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Navigating the psychological perspectives in adult orthodontics and orthognathic surgery: A narrative review

Dr. Manali Singh Ranawat, Dr. Nidhin Philip Jose, Dr. Rainee Solanki

Post graduate student (Final year), Department of Orthodontics & Dentofacial Orthopaedics, Manipal College Of Dental Science, Mangalore, Mahe Email: manali.ranawat@learner.manipal.edu, Contact number- 8454067918
ORCID: 0009-0003-5174-1140
Associate Professor, Department of Orthodontics & Dentofacial Orthopaedics, Manipal College Of Dental Science, Mangalore, Mahe.
Email: Nidhin.philip@manipal.edu, Contact number- 9945010493
Post graduate student (Second year), Department of Orthodontics & Dentofacial Orthopaedics, Manipal College Of Dental Science, Mangalore, Mahe. Email: raineesolanki1711@gmail.com

ABSTRACT

In recent years, there has been a notable surge in the number of adult patients seeking orthodontic treatment, many of whom struggle with lowered self-esteem and social anxiety.

Improvements in function and facial aesthetics can lead to enhanced self-image and better social relationships. Regarding this, an extensive literature has evolved in this area, offering deeper insights and advancing knowledge.

The role of the orthodontist is vital not only in correcting functional deficiencies and improving facial appearance but also in understanding the psychological and social factors at play in adult patients. Orthodontists play a key role in managing patients' expectations and guiding them through the emotional and psychological challenges that may arise during treatment, while also recognizing that orthodontic care alone may not fully resolve deeper self-image issues.

This narrative review provides an in depth understanding on the psychological factors that affect adult orthodontic patients.

INTRODUCTION

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This narrative review provides an in depth understanding on the psychological factors that affect adult orthodontic patients.

1. Psychological Motivations for Seeking Orthodontic Treatment in Adults

In general, the desire to enhance appearance, self-worth, and social acceptance motivates many individuals to seek orthodontic treatment. Adults usually seek orthodontic treatment driven from internal motivation, as

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compared to younger patients who may do so as a result of external pressure from family, school, or society. The following categories can be used to group the main motivations:

1.1. Self-Image and Aesthetic Concerns

In order to improve their appearance and increase their self-confidence, adults frequently seek orthodontic treatment. Nearly half of the patients reported experiencing teasing or negative remarks about their dental appearance. While a history of teasing has not been widely reported as influencing adult decisions to pursue orthodontic treatment, it has been noted in adolescence. Regardless of whether a patient undergoes orthodontic or orthognathic treatment, it is believed that addressing the concerns of individuals who have faced teasing about their appearance can significantly improve their psychosocial well-being.[1,2] Studies show that considerable increases in self-reported confidence and social interactions can result from changes in oral aesthetics[3].

1.2. Social and Professional Perception

Many adults' motivation for receiving orthodontic treatment is also impacted by their perception of their own appearance. In a qualitative study conducted by Imani et al., it was found that orthodontic choices among participants aged 14 to 27 were influenced by various factors, including distorted self-image, the aspiration to improve attractiveness, family perspectives on the issue, social dynamics, and financial constraints[4].

Adults may think that having a better smile will improve their professional image, or social relationships. This is especially true in fields like media, sales, and public-facing professions where appearance is subject to scrutiny.[5]

1.3. Health-Related Motivations

Adults often seek orthodontic treatment for deteriorating functional reasons, such as addressing bite issues, decreasing dental wear, and Temporomandibular disorders (TMD'S), even though aesthetics are frequently the main objective. A person's decision to seek therapy may be influenced by functional improvements, which can have a substantial impact on general health. At same time adult patients are at a higher risk of developing temporomandibular disorders which may or may not be related to orthodontic treatment, some adults may seek orthodontic care due to TMD symptoms. Therefore, a comprehensive examination is essential to identify any signs of TMD in adult patients, while also explaining that the disorder may not necessarily be linked to their orthodontic treatment. (TMD).[6,7]

PSYCHOLOGICAL IMPACT OF ORTHODONTIC TREATMENT

For adults, orthodontic treatment can be a life-altering event, but it also presents a number of psychological difficulties. Emotional effects may result from the lengthy course of treatment, discomfort, and aesthetic changes that take place. In order to comprehend the experiences of adult patients, the following psychological factors are very pertinent:

