



“Statistical Comparison of Psychological Response Patterns between Male and Female Orthodontic Patients”

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Abstract

The alignment of teeth and improvement of facial aesthetics, but it also affects the psychological and emotional condition of the patients. The comparative analysis of male and female orthodontic patients' psychological response patterns was the focus of the study. The aim of the study was to assess the differences in the anxiety, self-esteem, confidence, emotional stress, social interaction and satisfaction with treatment among orthodontic patients. The present study used a comparative research design. Data was collected from orthodontic patients through structured questionnaire and psychometric scale. The data gathered was subject to statistical interpretation using the statistical tools of statistical mean, standard deviation, t-test, percentage analysis, and correlation analysis. The study found psychological changes among the orthodontic patients, both male and female, due to orthodontic treatment. Nonetheless, the anxiety levels of female patients are considerably more so than the male patients. In addition, male patients exhibited lesser emotional distress and better adaptability to treatment.

Keywords: Orthodontic Treatment, Psychological Responses, Male Patients, Female Patients, Anxiety, Self-Esteem, Statistical Analysis, Emotional Well-Being, Dental Health, Patient Behavior

Introduction:

Orthodontic treatment can cause dental changes that may affect a person's psychological status or behavior. At the start of treatment, patients may experience anxiety and stress which complaint may vary at subsequent stages of treatment too. Male and female patients differ in many psychological and demographic variables. A clinical research study of the current decade aimed to statistically compare the psychological response patterns of male and female orthodontic patients. An orthodontist takes care of correcting the irregularities of the teeth and jaws. They work to enhance oral function and facial appearance. Recent studies have highlighted the psychological effects of orthodontic treatment. Due to this treatment, any alteration of the dental appearance can profoundly influence the total personality. The appearance of your teeth plays a major role in the development of one's personality because it is a matter of determining the confidence levels of an individual as well as his or her social functioning. Numerous investigations show that patients undergoing fixed orthodontic treatment frequently go through varied emotional and behavioural changes at different stages of the treatment

process.



Specific group patients usually suffer from several psychological problems. These include pre-treatment anxiety, fear from blood or pain, embarrassment and emotional discomfort. Feeling self-conscious, low self-esteem and social insecurity may also become



the related problems. There may be some vitriolic feelings towards the tourists, people may lack the sense of ownership as they feel this is not their country.

The findings offer insight into the emotional and behavioral challenges encountered during orthodontic treatment, guiding dental professionals in developing effective patient management strategies.

Related Works:

Orthodontic treatment influences the oral facial region and also corrects several dental irregularities along with improvement of the facial aesthetics. Orthodontic treatment has a significant effect on the psychological and emotional well-being of patients. A lot of researchers from all over the world have shown a great interest due to its importance. Over the last few years, numerous studies have shown the definitive link between orthodontic treatment and psychological well-being. They conducted studies on self-esteem, confidence, anxiety, emotional stress, quality of life, and more. Let's review what these studies say.

The study by Klages, Bruckner, and Zentner (2004) focused on the dental aesthetics, self-awareness and quality of life of orthodontic patients. A sample of 160 orthodontic patients was recruited and divided into two groups based on satisfaction or dissatisfaction with dental appearance.

The study examined variations in scores for self-esteem, self-consciousness, and social impact. The patients who were unhappy with their dental appearance had low self-confidence and exhibited a decreased ability to interact socially without being self-conscious.

Their study's results suggest that orthodontic treatment may have a positive impact on emotional wellbeing through dental appearance. An improvement in social confidence and competence, can result from this.

