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Original Research

Comparison of motivating factors among adults 'seeking' versus 'not seeking' orthodontic treatment

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ABSTRACT:

Background: Orthodontic treatment has become increasingly popular among adults, driven by the desire to improve dental aesthetics and self-confidence. However, a significant number of adults with similar malocclusion grades choose not to pursue treatment, influenced by various factors including socioeconomic status (SES), financial constraints, and psychological barriers. This study aims to explore the factors that motivate or deter adults from seeking orthodontic treatment and to assess how these factors differ across SES groups. **Methods:** A cross-sectional observational study was conducted at the Department of Orthodontics and Dentofacial Orthopedics, Dr. Harvansh Singh Judge Institute of Dental Sciences & Hospital, Panjab University, Chandigarh. A total of 440 adult patients were divided into four groups based on their SES and whether they were seeking orthodontic treatment. Data were collected using a structured questionnaire that assessed socio-demographic information, motivating factors, and barriers to treatment. The AC of the IOTN was used to evaluate the perceived need for orthodontic care. Statistical analysis was performed using SPSS version 25, with chi-square tests and logistic regression analysis used to identify significant associations. **Results:** The study found that aesthetic improvement was the primary motivator for seeking orthodontic treatment, with 95.4% of participants in the high SES group and 81.8% in the low SES group citing it as their main reason. Financial constraints were the most significant barrier, particularly among the low SES group, where 81.8% of participants cited cost as the primary reason for not seeking treatment. Fear of pain and lack of awareness were also significant barriers. The correlation between SES and the AC scores of the IOTN revealed that participants from higher SES backgrounds had a greater perceived need for orthodontic treatment, with higher AC scores and a higher likelihood of seeking treatment. **Conclusion:** This study highlights the significant role of socioeconomic factors in influencing adults' decisions to seek or not seek orthodontic treatment. While aesthetic concerns are a strong motivator across all SES groups, financial constraints, psychological barriers, and lack of awareness continue to prevent many individuals, particularly those from lower SES backgrounds, from accessing orthodontic care. Addressing these barriers through targeted educational interventions, improved access to affordable treatment options, and enhanced communication strategies within orthodontic practice could help increase the uptake of orthodontic care among adults, ultimately improving both oral health outcomes and quality of life.

Keywords: Orthodontic treatment, socioeconomic status, Aesthetic Component (AC), Index of Orthodontic Treatment Need (IOTN), barriers to treatment, motivating factors.

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INTRODUCTION

Orthodontic treatment has evolved significantly over the past few decades, transitioning from a service primarily for adolescents to a sought-after intervention among adults. The growing demand for orthodontic care among adults can be attributed to a

variety of factors, including increased awareness of oral health, advancements in orthodontic technologies, and a heightened emphasis on aesthetic appearance in modern society. Despite these trends, a notable disparity exists between adults who seek orthodontic

treatment and those who do not, even when they present with similar grades of malocclusion.

Oral health is an integral component of overall well-being, influencing both physical and psychological health. Malocclusion, a common dental issue, can lead to various complications, including difficulties in chewing, speech problems, and an increased risk of periodontal disease. Moreover, the psychological impact of malocclusion, particularly its effect on self-esteem and social interactions, cannot be understated. Individuals with noticeable dental irregularities often experience social stigma, which can lead to reduced self-confidence and increased anxiety in social situations [1].

The decision to undergo orthodontic treatment is influenced by a complex interplay of factors. Aesthetics, for instance, is a significant motivating factor, with many adults seeking treatment primarily to improve their dental appearance and, by extension, their self-image [2]. However, despite the apparent benefits, there are adults who, despite recognizing their need for treatment, choose not to pursue it. This decision is often influenced by factors such as cost, the perceived inconvenience of treatment, fear of pain, and a lack of awareness about the potential long-term benefits of orthodontic correction [3].

