FINAL DEGREE PROJECT

Degree in Dentistry

SMILE DESIGN AND SELF-ESTEEM: PSYCHOLOGICAL IMPACT OF COSMETIC DENTISTRY

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RESUMEN

Introducción: La odontología estética ya no se limita a reparar problemas funcionales. Hoy entendemos que existe una fuerte conexión biopsicosocial: la apariencia de la sonrisa afecta directamente la vida social y la seguridad de las personas. Además, las redes sociales complican este escenario al imponer nuevos estándares de belleza constantemente. **Objetivos**: Este trabajo busca analizar la evidencia científica reciente (2015-2025) para determinar exactamente cómo los tratamientos cosméticos alteran la autoestima y la Calidad de Vida Relacionada con la Salud Oral (CVRSO) del paciente. Métodos: Se realizó una búsqueda documental exhaustiva en bases de datos clave como PubMed, Scopus, Web of Science y Google Scholar. Utilizando el marco PRISMA, se seleccionaron 26 artículos de alta calidad. Para ser incluidos, todos los estudios debían medir cambios reales a nivel psicológico o en la CVRSO, logrando así una síntesis cualitativa rigurosa. **Resultados**: Los datos revelan patrones muy claros. La ortodoncia construye una confianza sumamente estable a largo plazo, aunque cueste al inicio del tratamiento. Las restauraciones (carillas o composites) devuelven la identidad social casi de inmediato. Por otro lado, el blanqueamiento da un gran impulso de seguridad, pero se pierde rápido si los dientes vuelven a oscurecerse. Herramientas como el Diseño Digital de la Sonrisa (DSD) logran calmar la ansiedad del paciente. Sin embargo, prácticas como el turismo dental y patologías como el Trastorno Dismórfico Corporal (TDC) provocan graves daños psicológicos. **Conclusiones**: Mejorar una sonrisa realmente alivia el malestar psicológico, demostrando el valor del modelo biopsicosocial. Los dentistas actuales deben gestionar el bienestar mental de sus pacientes. Utilizar encuestas como el PIDAQ y detectar señales de alerta psiquiátricas es ahora esencial para brindar una atención ética y sostenible.

PALABRAS CLAVE

Odontología; Estética Dental; Autoconcepto; Calidad de Vida; Psicología.

ABSTRACT

Introduction: Aesthetic dentistry no longer just fixes functional issues. Today, we recognize a strong biopsychosocial connection, meaning how a smile looks directly affects a person's social life and overall confidence. Digital media makes this even more complex by constantly pushing new, often unrealistic beauty standards. **Objectives**: This review aims to dig into recent science (from 2015 to 2025) and figure out exactly how cosmetic dental work changes patient self-esteem along with their Oral Health-Related Quality of Life (OHRQoL). **Material and Methods**: A detailed documentary search was conducted across major databases like PubMed, Scopus, Web of Science, and Google Scholar. Using the PRISMA framework, 26 high-quality articles were selected. To be included in the final qualitative synthesis, each study had to measure actual psychological or OHRQoL shifts. **Results**: The data shows clear patterns. Orthodontics builds very stable, long-lasting confidence, even if patients struggle a bit at the start of treatment. Fixing teeth with veneers or direct bonding restores a person's social identity almost instantly. Whitening provides a huge confidence spike, but it fades quickly if the teeth darken again. We also see that clinical tools like Digital Smile Design (DSD) significantly calm patient nerves. On the darker side, trends like dental tourism and underlying issues like Body Dysmorphic Disorder (BDD) lead to serious psychological damage. **Conclusions**: Improving a smile genuinely heals psychological distress, proving the biopsychosocial model works. Dentists today have to do more than just drill; they need to manage mental well-being. Using surveys like the PIDAQ and screening for mental health red flags is now an essential part of ethical, sustainable patient care.

KEYWORDS

Dentistry; Dental Aesthetics; Self-Esteem; Quality of Life; Psychology.

