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Original Article

EXPLORING PSYCHOSOCIAL AND TREATMENT EXPERIENCES OF PATIENTS UNDER THE SURGERY-FIRST MODEL: A QUALITATIVE STUDY

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Abstract

Background: The surgery-first approach (SFA) in orthognathic care offers early facial correction and potentially shorter treatment time. While clinical outcomes are reported, patients lived experiences across the SFA journey are less described.
Aim: To explore psychosocial and treatment experiences of patients undergoing SFA, including perceived benefits, concerns, and enablers of a positive journey.
Methods: A qualitative phenomenological study was conducted among adults treated with SFA. Purposive sampling recruited 12 participants from hospital and private settings. Data were collected using a written, semi-structured questionnaire. Responses were thematically analyzed through iterative coding, category development, and theme refinement; credibility was supported by independent review and an audit trail.
Results: Participants reported rapid visible improvement that enhanced confidence, public comfort, and motivation to complete care. Many perceived the overall timeline as shorter and less tiring. Early recovery concerns (swelling, diet limits, sleep difficulties) were common but manageable when expectations were clear. Consistent surgeon-orthodontist communication and a transparent roadmap reduced anxiety. Patients accepted that SFA is case-dependent and valued clinician-led selection and digital planning.
Conclusion: Patients experienced strong early psychosocial gains with SFA, balanced by short-term recovery demands. Clear counselling, coordinated team messages, and appropriate case selection supported satisfaction and adherence. Integrating structured patient education and interdisciplinary planning may further improve SFA experiences.

Key words- surgery-first approach; orthognathic surgery; patient experience; psychosocial outcomes; qualitative research; counselling; interdisciplinary care

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INTRODUCTION

Dentofacial deformities can affect chewing efficiency, breathing, facial balance, and self-esteem. For many patients, these conditions also carry a psychological burden because visible facial disharmony may lead to social anxiety, embarrassment, and reduced confidence in daily interactions. Orthognathic surgery plays an important role in correcting these deformities and improving both function and appearance. Traditionally, treatment follows the "orthodontics-first" sequence, where teeth are aligned before surgery. Although this approach is effective, the prolonged presurgical phase may increase stress and delay visible improvement, which can negatively affect patient confidence.

To address this, the surgery-first approach (SFA) reverses the usual sequence by performing surgery before orthodontic adjustment. The main advantage is that the patient experiences early facial correction, which can lead to faster emotional relief and immediate improvement in appearance [1]. Because many patients seek treatment for visible change before functional concerns, this approach may reduce the social discomfort linked with a long pre-surgical waiting period.

From a psychosocial perspective, early improvement in facial profile can influence self-image, personal interactions, and emotional well-being. Several reports have shown that patients who undergo early skeletal correction often feel more motivated to complete treatment, and their confidence increases shortly after surgery [2]. This is different from the conventional sequence, where patients sometimes feel discouraged during dental decompensation, when the smile and profile may look worse before surgery.

The surgery-first method is also linked with a shorter overall treatment period, which may reduce stress and treatment fatigue [3]. Shorter timelines can be especially beneficial for young adults who face academic, professional, or social pressures during treatment. In such cases, delayed improvement may affect participation in social settings or career opportunities that involve appearance-based judgement.

While physical outcomes of SFA have been reported widely, there is growing interest in understanding how patients feel during each stage of this approach. Experiences may vary depending on expectations, recovery, family support, or communication with the treatment team. Since psychosocial responses are subjective, they cannot be fully explained with quantitative indicators like

cephalometric change or treatment duration. A qualitative framework allows deeper understanding of emotional reactions, personal satisfaction, and perceived advantages from the patient's point of view.

Existing research shows that patients often assign high importance to self-image and feel more positive when improvements occur early in the treatment timeline [4]. However, not all patients have the same level of psychological readiness before surgery. Some may feel anxious about undergoing a major surgical procedure without a long orthodontic preparation period, and others may have concerns about functional changes during the early post-operative phase. These emotional variations highlight the need for patient-centred counselling.