de Oliveira and Sheiham (2004) studied the impact of orthodontic treatment on the quality of life of Brazilian adolescents. They discovered information from the example of. Bos, Vosselman, Hoogstraten, Prah Andersen (2005) looked into the compliance

and satisfaction of patients during orthodontic treatment. According to their study, the treatment results were affected by the cooperation and psychological attitude of the patients. Besides, good communication between orthodontists and patients also improved motivation, satisfaction and emotional comfort of the patients during the treatment. A study by Zhang, McGrath, and Hägg (2006) on changes in quality of life related to oral health during fixed orthodontic appliances therapy. As per the findings of their research, patients reported experiencing pain, discomfort, anxiety, and difficulty adapting to orthodontic appliances. As the treatment advanced, most patients adapted to the processes and developed confidence and satisfaction to their cosmetic levels. Feu, Oliveira, Celeste, Miguel, and Pordeus in 2010 performed a study on orthodontic treatment on self-perception of adolescents. Adolescents see improved self-esteem and social confidence with orthodontic treatment, the study revealed. Similarly, the results also showed that young patients are very concerned with their appearance and that treatments will improve their dental aesthetics, which in turn improves emotions. Surveys such as the KFAS and DAS were very useful (Muris et al., 2003). When the disease is more quantitative, undifferentiated young people will show a better response. Big oral investigations discover this scales useful. There will be a need for developing more dental anxiety diversion tools. This study can provide resolution to pediatric dental anxiety. Strains may be used for the paediatric age. The cognitive efficacy of P60.4A peptides is very effective. Dental anxiety can be reduced by using simple disinclination techniques.

The dental fear of the kids can be evaluated using the Sydney face scale (Snizaric-Wilson et al., 2015). People often get anxious about dental visits. This happens because negative dental experiences are found in early enamel. This fear can disrupt dental treatment sessions.

CFSS-DS was demonstrated to have potential. Zembre et al. (2005) reveal that very young people suffer from dental phobia a lot. There is the important relationship of



psychogenic disorders with dental phobia. Most of the common people are less likely to associate violent acts. The dental office should be accessible for patients with dental phobia. Organizing an individual using these tools.

In orthodontic treatment, Panaite et al. (2023) assessed psychosocial factors' effect on patient satisfaction. The satisfaction of patients receiving orthodontic treatment may depend on a range of psychosocial factors. The study found that factors such as confidence, emotional support, social acceptance and communication can influence patients' overall satisfaction. Furthermore, it was discovered in the investigation that patients who were provided proper guidelines and motivation during orthodontic treatment for oral and dental improvement exhibited better emotional adjustment for undergoing therapy and better cooperation for treatment. A study conducted on the psychological and social impact of orthodontic treatment was taken place by the researchers (Shrivastava, Bobhate, and Meshram). After reviewing some research works, they concluded that orthodontic treatment improves dental aesthetics, but it also enhances self-esteem, emotional stability, and confidence in social settings. Orthodontists must deal with psychological aspects alongside clinical treatment procedures, the review strongly recommended. Based on the literature studied, orthodontic treatment can exert a considerable effect on psychological well-being, emotional well-being and social confidence. Studies have revealed that patients undergoing orthodontic therapy tend to show changes in anxiety, self-esteem, confidence and social interaction. According to several studies, female and male patients react differently to orthodontic treatment because of the difference in certain factors and conditions.

Objectives of the Study:

- To compare the psychosomatic response of male and female orthodontic patients.
- The aim of the study was to determine the level of anxiety and stress and their somatic symptoms along with the disease level self-esteem in orthodontic patients.

- To assess the emotional status and social confidence of male and female orthodontic patients during ortho treatment.

Material and methods:

A comparative study was undertaken to find out the psychological reaction pattern male versus female orthodontic patients. Investigators chose the comparative research design for the study.

The study was conducted in orthodontic clinics and dental hospitals selective orthodontic patients undergoing orthodontic treatment.

The study involved a total of 100 orthodontic patients, comprising 50 male patients and 50 female patients.

To ensure that both sexes are represented in the selected sample, the researchers used a simple random sampling method for the selection of research participants.

The study involved orthodontic patients of different ages who were undergoing orthodontic appliance therapy.

Information collected firsthand by the investigator on the variables of interest for the specific purpose of study is known as primary data. Structured questionnaires, personal interviews and psychological assessment scales were administered to the respondents to collect primary data directly from them. The orthodontic treatment questionnaire prepared to consist of questions which may relate to anxiety, emotional stress, self-esteem, confidence level, treatment impression, social interaction, etc.