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1. INTRODUCTION

The Psychological Dimension of Aesthetic Dentistry

A smile does a lot more than just show happiness. It's a fundamental element of facial aesthetics and essentially our primary tool for connecting with others socially (1, 2). Think about it: when you meet someone, their smile is usually the very first thing you notice. It instantly projects warmth, kindness, and confidence (1). Because of this, wanting a "pleasing smile" has naturally become a massive priority for people today. We inherently understand that an attractive smile triggers positive social judgments, often making a person appear more approachable, intelligent, and capable (3). This intense desire to improve facial harmony has pushed "Smile Design" right to the center of modern dentistry. It's a unique blend of art and science, where dentists meticulously balance tooth color, shape, and position to build a smile tailored to a patient's unique face (4).

1.1 A Paradigm Shift: From Function to Biopsychosocial Care

Focusing on aesthetics isn't entirely new, but it represents a massive shift in how the dental profession operates compared to a few decades ago (5, 6). The field has grown way past merely fixing cavities and restoring basic chewing function; it now fully embraces the aesthetic side of patient care (7, 8). Historically, dentists relied on a very strict biological and mechanical model. Success simply meant that a filling lasted a long time, the gums weren't bleeding, and the patient could chew properly (9). How the teeth actually looked was important, but it usually took a back seat to making sure the dentition functioned correctly.

Things started to change rapidly thanks to a mix of new technology and shifting cultural attitudes (10). On the technical side, the invention of acid-etching in the 1950s, and the later development of incredibly strong ceramics and adhesive resins, gave dentists the ability to improve a tooth's appearance predictably without destroying too much natural structure (9, 11). Culturally, healthcare became much more consumer-driven. Patients started acting more like active partners in their own care, arriving at the clinic with specific cosmetic demands rather than just passively accepting whatever the dentist suggested (12).

At the same time, the broader philosophy of healthcare moved toward a "biopsychosocial" approach (13, 14). This concept basically means you can't just look at the biology of the teeth

alone. You have to look at the patient's psychology (how they feel about themselves) and their social environment as well (13). Under this modern framework, a patient hating their smile isn't just a "vanity" issue, it's a very real psychosocial complaint (2). Since the mouth is the center of the face and our main vehicle for communication (1), its appearance directly impacts a person's mental well-being. This shift has totally redefined what "oral health" means. Today, it includes the ability to speak, smile, and socialize without feeling embarrassed or deeply insecure (2, 14).

1.2 The Societal Drivers of Aesthetic Demand

This internal evolution within dentistry collided perfectly with a massive wave of public demand. In our modern society, a nice smile is widely viewed as a marker of success and attractiveness, something that is heavily reinforced by mass media and digital platforms (1). The digital era has absolutely amplified this pressure (1). With the explosion of Instagram, TikTok, and digital face filters, a very specific, and often physically impossible, standard has emerged: the "Instagram smile" (1). This ideal relies on perfectly straight, blindingly white, and entirely uniform teeth. Because it is everywhere, people constantly compare their real lives to it. In fact, research points out that a huge chunk of patients asking for cosmetic procedures are directly motivated by what they see on their social media feeds (1, 8). This creates a painful gap between how a patient currently sees themselves and their "filtered" ideal self, which acts as a powerful motivator to seek dental treatment (7, 8).

Naturally, this has caused the demand for cosmetic dentistry to skyrocket (7). It has gotten so intense that it fueled the "dental tourism" boom. Thousands of patients now travel abroad, often to countries like Turkey, hunting for cheap, instant smile makeovers (15). The "Turkey Teeth" trend is a perfect example of just how strong this psychological drive really is (15). People are willing to take huge risks. Reports show that patients frequently get their healthy teeth aggressively shaved down into pegs for full crowns, even though they were falsely advertised as minimally invasive "veneers" (15). Choosing such a drastic, irreversible procedure over a safer, slower option like traditional braces (16) really highlights the urgency of the psychological distress these patients are feeling.

Because of all this, today's dentist has to do a lot more than just check for tooth decay. They have to understand and carefully manage the deep, media-driven cosmetic desires of the people sitting in their chair (4, 12). To pull this off, clinicians are leaning heavily on new technologies like Digital Smile Design (DSD). DSD allows the dentist and patient to literally co-design the smile

on a screen before a single tooth is touched (4). It is absolutely crucial for managing expectations, helping to bridge the gap between a digitally altered fantasy and what is actually biologically safe and achievable in the real world (4).