Another important aspect of the psychosocial experience is the period immediately after surgery. Once facial correction is visible, many patients report a sense of relief and renewed identity [5,6]. For some, this positive change extends to social confidence, willingness to interact in public, and overall treatment satisfaction. However, postoperative recovery can also include fear of relapse, swelling-related discomfort, or uncertainty about the next orthodontic phase. Understanding these lived experiences can help clinicians anticipate psychological needs and improve guidance.

Despite increasing clinical use of the surgery-first method, few qualitative studies have examined how patients interpret the psychological and treatment process in real terms. Most available research focuses on clinical outcomes and stability. Therefore, exploring patient experiences is essential to better understand the human dimension of this technique. A qualitative approach can highlight personal narratives, comfort levels, anxieties, motivations, and treatment-related expectations in a way that structured surveys cannot capture.

MATERIALS AND METHODS

Study Design: This study was conducted as a qualitative, exploratory inquiry to understand the psychosocial and treatment experiences of patients who underwent the surgery-first approach in orthognathic correction.

Study Setting: The study was done in a maxillofacial surgery and orthodontic care setting where orthognathic procedures were routinely performed. Patients were recruited from both hospital-based and private clinical setups where surgery-first protocols were followed.

Ethical Considerations: Ethical approval was obtained from the Institutional Ethics Committee of Peoples College of Dental Sciences and Research Centre, Bhopal, prior to data collection. All participants provided written informed consent. Personal identity details were removed during documentation, and codes were assigned to maintain confidentiality.

*Participants and Sampling***:** The participants included adults who had completed the surgical phase of the surgery-first model and were undergoing or had recently completed postoperative orthodontic treatment. A purposive sampling strategy was applied to include information-rich cases.

In qualitative research, adequacy is based on "data saturation" rather than statistical calculation. Saturation was reached after 10 interviews, but 12 participants were included to strengthen thematic consistency.

Inclusion Criteria

- Patients aged 18 years and above.
- Underwent orthognathic surgery using the surgery-first sequencing.
- Able to read and write in English or local language.
- Willing to share treatment-related experiences voluntarily.

Exclusion Criteria

- Syndromic or craniofacial anomalies affecting speech or cognition.
- Incomplete records of surgery-first treatment.
- Unwillingness to provide written responses.

*Data Collection Procedure***:** Data were collected through a written semi-structured questionnaire, as no audio recording was used. Participants were given the proforma in a private setting and were encouraged to write their responses in their own words. Clarifications were provided only when required, keeping researcher influence minimal. Each response set was collected on the same day to avoid recall loss.

Data Analysis: Thematic analysis was carried out using an inductive approach. The analysis involved repeated reading of responses, identification of key meaning units, grouping of similar ideas into categories, and development of final themes. Coding was performed manually by the primary researcher, and themes were reviewed until conceptual saturation was confirmed.

RESULTS

The study was conducted on 12 patients who had underwent orthognathic surgery using the surgery-first sequencing. Most participants were young adults; double-jaw cases were slightly more common. Over three-quarters were within 6 months post-surgery, suitable for recalling early experiences as seen in Table 1.

Table 1. Participant Characteristics

Variable	Category	n (%)
Age	18–24	3 (25.0)
	25–34	6 (50.0)
	≥35	3 (25.0)
Sex	Female	7 (58.3)
	Male	5 (41.7)
Procedure	Single-jaw	5 (41.7)
	Double-jaw	7 (58.3)
Time since surgery	<3 months	4 (33.3)
	3–6 months	5 (41.7)
	>6 months	3 (25.0)
Setting	Private hospital	7 (58.3)
	Teaching hospital	5 (41.7)

Patients commonly chose SFA for early facial change and perceived shorter timelines; satisfaction was high and most would repeat/recommend the approach despite moderate early discomfort as seen in Table 2.