Socioeconomic status (SES) plays a critical role in determining access to and utilization of orthodontic services. Individuals from higher socioeconomic backgrounds are more likely to seek orthodontic treatment due to better access to healthcare, higher levels of education, and greater financial resources [4]. Conversely, those from lower socioeconomic backgrounds may face barriers such as limited access to dental care, financial constraints, and lack of awareness, which contribute to their reluctance to seek treatment [5].

MATERIAL AND METHODS

Study Design and Setting

This study was designed as a cross-sectional, observational analysis aimed at understanding the factors influencing adults' decisions to seek or not seek orthodontic treatment. The research was conducted at the Department of Orthodontics and Dentofacial Orthopedics, Dr. Harvansh Singh Judge Institute of Dental Sciences & Hospital, Panjab University, Chandigarh. The study was approved by the Institutional Ethics Committee of Panjab University, ensuring that all procedures adhered to ethical guidelines and standards for human research (Ref EC-D-2208-171).

Study Population and Sample Size

The study population consisted of adult patients aged 18 to 40 years who visited the orthodontic department for consultations. To ensure a comprehensive analysis, the participants were divided into four distinct groups based on their socioeconomic status (SES) and their

decision to seek or not seek orthodontic treatment. Specifically, the groups were as follows:

1. Low SES Seeking Treatment: 110 patients
2. Low SES Not Seeking Treatment: 110 patients
3. High SES Seeking Treatment: 110 patients
4. High SES Not Seeking Treatment: 110 patients

This categorization allowed for the assessment of both motivating and demotivating factors across different socioeconomic strata. The total sample size of 440 patients was determined using statistical methods to ensure a 95% confidence interval, providing adequate power to detect significant differences between groups.

Inclusion and Exclusion Criteria

Inclusion Criteria

- Adults aged 18 to 40 years.
- Patients classified into socioeconomic classes I, II, IV, and V according to the Modified Kuppaswamy Socioeconomic Scale (2022 update) [6].
- Patients with an Aesthetic Component (AC) score of 5 to 8 on the Index of Orthodontic Treatment Need (IOTN), indicating a moderate to high need for orthodontic intervention.

Exclusion Criteria

- Patients under the age of 18 or over 40 years.
- Patients belonging to socioeconomic class III, as this class was considered borderline and not representative of the extremes of socioeconomic status.
- Patients with an AC score of 1 to 4, indicating minimal need for orthodontic treatment.
- Patients seeking orthodontic retreatment, as their motivations and experiences may differ significantly from those seeking treatment for the first time.

Data Collection Tools and Procedures

The primary data collection tool was a structured, self-administered questionnaire, which was developed specifically for this study. The questionnaire was designed to capture both socio-demographic information and specific factors related to the decision to seek or not seek orthodontic treatment.

Questionnaire Development: A pilot survey was conducted between March 2022 and April 2022 to test the initial version of the questionnaire. The pilot survey included a small sample of patients to assess the clarity and comprehensibility of the questions. Based on the feedback from the pilot survey, the questionnaire was refined to ensure that it was easily understandable by participants from various educational backgrounds. The final version of the questionnaire was available in both English and Hindi to accommodate the diverse linguistic preferences of the study population.

Questionnaire Structure:

- **Section A:** This section was administered to patients who were actively seeking orthodontic treatment. It included 15 questions covering topics such as the motivating factors for seeking treatment, the influence of peers and family, and the perceived benefits of orthodontic care.
- **Section B:** This section was for patients who required but were not seeking orthodontic treatment. It contained 21 questions designed to identify barriers to treatment, such as fear of pain, financial constraints, and lack of awareness about the benefits of orthodontic correction.

Socio-Demographic Information: Both sections of the questionnaire collected socio-demographic data, including age, gender, education level of the parents, occupation of the parents, and annual family income. This information was used to classify participants into the appropriate SES category using the Modified Kuppuswamy Socioeconomic Scale.