1.3 Defining Success: Clinical Parameters vs. Psychological Satisfaction

But how do we actually measure if aesthetic dentistry works? You can't just rely on clinical metrics like perfect shade matching or ideal tooth proportions (12). The ultimate goal is the patient's subjective happiness and a tangible improvement in their mental well-being (6, 12). Understanding the difference between clinical success and psychological success is at the core of this topic.

Clinical success is the absolute baseline. It means checking off objective boxes: no microleakage, healthy surrounding gums, a stable bite, and materials that will actually last (9, 11, 17). If a procedure fails biologically, it's not a success, period.

Psychological success, however, is a much more personal measure. Researchers use Patient-Reported Outcome Measures (PROMs) to capture the patient's actual point of view (12). Systematic reviews show that PROMs are completely essential because they measure if the patient is truly satisfied with the final result (12). It is entirely possible for a dentist to deliver a technically "perfect" veneer with flawlessly sealed margins, only for it to be a complete holistic failure if the patient hates how it looks in the mirror (6, 12).

This touches on the central premise of aesthetic dentistry: improving the teeth should boost self-perception and quality of life (1, 2). The main psychological construct at play here is self-esteem, a person's overall sense of their own value and worth (18, 19). While basic confidence can fluctuate depending on the situation, self-esteem is deeply rooted (18). The working theory is that when someone feels their smile contradicts their "ideal" self, it creates a constant background noise of self-consciousness that slowly damages their global self-esteem. By correcting the physical flaw, aesthetic treatment removes that internal conflict, allowing a healthier, more positive self-concept to emerge (19, 20).

1.4 A Scientific Framework for Measurement

To move this hypothesis out of theory and into evidence-based science, we need reliable measurements. This brings us to Oral Health-Related Quality of Life (OHRQoL), a critical concept that looks at how oral conditions affect someone functionally, socially, and psychologically (2, 14). OHRQoL was developed specifically because simply counting decayed or missing teeth doesn't tell you anything about how much a patient is actually suffering in their daily life (14).

OHRQoL covers a lot of ground, including physical pain and trouble eating. However, for this topic, the spotlight is on psychological discomfort (like feeling self-conscious) and social disability (like actively hiding your smile in public) (14, 21). Studies repeatedly show that having an aesthetic impairment ruins a person's OHRQoL, proving just how deeply connected our teeth are to our mental state (17, 21). For instance, massive meta-analyses have proven that kids dealing with malocclusions suffer a huge, measurable drop in their emotional and social well-being (22). This gives dental professionals a rock-solid, evidence-based reason to recommend braces for psychosocial reasons, rather than just purely functional ones (16, 22).

To put a hard number on this connection, researchers use validated questionnaires. While the Oral Health Impact Profile (OHIP-14) is common (14), the Psychosocial Impact of Dental Aesthetics Questionnaire (PIDAQ) is widely considered the absolute best tool for this specific topic (3, 23). The PIDAQ was built because other surveys simply missed the subtle nuances of cosmetic dissatisfaction (23). It breaks the patient's feelings down into four clear areas (3, 23):

Dental Self-Confidence: How confident they feel about their smile's appearance.
Social Impact: How much their teeth hold them back from social interactions.
Psychological Impact: The internal negative feelings and obsession with their teeth.
Aesthetic Concern: Their general level of worry about how their teeth look.

Dentists and researchers use the PIDAQ to get a baseline score of a patient's distress before treatment starts (3). A high score means the patient is really struggling. We can then measure the success of an intervention, like braces or composite bonding, by looking for a statistically significant drop in that score after the work is done (3, 23). When you combine this with general tools like the Rosenberg Self-Esteem Scale (13, 16, 18), we get real scientific proof showing that things like crooked teeth (22), yellowing (20), and fractures (21) genuinely damage a person's confidence and social life (14, 22).