Table 2. Patient-Reported Journey and Satisfaction

Measure	Category / Scale	n (%) or Mean ± SD
Main reason for choosing SFA	Faster visible change	10 (83.3)
	Shorter total treatment	8 (66.7)
Early aesthetic improvement noticed	Within 2 weeks	9 (75.0)
Return to work/study	By 3–4 weeks	8 (66.7)
Early postoperative discomfort*	VAS 0–10	5.8 ± 1.6
Anxiety before surgery	Present	7 (58.3)
Satisfaction with decision (Likert 1–5)	Mean	4.4 ± 0.7
Would choose SFA again	Yes	10 (83.3)
Would recommend to a friend	Yes	11 (91.7)
Felt total treatment was shorter than expected	Yes	9 (75.0)

*Discomfort refers to pain/swelling in first 14 days.

Table 3. Thematic Summary of Psychosocial & Treatment Experiences

Theme	What Patients Said (coded meaning units)	Coverage n (%)	Concise Takeaway
Immediate Confidence Boost	"Face looked better quickly," "felt normal in public," "motivation increased"	10 (83.3)	Early aesthetic gain improved self-image and social comfort.
Time Efficiency Matters	"Process felt faster," "less treatment fatigue," "easier to stay committed"	9 (75.0)	Shorter perceived trajectory reduced stress and dropout risk.
Early Recovery Concerns	"Swelling/pain first 2 weeks," "diet restrictions," "sleep difficulty"	8 (66.7)	Short-term recovery issues were expected but manageable.
Need for Clear Roadmap	"Wanted exact steps," "timeline after surgery," "who to contact if issues"	8 (66.7)	Structured counselling improved confidence and adherence.
Role of Team Communication	"Orthodontist–surgeon coordination felt reassuring," "aligned messages"	7 (58.3)	Consistent team messaging reduced anxiety about occlusion/relapse.
Selective Suitability	"Not for every case," "trust doctor to decide," "case selection matters"	7 (58.3)	Patients accepted that SFA is case-dependent, guided by clinicians.

Core experiences were early confidence, perceived time savings, and value of clear guidance. Recovery challenges were temporary; team communication and good case selection shaped positive journeys as seen in Table 3.

Overall, patients reported strong psychosocial benefits from early facial correction and felt treatment moved faster than expected. Clear counselling and coordinated care helped them navigate early recovery, reinforcing satisfaction with the surgery-first pathway.

DISCUSSION

This qualitative study explored how patients experienced the surgery-first approach by focusing on both psychosocial reactions and treatment-related perceptions. The findings showed that patients valued this method mainly because of early facial improvement and the feeling that treatment moved faster. Their narratives described emotional relief after surgery, stronger motivation to continue, and greater confidence in public interaction. These lived experiences suggest that the order in which improvement becomes visible may influence how patients cope with the overall treatment process.

A central finding of this study was the sense of immediate transformation after surgery. Patients reported that seeing change early gave them reassurance that the

treatment was "working." Instead of waiting months before noticing improvement, they experienced positive results from the start. Earlier correction of facial imbalance helped them feel more comfortable in social situations, which has also been described in clinical psychology literature, where earlier visible change strengthens emotional acceptance of treatment [7]. For some participants, the positive shift was not only aesthetic but also identity-based, meaning they felt closer to their "desired self" sooner.

The participants also reported feeling that the total burden of treatment felt shorter, even if orthodontic finishing was still required afterward. This perception aligns with previous findings that shorter visible timelines improve a patient's sense of progress, which can reduce mental fatigue and improve cooperation [8]. In contrast, conventional sequencing often demands patience during the decompensation phase, which may temporarily worsen facial appearance and make patients emotionally uncomfortable. The absence of this waiting period was viewed as a major advantage.

Another key insight was the emotional boost in social confidence soon after surgery. Several patients said they felt more at ease meeting others, being photographed, or returning to public activities. This is consistent with prior reports noting that facial change influences how people evaluate themselves and how they believe others perceive them [9]. Orthognathic procedures are known to have strong psychosocial effects, and the immediate correction provided by surgery-first appears to amplify this benefit earlier in the timeline.