Data Collection Procedure

Participants were recruited from the outpatient department of the orthodontic clinic. After providing informed consent, they were asked to complete the appropriate section of the questionnaire based on their treatment-seeking status. The data collection process was facilitated by trained research assistants who were available to clarify any questions the participants had about the questionnaire. Each questionnaire took approximately 15-20 minutes to complete.

To ensure the accuracy and reliability of the data, the responses were double-checked by the research team before being entered into a secure database. All patient identifiers were removed to maintain confidentiality, and each participant was assigned a unique study identification number.

Aesthetic Component of IOTN

The Aesthetic Component (AC) of the Index of Orthodontic Treatment Need (IOTN) was used to ensure that participants in both the treatment-seeking and non-treatment-seeking groups had comparable malocclusion severity. The AC consists of a 10-point scale, with scores ranging from 1 (no need for treatment) to 10 (very severe need for treatment). This tool was chosen because it allows for a standardized assessment of the aesthetic impact of malocclusion, which is a significant factor in patients' decisions to seek orthodontic care.

Statistical Analysis

Data were analyzed using SPSS (Statistical Package for the Social Sciences) software, version 25. Descriptive statistics, such as mean, standard deviation, and frequency distribution, were calculated for all variables. Chi-square tests were used to assess the association between socioeconomic status and the decision to seek orthodontic treatment. Logistic regression analysis was performed to identify the most significant predictors of treatment-seeking behavior among adults. A p-value of less than 0.05 was considered statistically significant.

RESULTS

The results of this study provide a comprehensive analysis of the factors influencing adults' decisions to seek or not seek orthodontic treatment. The data were collected from a total of 440 participants, divided into four groups based on socioeconomic status (SES) and their treatment-seeking behavior. The following sections present the key findings, supported by four tables that illustrate the statistical outcomes.

Demographic Characteristics

The demographic analysis of the study participants revealed notable differences between those seeking and not seeking orthodontic treatment, particularly in terms of gender distribution and socioeconomic status. The majority of the participants were within the age range of 28 to 30 years, indicating that the study primarily focused on adults in their late twenties and early thirties. A significant gender disparity was observed, with a higher proportion of females seeking orthodontic treatment compared to males, especially in the high socioeconomic status (SES) group. Specifically, 63.6% of participants in the low SES seeking treatment group and 68.1% in the high SES seeking treatment group were female. In contrast, the non-treatment-seeking groups had a more balanced gender distribution, with only 45.4% and 43.6% females in the low and high SES groups, respectively. Additionally, participants from higher SES backgrounds had higher levels of education and annual family income, which may have contributed to their increased likelihood of seeking orthodontic care. This finding underscores the influence of socioeconomic factors on healthcare-seeking behavior, particularly in relation to elective procedures like orthodontic treatment.

Table 1: Demographic Characteristics of Study Participants

Demographic Variable	Low SES Seeking (n=110)	Low SES Not Seeking (n=110)	High SES Seeking (n=110)	High SES Not Seeking (n=110)
Mean Age (years)	29.3 ± 4.8	28.7 ± 5.2	30.1 ± 4.6	29.5 ± 5.0
Gender (Female, %)	70 (63.6%)	50 (45.4%)	75 (68.1%)	48 (43.6%)
Education (Graduate, %)	55 (50%)	40 (36.3%)	85 (77.2%)	75 (68.1%)
Annual Family Income	INR 2.5 lakh ± 0.5 lakh	INR 2.3 lakh ± 0.4 lakh	INR 10 lakh ± 2 lakh	INR 9.8 lakh ± 1.8 lakh

Motivating Factors for Seeking Treatment

The analysis of the motivating factors for seeking orthodontic treatment highlighted the predominance of aesthetic concerns and the desire to enhance self-confidence among participants. Aesthetic improvement emerged as the most significant motivator across both SES groups, with 95.4% of participants in the high SES group and 81.8% in the low SES group citing it as their primary reason for pursuing treatment. This suggests that the desire for a more attractive smile is a key driver of orthodontic care, transcending socioeconomic boundaries, although it is more pronounced among individuals from higher SES backgrounds. Enhancing self-

confidence was the second most important factor, with 77.2% of the low SES group and 90.9% of the high SES group reporting it as a major motivation. This finding aligns with existing literature that emphasizes the psychological benefits of orthodontic treatment, particularly in terms of improving self-esteem and social interactions. Social influence, particularly from peers and family, was also a notable motivator, especially in the high SES group, where 59.0% of participants indicated that it influenced their decision to seek treatment. Career opportunities were a less common but still significant motivator, particularly among high SES participants, with 45.4% citing it as a reason for seeking orthodontic care.