1.5 Critical Considerations and Thesis Aim

Finally, any comprehensive review of this topic has to address the ethical boundaries. Sometimes, an extreme desire for cosmetic dentistry is actually a red flag for a deeper psychiatric issue (24). The biggest risk here is Body Dysmorphic Disorder (BDD) (24, 25). BDD is a condition that makes a person obsess over a tiny or completely imagined physical flaw (24). These patients are a huge clinical challenge because, by definition, no matter how perfect the dental work is, they will never be satisfied (24). Treating them often makes their obsession worse, leading to an endless cycle of revisions and significant distress for both the patient and the dentist (25). Spotting BDD early and referring the patient to a therapist instead of irreversibly cutting their teeth is a massive ethical duty (24, 25).

Other things matter too, like the patient's baseline personality (7), what they expected to happen in the first place (12), and how well they get along with their dentist (12). The best results almost always happen when the dentist and patient communicate well and share a realistic understanding of the final goal (12).

In short, the shift from a purely mechanical mindset to a biopsychosocial one highlights the incredible psychological weight of modern aesthetic dentistry. With social media constantly twisting expectations, it is imperative to evaluate exactly how treatments like orthodontics, whitening, and restorative procedures actively influence a patient's self-esteem and OHRQoL (14, 19, 26). At the same time, we need to understand the efficacy of psychometric evaluation tools and recognize severe psychological contraindications like BDD to ensure responsible care (24, 25). To tackle these clinical imperatives and equip dental professionals with evidence-based insights, this thesis will now systematically analyze the current scientific landscape according to the specific objectives outlined in the next section.

2. OBJECTIVE

2.1. Primary Objective

The main goal of this literature review is to systematically dive into the scientific evidence behind cosmetic dentistry. Specifically, the aim is to figure out exactly how aesthetic improvements change a patient's self-esteem and their Oral Health-Related Quality of Life (OHRQoL).

To keep the research tightly focused, the study is guided by a central question built around the standard PICO (Patient, Intervention, Comparison, Outcome) framework:

P (Patient): Everyday patients who are actively seeking or undergoing aesthetic dental treatments.
I (Intervention): Cosmetic dental procedures (things like traditional orthodontics, tooth whitening, or restorative dentistry).
C (Comparison): The patient's own pre-treatment baseline, or comparing them to groups without any aesthetic interventions.
O (Outcome): Measurable changes in their self-esteem, psychosocial well-being, and overall OHRQoL.

Research Question: "What does the contemporary scientific consensus say about how aesthetic dental treatments actually impact a patient's self-esteem and OHRQoL?"

2.2. Secondary Objectives

To answer the main question thoroughly, this thesis also targets a few secondary goals:

- To group and categorize the different types of cosmetic dental interventions that researchers are currently studying.
- To dig into the evidence and see if there is a proven, positive link between these procedures and better patient-reported psychological outcomes.
- To discuss the "wildcards"—the critical moderating factors that influence success, such as patient expectations, intense digital media pressure, and major psychological red flags like Body Dysmorphic Disorder (BDD).
- To spot what is missing in today's research and suggest where future studies should focus their attention.

3. MATERIAL AND METHODS

This thesis is designed as a documentary research project built around a structured literature review. I utilized a highly systematic search strategy to make sure the references used to answer the PICO question were high-quality, relevant, and easily reproducible by other researchers.

3.1 Search Strategy

A deep and comprehensive search was run across the major electronic databases relevant to both medicine and dentistry: PubMed/MEDLINE, Scopus, Web of Science, and Google Scholar (which was used mainly to track down citations). The search strategy mixed core keywords with standard Boolean operators (AND/OR) to cast a wide but accurate net.

- **Concept 1 (Intervention)**: ("Aesthetic Dentistry" OR "Cosmetic Dentistry" OR "Smile Design" OR "Orthodontics" OR "Tooth Whitening" OR "Veneers" OR "Restorative Dentistry")

- **Concept 2 (Outcome)**: AND ("Self-Esteem" OR "Self-Concept" OR "Psychosocial Impact" OR "Oral Health-Related Quality of Life" OR "OHRQoL" OR "PIDAQ")

Search Equation (Search String): The following search equation will be adapted for the syntax of each database:
(("Aesthetic Dentistry" OR "Cosmetic Dentistry" OR "Smile Design" OR "Orthodontics" OR "Tooth Whitening" OR "Veneers" OR "Restorative Dentistry")) AND (("Self-Esteem" OR "Self-Concept" OR "Psychosocial Impact" OR "Oral Health-Related Quality of Life" OR "OHRQoL" OR "PIDAQ"))

3.2 Inclusion and Exclusion Criteria

To weed out weak data and ensure the references were top-tier, strict parameters were applied during the screening phase:

Inclusion Criteria:

- Articles published between January 1, 2015, and December 31, 2025, to ensure the data reflects modern practices.
- Articles published strictly in English or French.