2.1. Body Image and Self-Esteem

Changes in body image may occur in adults receiving orthodontic treatment. Some people may feel self-conscious during the early phases of treatment, which sometimes involve wearing visible tools like braces or aligners. Nonetheless, self-esteem frequently increases as the course of treatment advances and improvements are observed. This emphasizes how crucial it is to take psychological difficulties into account during the treatment's transitional periods, particularly for patients who already struggle with low self-esteem or body image issues.[8]

Given that perceptions of facial appearance can influence an individual's health, social behaviour, and overall happiness, it is reasonable to conclude that those with well-aligned smiles are often viewed as more intelligent and have a higher likelihood of securing employment.[9,10]

2.2. Treatment Fatigue and Motivation

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Tooth movement in adults is typically slower than in adolescents, due to a lower initial inflammatory response and higher cytokine and osteoclast activity[11]. Orthodontic treatments are known for their lengthy duration, with fixed appliance treatments averaging around 24.9 months. This may result in "treatment fatigue," where the initial enthusiasm wanes and compliance with treatment regimens (such wearing rubber bands or aligners) varies. Prolonged treatment can be burdensome and may lead to potential adverse effects, the ability to accurately predict treatment length and communicate this to patients in advance is a key skill for orthodontists, serving the interests of both practitioners and patients.[12,13]

2.3. Perceived Stigma and Social Anxiety

Adult patients have shown strong preferences regarding the type of orthodontic appliances they wear, with headgear being viewed most negatively. Embarrassment and negative reactions from peers have been identified as discouraging factors. For young adults, how others perceive them during orthodontic treatment is especially important in key life events, such as job opportunities and relationships.[14]

The introduction of more discreet orthodontic options, such as clear aligners and alternatives to traditional metal braces, has encouraged many adults to pursue orthodontic treatment. While clear aligners are the most popular choice, ceramic and lingual braces are also well-received by adult patients. These appliances tend to be more effective for adults, as they are generally more diligent and attentive to their orthodontist's recommendations regarding bracket care and oral hygiene.[15]

As a result, appliances that are viewed more positively in social settings are seen as more suitable for social acceptance.

THE ROLE OF ORTHODONTISTS IN ADDRESSING PSYCHOLOGICAL CONCERNS

As an integral part of a multidisciplinary team, orthodontists are well positioned to provide their adult patients with psychological support in addition to clinical care. Including psychological considerations in treatment planning can improve patient compliance and satisfaction. A number of methods can be taken into consideration:

3.1. Patient Education and Communication

Patient education on the course of orthodontic treatment cannot be overemphasized but it's equally important for practitioners to prepare patients for the potential initial discomfort associated with banding. Informing patients in advance about this discomfort, along with providing insights from the experiences of others who have undergone orthodontic treatment, can not only manage expectations but also strengthen the patient-doctor relationship. This proactive approach contributes to a more comprehensive and patient-centred orthodontic experience, especially for adults[16,17].

Various research has investigated ways to make patients feel less anxious while receiving orthodontic treatment. Some of these strategies include giving patients more written information[18], employing relaxation techniques[19], putting systematic follow-up calls into place, [20]

3.2. Psychological Screening

It is important to screen patients for issues related to physical appearance, which are often linked to social anxiety. Individuals who view themselves as unattractive typically experience higher levels of social anxiety. This can lead to challenges in social interactions, resulting in decreased self-esteem and a propensity for introversion and social withdrawal. Moreover, in orthodontic practise, individuals seeking treatment may be driven by social anxiety, potentially leading to dissatisfaction and negative psychological outcomes, as orthodontic treatments alone may not address underlying psychological concerns[19].

PSYCHOLOGICAL IMPACT OF ORTHOGNATHIC SURGERY

The purpose of orthognathic surgery is to address moderate to severe skeletal and dental abnormalities that

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impact the physical appearance, occlusion and functional ability. The psychological advantages, in especially the improvements in one's self-perception, are less evident right away. Studies show that following surgery, one's self-concept dramatically improves, and these improvements can last for up to two years. Positive results, including improved face self-perception, elevated self-esteem, increased confidence, and less self-consciousness, are often reported by patients[21,22]. At six months and a year after surgery, Finlay et al. also noted a general increase in self-esteem.[23]

4.1 Psychological Motivations for Seeking Orthognathic Surgery

Orthognathic surgery is usually sought after by patients for both functional and cosmetic reasons. Deep psychological worries about beauty, social approval, and quality of life are frequently connected to these motivations.