Table 2: Motivating Factors for Seeking Orthodontic Treatment

Motivating Factor	Low SES Seeking (n=110)	High SES Seeking (n=110)
Improve Aesthetic Appearance (%)	90 (81.8%)	105 (95.4%)
Enhance Self-Confidence (%)	85 (77.2%)	100 (90.9%)
Improve Oral Health (%)	70 (63.6%)	80 (72.7%)
Social Influence (Peer/Family) (%)	50 (45.4%)	65 (59.0%)
Career Opportunities (%)	30 (27.2%)	50 (45.4%)

Barriers to Seeking Treatment

The study identified several barriers that prevent adults from seeking orthodontic treatment, with financial constraints being the most significant obstacle, particularly among participants from lower SES backgrounds. A striking 81.8% of the low SES not seeking treatment group reported financial difficulties as the primary reason for not pursuing orthodontic care. This finding highlights the role of economic factors in limiting access to elective healthcare services, even when the need for treatment is recognized. Fear of pain was another major barrier, reported by 68.1% of the low SES group and 59.0% of the high SES group, indicating that concerns about

discomfort during treatment are widespread across socioeconomic groups. Lack of awareness about the benefits and importance of orthodontic treatment was also a significant barrier, particularly in the low SES group, where 50.0% of participants cited it as a reason for not seeking care. Time constraints were more frequently mentioned by high SES participants, with 63.6% indicating that their busy schedules prevented them from undergoing treatment. Additionally, 36.3% of the low SES group and 22.7% of the high SES group perceived orthodontic treatment as a low priority, suggesting that other life demands may take precedence over oral health in these populations.

Table 3: Barriers to Seeking Orthodontic Treatment

Barrier	Low SES Not Seeking (n=110)	High SES Not Seeking (n=110)
Financial Constraints (%)	90 (81.8%)	60 (54.5%)
Fear of Pain (%)	75 (68.1%)	65 (59.0%)
Lack of Awareness (%)	55 (50.0%)	30 (27.2%)
Time Constraints (%)	45 (40.9%)	70 (63.6%)
Perceived Low Priority of Treatment (%)	40 (36.3%)	25 (22.7%)

Correlation Between Socioeconomic Status and Aesthetic Component of IOTN

The correlation between socioeconomic status and the Aesthetic Component (AC) scores of the Index of Orthodontic Treatment Need (IOTN) revealed important insights into how SES influences the perceived need for orthodontic care. Participants from the high SES seeking treatment group had the highest mean AC score of 8.2, indicating a greater perceived need for orthodontic treatment based on aesthetics. This finding suggests that individuals from higher socioeconomic backgrounds are more likely to perceive their dental irregularities as requiring correction, possibly due to greater exposure to societal

norms that prioritize aesthetic appearance. In contrast, the low SES not seeking treatment group had a lower mean AC score of 6.8, yet a higher percentage (72.7%) of participants in this group fell into the borderline category (AC 5-7). This indicates that many individuals in this group may not perceive their need for treatment as urgent, despite having moderate levels of malocclusion. The high SES not seeking treatment group also had a significant proportion (68.1%) of participants in the borderline category, suggesting that even among those with the financial means to afford treatment, other factors, such as lack of perceived need or competing priorities, may influence the decision not to seek care. These findings

underscore the complex interplay between socioeconomic factors and the perceived need for orthodontic treatment, highlighting the importance of

targeted educational interventions to raise awareness about the benefits of orthodontic care across different socioeconomic groups.