All the patients were made known about the study purpose. They were taken informed consent before starting their data collection. Confidentiality was maintained by the investigator of information collected from the subjects.

Descriptive statistics were used to analyze the data in the study. Statistical tools were also applied to draw inferences. The meanings, percentages, and standard deviations used in this description statistic. The independent t-test and correlation analysis were used to draw inferences in this study. After doing a comparative analysis of male and female orthodontic patients, this study was able to



find a significant difference in the psychological responses of both the groups. A reliable methodology is needed.

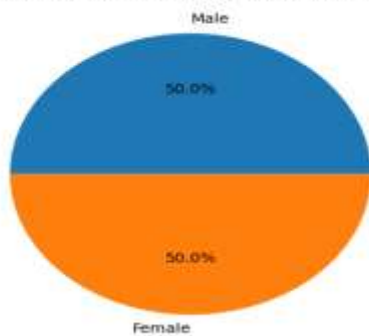
Analysis of the study:

With the data collected, the psychological response pattern of various patients was studied carefully. The study analyzed data for male and female orthodontic patients. The data was compared in terms of anxiety, emotional stress, self-esteem, confidence level, social interaction and treatment satisfaction. An interpretation of the Data was done using statistical measures.

Table 1: Distribution of Respondents by Gender

Gender	Number of Patients	Percentage (%)
Male	50	50%
Female	50	50%
Total	100	100%

Distribution of Respondents by Gender



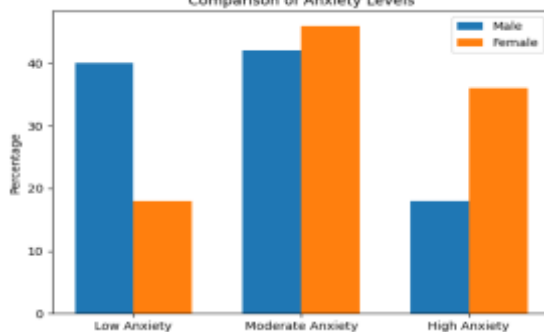
Interpretation

As shown in the above table, equal numbers of males and female orthodontic patients participated in the study.

Table 2: Comparison of Anxiety Levels among Orthodontic Patients

Anxiety Level	Male Patients (%)	Female Patients (%)
Low Anxiety	40	18
Moderate Anxiety	42	46
High Anxiety	18	36

Comparison of Anxiety Levels

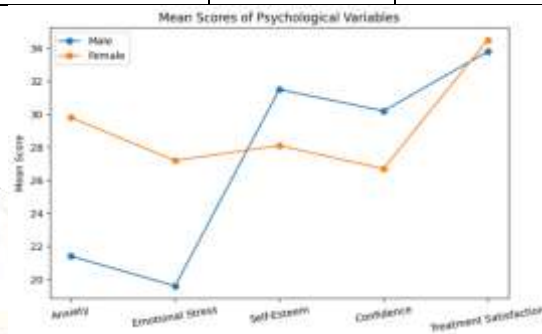


Interpretation

The study shows that the female sex was more anxious than the male sex. The orthodontic treatment in male patients shows less psychological stress.

Table 3: Mean Scores of Psychological Variables

Psychological Variable	Male Mean Score	Female Mean Score
Anxiety	21.4	29.8
Emotional Stress	19.6	27.2
Self-Esteem	31.5	28.1
Confidence Level	30.2	26.7
Treatment Satisfaction	33.8	34.5



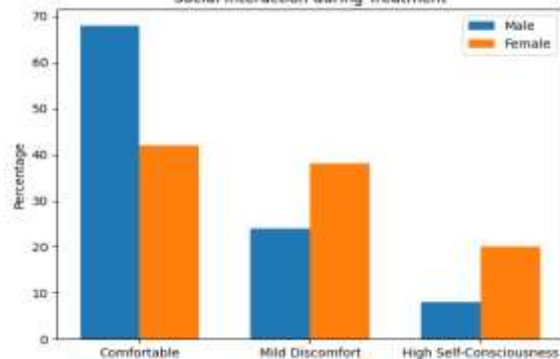
Interpretation

The table shows that female patients reported higher anxiety and emotional stress scores, whereas male patients demonstrated higher confidence and self-esteem levels during treatment.