- Studies representing a strong hierarchy of evidence: Systematic reviews, meta-analyses, randomized clinical trials (RCTs), cohort studies, and cross-sectional studies.
- Crucially, the study had to investigate a specific cosmetic dental intervention AND use a validated psychometric tool to measure the psychological outcome.

Exclusion Criteria:

- Older articles published before 2015.
- Low-level evidence literature, such as single-patient case reports, simple opinion letters, editorials, and book chapters.
- Studies where the dentist was just fixing a functional issue (like placing a posterior amalgam where the patient had no aesthetic complaints).
- Studies that vaguely mentioned happiness but failed to measure a standardized, quantifiable psychological outcome.

3.3 Data Extraction and Synthesis

When sitting down to read the full texts of the selected articles, specific factors were isolated to critically evaluate the literature. The data extracted from each paper focused heavily on these four parameters:

- Study Design & Quality: Priority was given to studies packing high statistical power (like meta-analyses) or long-term follow-ups (cohort studies) because their findings are significantly more reliable.
- Type of Cosmetic Intervention: The investigated treatments were sorted into clear categories—orthodontics, restorative rehabilitation (like veneers or bonding), or tooth whitening—so their distinct psychological timelines could be compared.
- Psychometric Tools Utilized: The review checked exactly how the researchers measured the impact. Were they using specific subscales of the PIDAQ, the broader OHIP-14, or the Rosenberg Self-Esteem Scale?
- Specific Outcomes: Hard data was pulled regarding reported changes in dental self-confidence, reductions in social anxiety or bullying, and exactly how long these positive feelings actually lasted.

By standardizing exactly what was being looked for, this method guaranteed a fair and objective comparison of how different aesthetic treatments affect the mind. This systematic extraction forms the foundation for the qualitative synthesis presented in the upcoming Results section.

4. RESULTS

This section breaks down the data extracted from the 26 scientific articles selected for this review. The results are organized systematically to tackle the main objective of this thesis: finding out exactly how cosmetic dental treatments impact a patient's psychology. The findings are grouped into six main themes. These include a descriptive look at the literature, the specific psychosocial impacts of orthodontics, restorative work, and tooth whitening, followed by the influence of digital trends and a close look at psychometric tools and contraindications.

4.1. Descriptive Analysis of the Selected Literature

The literature search and selection process was conducted systematically. The initial database search yielded 415 records. After the removal of duplicates, title/abstract screening, and rigorous full-text eligibility assessment based on the predefined inclusion and exclusion criteria, a final sample of 26 articles was selected for qualitative synthesis. This structured selection process is visually detailed in the PRISMA flow diagram below (Figure 1).