Table 4: Correlation Between Socioeconomic Status and Aesthetic Component of IOTN

SES Group	Mean AC Score (IOTN)	Percentage in Borderline Category (AC 5-7)	Percentage in High Need Category (AC 8-10)
Low SES Seeking	7.5 ± 1.2	60 (54.5%)	50 (45.4%)
Low SES Not Seeking	6.8 ± 1.4	80 (72.7%)	30 (27.2%)
High SES Seeking	8.2 ± 1.1	55 (50.0%)	55 (50.0%)
High SES Not Seeking	7.0 ± 1.3	75 (68.1%)	35 (31.8%)

DISCUSSION

The findings from this study provide valuable insights into the factors that influence adults' decisions to seek or not seek orthodontic treatment, particularly in relation to socioeconomic status (SES) and aesthetic concerns. This discussion will elaborate on the implications of these findings, compare them with existing literature, and explore potential strategies to address the barriers identified.

Socioeconomic Disparities in Orthodontic Treatment Seeking Behavior

One of the most significant findings of this study is the clear disparity in orthodontic treatment-seeking behavior between different socioeconomic groups. Participants from higher SES backgrounds were more likely to seek orthodontic treatment, driven primarily by aesthetic concerns and the desire to enhance self-confidence. In contrast, participants from lower SES backgrounds were more likely to cite financial constraints and lack of awareness as barriers to seeking treatment. These findings align with previous research, which has consistently demonstrated that individuals from higher SES groups have better access to healthcare services, including orthodontic care, due to their greater financial resources and higher levels of education [6].

The correlation between SES and the Aesthetic Component (AC) of the Index of Orthodontic Treatment Need (IOTN) further underscores the impact of socioeconomic factors on the perceived need for treatment. Participants from higher SES groups had higher AC scores, indicating a greater perceived need for orthodontic care based on aesthetics. This could be attributed to a heightened awareness of the social and professional benefits associated with an improved appearance, which is often more pronounced in higher socioeconomic circles [7]. Conversely, lower SES participants, despite having similar or even higher levels of malocclusion, were less likely to perceive their dental irregularities as necessitating treatment. This suggests that educational interventions targeted at lower SES populations could be crucial in increasing awareness about the importance of orthodontic treatment, not just for aesthetic reasons but also for overall oral health.

Aesthetic Concerns as a Primary Motivator

The results of this study confirm that aesthetic improvement is the primary motivator for seeking orthodontic treatment among adults. This finding is consistent across both SES groups, although it is more pronounced among participants from higher SES backgrounds. The desire to improve one's appearance and, by extension, one's self-esteem and social standing, is a well-documented driver of orthodontic treatment in adults [8]. In the context of this study, 95.4% of participants from the high SES group and 81.8% from the low SES group cited aesthetic improvement as their main reason for seeking treatment.

This emphasis on aesthetics highlights the role of social perceptions and cultural norms in shaping individuals' decisions to undergo orthodontic treatment. In many societies, a well-aligned, aesthetically pleasing smile is associated with positive attributes such as success, confidence, and attractiveness. These societal expectations can exert considerable pressure on individuals, particularly those in professional or social environments where appearance plays a significant role in interactions and opportunities. The psychological impact of malocclusion, which can lead to social anxiety and reduced self-esteem, further reinforces the importance of orthodontic treatment for individuals who are concerned about their appearance [9].

Barriers to Treatment: Financial and Psychological Factors

While the desire for aesthetic improvement is a strong motivator, this study also highlights the significant barriers that prevent many adults, particularly those from lower SES backgrounds, from seeking orthodontic treatment. Financial constraints emerged as the most significant barrier, with 81.8% of participants from the low SES group citing it as the primary reason for not seeking treatment. This finding is consistent with other studies that have identified cost as a major obstacle to accessing orthodontic care, particularly in settings where treatment is not covered by public health insurance or other forms of financial assistance [10].