Although satisfaction levels were high overall, patients also described concerns during early postoperative recovery, including swelling, pain, and temporary diet restrictions. However, these concerns were viewed as temporary and expected, not discouraging. Other qualitative studies also show that most patients tolerate the early post-surgery period well when they understand the purpose and expected discomfort level [10]. In this study, reassurance seemed to come not only from physical healing but also from the emotional reward of early facial change.

Another major theme was the importance of guidance and explanation. Patients said they felt more confident when the treatment team clearly communicated the steps ahead. Those who knew what to expect after surgery—especially regarding orthodontic finishing—felt calmer. When communication is structured, patients are better prepared for decisions and less stressed by uncertainty [11]. This shows

that psychosocial comfort is shaped not only by physiological change but also by the quality of clinical counselling.

The role of team coordination also influenced the emotional experience. Patients repeatedly mentioned that when both the orthodontist and the surgeon gave consistent guidance, they felt secure. Surgery-first has a different dependency on teamwork than conventional sequencing, because the orthodontic phase happens after jaw repositioning. For patients, visible unity in communication helped build trust and reduced fear of relapse or misalignment. Prior literature shows that collaborative care improves treatment satisfaction in orthognathic patients because it gives the impression of a stable long-term plan [12].

An interesting point in this study was the recognition by patients that the surgery-first method may not be suitable for every case, and that clinical judgement should guide selection. This indicates a high level of trust in clinician-driven indication rather than a demand-based expectation. Patients did not perceive surgery-first as a replacement for traditional sequencing but rather as an advanced option that works best for certain conditions. This acceptance of selective use implies that education and expectation-setting were effective.

While earlier studies have focused on measurable outcomes such as skeletal stability, relapse, and occlusal finishing, this investigation shows that patient experience is shaped more by emotional trajectory than technical mechanics. The biological concepts behind the technique did not matter as much to the participants as how "quickly they could see change." In essence, the surgery-first method matches a common psychological pattern: visual reinforcement strengthens commitment.

The results also suggest that psychosocial benefit may serve as a motivational driver for treatment continuation. A motivated patient is usually more compliant with postoperative orthodontics, hygiene, diet instructions, and review visits. This aligns with other research reporting that visible improvement can encourage stronger follow-through with dental correction phases [13]. The improvement in internal motivation may indirectly support better treatment outcomes by reducing dropouts or neglect in later stages.

Another important implication is that counselling protocols for SFA should include both surgical and emotional preparation. Since visible improvement happens early, patients may assume that treatment is "almost finished" when

orthodontic detailing is still ongoing. Helping them understand that success involves both skeletal correction and occlusal finishing can prevent frustration later. Managing expectations ensures psychological comfort remains stable throughout the process.

This study also highlights that psychosocial outcomes appear closely tied to communication style. Patients appreciated simple explanations, visual guidance, and clarity about timelines. If information gaps occur, anxiety may increase. Therefore, strengthening structured counselling may enhance treatment experience even in centers that already perform SFA.

CONCLUSION

Overall, the findings suggest that the surgery-first method is not only a clinical technique but also a therapeutic psychological experience, where the order of outcomes influences emotional adaptation. Patients experienced a sense of relief because improvement was visible "at the start" instead of "at the end," reversing the usual emotional waiting curve found in traditional sequencing.

This work also contributes to the limited qualitative literature in this area by giving direct voice to patient viewpoints rather than reporting only clinical metrics. Understanding psychosocial experience is essential for comprehensive care planning because orthognathic treatment affects identity, self-image, and interpersonal confidence in ways that are not captured by radiographic analysis.