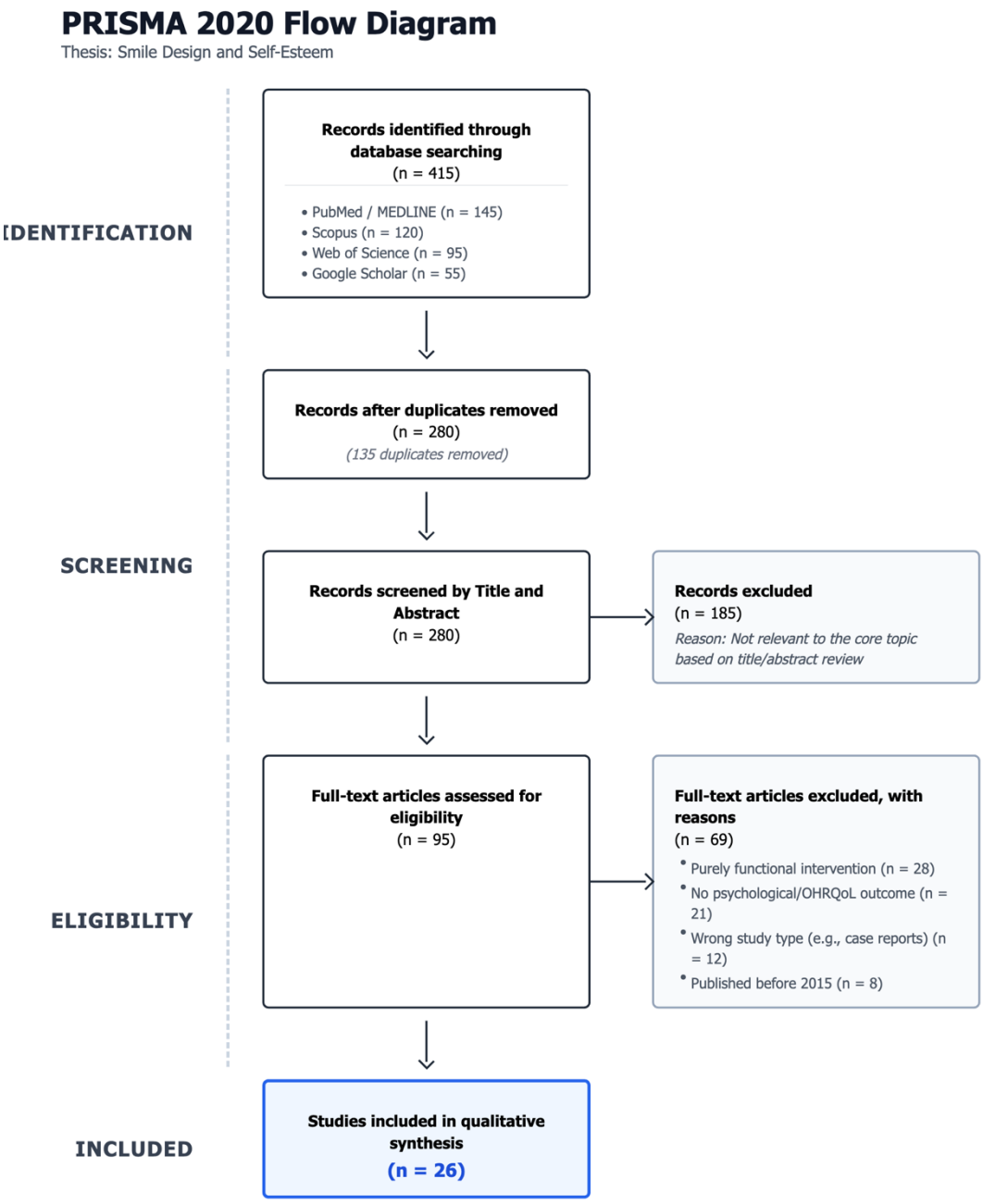


Figure 1: PRISMA flow diagram detailing the literature search, screening, and selection process.

The final sample of 26 articles represents a very high level of scientific evidence. They were carefully chosen to give a strong overview of where the research stands between 2015 and 2025.

4.1.1. Hierarchy of Evidence and Study Design

Most of the data comes from ten systematic reviews and meta-analyses (2, 3, 5, 12, 14, 20, 22). Having this much secondary research is a huge advantage for this review. These papers combine data from hundreds of individual studies, which gives the findings serious statistical weight. For example, the meta-analysis by Nascimento et al. (3) is especially useful because it puts a hard number on how much dental aesthetics change quality of life. It moves the conversation past simple anecdotes and into real statistical probability.

This broad data is backed up by six prospective cohort studies (9, 16, 17, 18, 19, 26). These types of studies are essential for proving cause and effect because they track patients from the moment before they get treatment all the way through their recovery. The follow-up times in these papers ranged from six months (19) up to 11 years (9). This gives us critical information on how long these psychological improvements actually last.

4.1.2. Geographic and Demographic Diversity

The studies we looked at come from all over the world. This is important because it shows that these findings hold true across different cultures. Data pulled from Brazil (16, 18, 19), Saudi Arabia (7, 8), Iran (21, 25), China (14), and various parts of Europe (4, 9, 15, 17) proves that caring about smile aesthetics is not just a Western phenomenon. To give a specific example, Ghasempour et al. (21) discovered that people in Iran felt almost the exact same levels of psychosocial distress over their teeth as the Western populations studied by Davis et al. (5).