Aesthetic and Body Image Concerns

Self-perception and awareness of aesthetic issues are key motivators for patients seeking treatment, particularly with invasive procedures like orthognathic surgery. Patients may not initially recognize their need for correction, so orthodontists and oral surgeons play a vital role in raising awareness of these issues. For Class III patients, concerns about facial disharmony are often prominent, as these individuals tend to be more aware of their appearance and the social perceptions associated with it. Class II patients, in contrast, may not perceive an urgent need for aesthetic correction because they can often compensate functionally by bringing their mandible forward. Another reason in Class I division II patient seeking orthognathic surgery is excessive overjet[24]. According to Machado et al., the maxillary central incisors are the focus of the aesthetic zone and serve as crucial for smile aesthetics[25].

Ultimately, unsatisfactory self-image and concerns over facial profile, particularly in Class III patients, are major drivers for pursuing surgical correction.

Functional Concerns

Functional issues often arise in both Class II and Class III patients, though they are more pronounced in Class III cases. Class III patients may experience functional difficulties such as anterior crossbite and excessive wear on their teeth in edge-to-edge incisor relationship, which are commonly associated with a more severe malocclusion. These functional concerns often motivate patients to seek surgical treatment[26]. In contrast, many Class II patients can function adequately despite their malocclusion. They can often chew properly with posterior teeth and compensate with anterior dentition by positioning their mandible forward. However, in cases of gingival impingement from traumatic overbite, anterior open bite or excessive wear and chipping of teeth in class II div II, serve as key motivators to pursue surgery, especially if functional impairment becomes noticeable or painful[27].

Psychological Readiness for Surgery

Psychological readiness is a critical factor in determining whether patients opt for orthognathic surgery. While dental specialists may recommend surgery based on functional or aesthetic needs, the patient’s self-perception and psychological readiness are often the most important factors. Many Class II patients may not feel an immediate need for surgery unless they experience significant discomfort or dental damage. In contrast, Class III patients are typically more motivated to undergo surgery due to both functional impairments and aesthetic concerns. However, even when surgery is warranted, persuading the patient requires careful communication from the orthodontist and surgeon. Patients’ willingness to undergo surgery largely depends on their perception of their appearance and the impact of the malocclusion on their quality of life[24].

4. 2. Psychological Challenges in the Pre-Surgical Phase

Psychological difficulties that can affect the patient's overall experience and surgical results are common during the pre-operative phase. The severity of the condition, the patient's expectations, and their capacity to handle the upcoming surgery can all influence these difficulties.

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Pre-Surgical Anxiety and Fear

The preparation phase for surgery can be challenging for patients, both functionally and aesthetically. To ensure sufficient surgical movement, orthodontic decompensation is necessary, but this often worsens malocclusion and facial esthetics. As teeth shift within each jaw, occlusion may deteriorate, making it difficult for patients to cope during this phase, which can last over a year. The adverse functional environment can cause frustration. Psychological preparation before decompensation can help alleviate anxiety and uncertainty, but distress still arises due to daily functional and aesthetic changes. A newer approach, the surgery-first procedure, offers psychological benefits by shortening this phase and providing immediate facial improvement, reducing anxiety[2829].

Body Dysmorphic Disorder

Body dysmorphic disorder (BDD) is a psychiatric disorder where individuals obsess over perceived flaws in their appearance, which are often minor or nonexistent. Classified in the DSM IV, BDD causes significant distress, leading to social isolation and functional impairment. Many seek treatment from oral and maxillofacial (OMF) or plastic surgeons for their imagined defects. Due to the delusional nature of BDD, these patients typically lack insight into the unrealistic basis of their concerns and are often dissatisfied or briefly satisfied with surgical outcomes, frequently seeking further treatment from other doctors[30,31].

Orthodontists should assess the distress and dysfunction in patients with maxillofacial defects using tools like the BDD questionnaire. If significant emotional distress and moderate to severe behavioral impairment are identified, referring the patient to a psychiatrist is recommended. Psychiatrists can provide appropriate medication, such as SSRIs, to prevent unnecessary surgeries, repeated referrals, and potential legal complications.

The surgery-first approach is particularly advantageous for patients with body dysmorphic disorder (BDD), as it offers a clear psychological benefit by instantly enhancing facial aesthetics. This method prevents the usual decompensation seen in the conventional approach, helping patients avoid prolonged pre-surgical anxiety and distress over facial changes[32].

Expectation Management

Visual aids and effective communication about the limitations and realistic goals of treatment is crucial to ensuring patient satisfaction after surgery. Some patients may have unrealistic expectations, such as believing the procedure will lead to career advancement or romantic success. These individuals often overestimate, making it important for both the orthodontist and OMFS surgeon to identify these expectations during the initial consultation to avoid misunderstandings. However, most patients, as observed in epidemiological studies and orthodontic clinics, generally expect improvements in their psychological well-being and social interactions, without harboring unrealistic expectations.