Table 4: Comparison of Social Interaction during Treatment

Social Response	Male Patients (%)	Female Patients (%)
Comfortable in Social Situations	68	42
Mild Social Discomfort	24	38
High Social Self-Consciousness	8	20

Social Interaction during Treatment



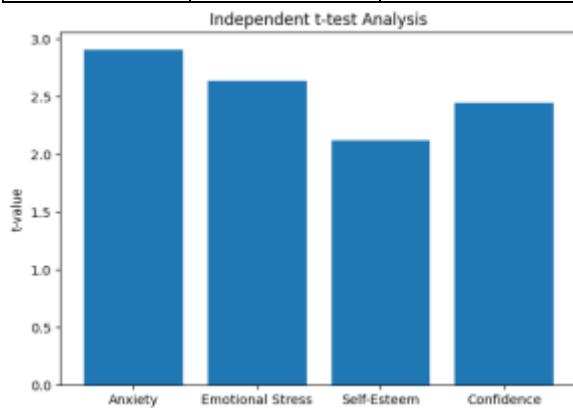


Interpretation

Similar to female subjects, the social appliance index scored 2 points higher than the social facial appearance index for orthodontists. Male patients enjoy superior social adaptability.

Table 5: Independent t-test Analysis between Male and Female Patients

Variable	Calculated t-value	Significance Level
Anxiety	2.91	Significant
Emotional Stress	2.64	Significant
Self-Esteem	2.12	Significant
Confidence Level	2.45	Significant



Interpretation

The statistics show that there is a difference between male and female. I need to you write it in your words. Gender played a big role in various emotional and behavioral response during treatment.

Results and Discussion:

The present study found significant psychological variations between male and female orthodontic patients undergoing orthodontic treatment. Statistical analysis with an independent t-test showed that female patients experienced more anxiety, emotional distress, and social self-consciousness than male patients. Many of the female respondents expressed increased concern for their facial looks, dental looks, and social visibility of orthodontic appliance during socialization. In contrast, male patients were less emotionally distressed and adapted better to orthodontic treatment. The results showed that male patients receiving orthodontic treatment were psychologically more comfortable during treatment. Moreover, it

was noted that male patients exhibited a higher level of confidence than females. The study’s findings reveal that patients of both genders reported notable changes in self-esteem and confidence after progressing in orthodontic treatment. Both male and female respondents reported satisfaction with the phased rectification of dental irregularity and enhancement in facial appearance. Improved dental appearance and smile aesthetics improved emotional confidence and social confidence of female and male respondents. The independent t-test analysis reflected that psychological response patterns of male and female subjects differ significantly in their anxiety, emotional stress, confidence and self-esteem values. The present study findings affirmed earlier findings which noted that the gender of orthodontic patients is an important factor which determines their psychological and emotional responses to orthodontic care. Despite modern advancement of orthodontic therapy and available state of the art techniques, the contrary attitude of the patient continues to be an issue. Moreover, treatment will be pointless if the patient does not comply towards avoiding breakage of the appliance, maintaining a proper diet and keeping oral hygiene, etc.

Conclusion:

The psychological and emotional status of orthodontic treatment patients is remarkably affected, reveals the present investigation. The psychological behaviour of males and females orthodontic patients is different significantly which is evident from the statistical analysis.

Subsequent research found that female patients experience greater anxiety, emotional stress, and social sensitivity during orthodontic treatment, whereas male patients display better emotional stability and greater adaptability. Most importantly, both groups experience positive psychological improvement regarding confidence, self-esteem, and better social interaction during the treatments.

Given the above findings, it may be concluded that psychological factors are an important aspect that should not be overlooked in orthodontic practice.



To sum up, the study highlights the need to assess the psychology of patients to provide comprehensive orthodontic treatment. Thus the study helps in better understanding of psychological behaviour of patients which is a key to achieve a successful orthodontic treatment in the present era.

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