those unhappy with their teeth appearance. In conclusion, income, orthodontic experience, future treatment, and dental appearance affected cost perception.

Also evident were gender differences. Mothers perceived treatment costs as 48.9% higher than fathers. Kazanci *et al.*^[37] found no gender or age-related differences in parents' orthodontic treatment concerns. However, they did not compare mothers' and fathers' perceptions, which limits the comparison to this study. Another gender-related barrier was the child's refusal to receive orthodontic treatment. Mothers were 72.9% more sensitive than fathers to their child's refusal. One qualitative study examined mothers' perceptions of their children's dental treatment refusal, which could apply to orthodontics. The child's temperament, behavior disorders, and development level affected mothers' perceptions.^[38] This may indicate a greater concern for their child's feelings or preferences or a preference for child happiness over medical advice. Fathers were more concerned about a busy work-life balance. They believe a busy work life is 60% more likely to deter orthodontic treatment for their children than mothers.

Orthodontic-treated parents were more concerned 3.6 and 2.21 times more likely than parents who never had orthodontic treatment to view the high frequency of orthodontic visits and their busy work schedule as barriers to decision-making. The cost and duration of treatment were 40% more likely to act as a barrier in their decision-making process. These findings support previous research that found parents with orthodontic histories were more aware of and more

likely to use their own experiences to anticipate their child's orthodontic issues, such as treatment length and costs, pain and discomfort, compliance, and dietary restrictions.^[37,39]

While the study might have identified significant associations, the cross-sectional design limits the ability to infer causality from these associations, in addition to the limitations arising from the self-administered questionnaire method. However, all measures were undertaken to minimize the response bias by the presence of the data collectors to assist the participants, and the questionnaire could not be submitted without answering all the questions. Additionally, the targeted participants were recruited from a particular geographic region within Saudi Arabia. Therefore, caution is advised in the interpretation and generalization of the results. Further studies with different methodologies such as qualitative studies and a larger scale or on different populations are needed to enhance the certainty of the findings of this study.

Conclusion

In conclusion, understanding socio-economic influences on parental decisions is vital for healthcare providers to offer inclusive care. Clinics should provide personalized consultations and appreciate the variations in parental backgrounds to enhance treatment accessibility for their children. Additionally, more research is needed on gender-specific concerns and bridging the gap between high- and low-income parental perspectives in orthodontic decisions.

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Ethical policy and Institutional Review board statement

Ethical approval was granted from the Research Ethics Committee, College of Dentistry, Taibah University (approval no. TUCDREC/20200316/MSMAIHarbi). All the procedures have been performed as per the ethical guidelines laid down by Declaration of Helsinki (2013).

Patient declaration of consent statement

All the procedures have been performed as per the ethical guidelines laid down by Declaration of Helsinki.

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Conflicts of interest

There are no conflicts of interest.

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