Expectations of individuals can be grouped into four types[33]:

Metamorphosizers: These individuals are at a significant risk of dissatisfaction with treatment if their expectations are overly idealistic. A thorough assessment of their expectations and motivations is essential, and they may benefit from additional counseling prior to treatment.

Pragmatists: Pragmatists tend to have realistic expectations about the treatment's non-psychological outcomes but may set overly high goals for physical results. They need to be informed about what is technically achievable and potential emotional changes post-treatment.

Shedders: This group exhibits minimal expectations for physical changes while anticipating significant non-physical benefits. They may be at risk for dissatisfaction if their broader motivations are not adequately addressed.

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Evolvers: Evolvers have low expectations for both physical and non-physical changes but might be influenced by low self-esteem. Their subdued expectations could hinder their recovery, as studies indicate that higher expectations often correlate with better treatment outcomes.

4.3 Psychological Challenges in the Post-Surgical Phase

Orthognathic surgery, in contrast to orthodontic treatment, which primarily results in dental changes, is often connected to substantial gains in self-image and overall emotional well-being.

Post-Surgical Depression and Self Esteem

Patients often report positive changes in self-esteem, self-confidence, and reduced self-consciousness after surgery. Six months and a year following surgery, Finlay et al[22]. observed a trend towards higher self-esteem, however the changes were not statistically significant. However, other studies show fluctuations in self-concept post-surgery.

Patients after four months of surgery, usually see some improvement in their total self-concept; but, by nine months, all aspects of their self-concept substantially decreased from their pre-surgical levels. Self-concept scores two years postoperatively show improvement over the 9-month point, but they still fall short of preoperative levels. Disappointment from overstated social, psychological, and physical benefits, or continued orthodontic procedures, are often responsible for their decrease at nine months. After active treatment ends, there is a stabilisation of the self-concept, which is associated with the increase at two years. Kiyak et al[34]. discovered similar fluctuations, with self-esteem and individual self-esteem rising to baseline levels six weeks after surgery but falling to baseline just below six months later.

Social Adjustment

Patients often expect improved interpersonal relationships, particularly with the opposite gender, after orthognathic surgery. After surgery, patients are expected to participate in social events more since they will have an improved body image and self-concept. Studies indicate that following surgery, social engagement temporarily declines, likely due to swelling and recovery, however, after about 4 months, recreational as well as social engagement begin to improve again. Psychosocial improvements, such as in social interaction and emotional behavior, continue to progress for up to 2 years[35,36].

However, some studies suggest that these social benefits can diminish over time. Lam et al. found that 9 months post-surgery, patients' social activity levels returned to pre-surgery levels. Initial positive feedback and increased social activity often fade after a year, possibly because patients adjust to their new appearance and the excitement from early changes diminishes. This doesn’t mean the social benefits are lost, but rather that patients adapt to their new look, and the impact of their facial changes on others and themselves lessens[35].

Risk of Dissatisfaction or Regret

After surgery, patients often experience increased fatigue, moderate anxiety, and mild depression, with these negative mood states usually lasting 4 to 6 weeks. Physical issues such as pain, paraesthesia, and oral dysfunction during this early recovery phase may contribute to these feelings, but they do not have a lasting impact on self-esteem and body image in the long term.

The level of psychological distress post-surgery often relates to how patients cope. According to Kiyak et al., patients who anticipate problems (vigilant copers) tend to experience more anxiety than those who expect fewer issues (avoidant copers). This anticipation can create a self-fulfilling prophecy, where expecting problems results in behaviours that confirm those expectations. In one study, patients' expectations of interpersonal issues significantly affected their perceptions of relationships at 4 to 6 weeks and 6 months after surgery. Overall, most patients report few long-term psychological problems after surgery[37]

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CONCLUSION

Aesthetic concerns were the main reasons adults sought orthodontic or orthognathic treatment. Patients who were motivated by facial or dental aesthetics showed more interest and commitment to orthodontic treatment than those influenced by external suggestions, followed by those motivated by occlusal concerns.

Effective communication is key factor in establishing doctor-paient relationship. When seeking orthodontic therapy, adult patients have psychological challenges and benefits. Proper psychosocial evaluation and intervention before and after orthodontic treatment can be important in order to promote treatment success and outcome

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