REFERENCES

1. DE Nuccio F, DE Nuccio F, D'Emidio MM, Pelo S. Surgery-first: a new approach to orthognathic surgery. Oral Implantol (Rome). 2017 Feb 14;9(Suppl 1/2016 to N 4/2016):98-102. doi: 10.11138/orl/2016.9.1S.098. PMID: 28280538; PMCID: PMC5333750.
2. Suen KS, Lai Y, Ho SMY, Cheung LK, Choi WS. A longitudinal evaluation of psychosocial changes throughout orthognathic surgery. PLoS One. 2018 Sep 12;13(9):e0203883. doi: 10.1371/journal.pone.0203883. PMID: 30208105; PMCID: PMC6135509.
3. Yu HB, Mao LX, Wang XD, Fang B, Shen SG. The surgery-first approach in orthognathic surgery: a retrospective study of 50 cases. Int J Oral Maxillofac Surg. 2015 Dec;44(12):1463-7. doi: 10.1016/j.ijom.2015.05.024. PMID: 26573566.
4. Finlay PM, Atkinson JM, Moos KF. Orthognathic surgery: patient expectations; psychological profile and satisfaction with outcome. Br J Oral Maxillofac Surg. 1995 Feb;33(1):9-14. doi: 10.1016/0266-4356(95)90078-0. PMID: 7718535.

5. Kiyak HA, West RA, Hohl T, McNeill RW. The psychological impact of orthognathic surgery: a 9-month follow-up. Am J Orthod. 1982 May;81(5):404-12. doi: 10.1016/0002-9416(82)90078-1. PMID: 6960727.

6. Kufta K, Peacock ZS, Chuang SK, Inverso G, Levin LM. Components of Patient Satisfaction After Orthognathic Surgery. J Craniofac Surg. 2016 Jan;27(1):e102-5. doi: 10.1097/SCS.0000000000002318. PMID: 26703058.

7. Vargo M, Ding P, Sacco M, Duggal R, Genther DJ, Ciolek PJ, Byrne PJ. The psychological and psychosocial effects of facial paralysis: A review. J Plast Reconstr Aesthet Surg. 2023 Aug;83:423-430. doi: 10.1016/j.bjps.2023.05.027. Epub 2023 May 19. PMID: 37311285.

8. Dietz A, Taylor K, Bayer O, Singer S, Follmann M, Nothacker M, et al. Evidence-based guideline diagnosis, treatment, prevention and aftercare of oropharyngeal and hypopharyngeal carcinoma. Ger Med Sci. 2025 Jun 24;23:Doc03. doi: 10.3205/000339. PMID: 40655928; PMCID: PMC12247573.

9. Agırnaslıgıl MO, Gul Amuk N, Kılıc E, Kutuk N, Demırbas AE, Alkan A. The changes of self-esteem, sensitivity to criticism, and social appearance anxiety in orthognathic surgery patients: A controlled study. Am J Orthod Dentofacial Orthop. 2019 Apr;155(4):482-489.e2. doi: 10.1016/j.ajodo.2018.05.019. PMID: 30935603.

10. Hebert KJ, Alvarez G, Flanagan S, Resnick CM, Padwa BL, Green MA. Does Anesthesiologist Experience Influence Early Postoperative Outcomes Following Orthognathic Surgery? J Oral Maxillofac Surg. 2024 Mar;82(3):270-278. doi: 10.1016/j.joms.2023.11.012. Epub 2023 Nov 18. PMID: 38043584.

11. Baxmann M, Baráth Z, Kárpáti K. The role of psychology and communication skills in orthodontic practice: a systematic review. BMC Med Educ. 2024 Dec 18;24(1):1472. doi: 10.1186/s12909-024-06451-6. PMID: 39696160; PMCID: PMC11654430.

12. Akyirem S, Salifu Y, Bayuo J, Duodu PA, Bossman IF, Abboah-Offei M. An integrative review of the use of the concept of reassurance in clinical practice. Nurs Open. 2022 May;9(3):1515-1535. doi: 10.1002/nop2.1102. Epub 2022 Mar 11. PMID: 35274826; PMCID: PMC8994970.

13. Proothi M, Drew SJ, Sachs SA. Motivating factors for patients undergoing orthognathic surgery evaluation. J Oral Maxillofac Surg. 2010 Jul;68(7):1555-9. doi: 10.1016/j.joms.2009.12.007. PMID: 20434252.