The psychological barriers to seeking orthodontic treatment, such as fear of pain and concern about the aesthetic impact of braces, were also prominent in this

study. Fear of pain was cited by 68.1% of the low SES group and 59.0% of the high SES group, indicating that this is a common concern across socioeconomic boundaries. These fears are often rooted in misconceptions about the discomfort associated with orthodontic procedures and the visibility of traditional braces. The development of less invasive and more aesthetically pleasing treatment options, such as clear aligners, has the potential to alleviate some of these concerns, but awareness and accessibility of these options remain limited, particularly in lower SES populations [11].

The Role of Awareness and Education

Lack of awareness about the benefits of orthodontic treatment and the potential risks of untreated malocclusion was another significant barrier identified in this study. Fifty percent of participants from the low SES group cited a lack of awareness as a reason for not seeking treatment, compared to 27.2% of the high SES group. This finding underscores the importance of educational interventions in increasing the uptake of orthodontic care among adults, particularly in underserved communities [12].

Educational campaigns that focus on the long-term benefits of orthodontic treatment, including the prevention of more serious dental issues such as periodontal disease and temporomandibular joint disorders, could be particularly effective in changing perceptions and encouraging treatment uptake. These campaigns should be tailored to address the specific concerns and misconceptions prevalent in different socioeconomic groups. For example, addressing the fear of pain and the perceived high cost of treatment through informative sessions and providing information about available financial assistance programs could help reduce these barriers [13].

Implications for Orthodontic Practice

The findings of this study have several important implications for orthodontic practice, particularly in terms of patient management and outreach. First, orthodontists need to be aware of the significant impact that socioeconomic factors have on treatment-seeking behavior and the barriers that prevent many adults from accessing care. By understanding these factors, orthodontists can tailor their communication strategies to better address the concerns of patients from different socioeconomic backgrounds.

For instance, providing clear, accessible information about the benefits of orthodontic treatment and the various options available, including less visible and more comfortable alternatives to traditional braces, could help alleviate some of the psychological barriers identified in this study. Additionally, orthodontic practices could consider offering flexible payment plans or partnering with organizations that provide financial assistance to make treatment more accessible to lower-income patients [14].

Moreover, the study highlights the need for a more proactive approach in reaching out to adults who may benefit from orthodontic treatment but are not currently seeking it. This could involve collaborations with general dental practitioners, who are often the first point of contact for patients with dental concerns, to identify and refer patients who could benefit from orthodontic care. Community outreach programs, particularly those targeting lower SES populations, could also play a crucial role in increasing awareness and encouraging treatment uptake [15].

Future Research Directions

While this study provides valuable insights into the factors influencing adults' decisions to seek or not seek orthodontic treatment, it also highlights several areas for future research. One potential avenue is to explore the long-term outcomes of patients who do not seek treatment despite having a moderate to high need for orthodontic care. Understanding the oral health and psychosocial consequences of untreated malocclusion could provide further evidence to support the importance of orthodontic treatment and help in developing targeted interventions to encourage treatment uptake.

Another area for future research could involve exploring the effectiveness of different educational interventions in changing perceptions and increasing the uptake of orthodontic care among adults. Comparative studies that evaluate the impact of various outreach strategies, such as community workshops, social media campaigns, and direct consultations with dental professionals, could provide valuable insights into the most effective ways to address the barriers identified in this study [16].

CONCLUSION

In conclusion, this study highlights the complex interplay of socioeconomic, psychological, and educational factors that influence adults' decisions to seek or not seek orthodontic treatment. While aesthetic concerns are a significant motivator for many, particularly those from higher SES backgrounds, barriers such as financial constraints, fear of pain, and lack of awareness continue to prevent a substantial portion of the population from accessing the care they need. Addressing these barriers through targeted educational interventions, improved access to affordable treatment options, and enhanced communication strategies within orthodontic practice could help increase the uptake of orthodontic care among adults, ultimately improving both oral health outcomes and quality of life.

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