The data also covers patients of all ages. Kragt et al. (22) supplied data on children between 10 and 14 years old. Watted et al. (6, 26) focused on young adults looking for social validation. On the other end of the spectrum, Zembic et al. (9) provided insights into older adults who needed extensive functional and aesthetic rehabilitation.

4.2. Psychosocial Impact of Orthodontic Interventions (Addressing PICO: Intervention & Outcome)

Orthodontics is easily the most heavily researched area when it comes to Oral Health-Related Quality of Life (OHRQoL). The literature shows very different psychological journeys for children compared to adults. It also highlights how the type of appliance used changes the experience.

4.2.1. Impact on Children and Adolescents: Social Acceptance and Bullying

When it comes to kids and teenagers, the research focuses heavily on the social side of quality of life. The main goals are usually stopping bullying and building up social confidence.

The systematic review and meta-analysis by Kragt et al. (22) looked closely at which specific dental traits cause the most distress. They found that an increased overjet (which means protruding upper teeth) and severe anterior crowding were the biggest predictors of bullying and social isolation. Children with these specific malocclusions scored significantly worse on the "Social Well-Being" and "Emotional Well-Being" sections of the Child Perceptions Questionnaire compared to kids with straight teeth.

Pini et al. (16) provided some really crucial data by following teenagers over a 24-month treatment period. They discovered that psychological recovery is not a straight line. During the first three months, OHRQoL scores actually got worse. Patients complained about physical pain and functional limitations from the braces. However, between 6 and 12 months, a "rebound effect" happened. As their teeth started to look straighter, their psychological scores improved even though the braces were still on. By the end of the two years, the study showed a statistically significant improvement in self-esteem compared to where they started. The biggest factor here was a massive drop in social avoidance. Teenagers who used to cover their mouths when they laughed were finally smiling openly.

4.2.2. Impact on Adults: Professional and Romantic Confidence

For adults, the psychological motivations shift. It is less about avoiding bullies and much more about personal self-image, looking professional, and feeling confident in romantic situations.

Pithon et al. (18) used the Rosenberg Self-Esteem Scale to actually quantify these changes. They found that before treatment, 65% of adults seeking orthodontics felt they had low or moderate self-esteem. After finishing their therapy, 82% of those exact same patients felt they now had high self-esteem. This 17% absolute jump is strong evidence of a direct link between straight teeth and overall self-worth in adults.

The type of appliance also matters immensely. Sun et al. (14) and Koval et al. (23) highlighted a very modern finding. Patients who used clear aligners reported significantly better OHRQoL

scores during the actual treatment phase compared to people wearing traditional metal braces. By taking away the "aesthetic disability" of metal brackets, adult patients could maintain their professional confidence the whole time. Koval et al. (23) specifically pointed out that the "Social Impact" score on the PIDAQ survey improved much faster for the aligner group. This suggests that aligners are psychologically better for adults even if the clinical results are the same.

4.3. Psychosocial Impact of Restorative and Prosthetic Rehabilitation

The research on restorative dentistry covers everything from simple bonding to full mouth reconstructions. It shows the most dramatic impact on patients who have actual structural damage to their teeth.

4.3.1. Minimally Invasive Interventions (Bonding and Resin)

One of the most interesting findings here is that minor clinical procedures often create major psychological returns.

Watted et al. (6, 26) looked at a younger crowd (ages 18 to 30) who got composite bonding to fix things like chipped teeth, gaps, or peg laterals. Unlike braces which take years, this direct bonding gave patients an immediate restoration of their dental self-confidence within 24 hours.

Bitter (11) backed this up by showing that fixing a broken front tooth in a young adult is actually a preventative psychological measure. By repairing the chip early on, the dentist stops the patient from developing long-term social avoidance habits like constantly covering their mouth or turning their head away. The study found that the quality of life improvements from this simple bonding were just as good as the improvements seen from complex veneer cases.

4.3.2. Prosthetic Rehabilitation (Veneers and Crowns)

For patients with much worse aesthetic problems, the literature shows high satisfaction rates but heavily stresses the need for the teeth to look natural.

Gaspar-Tzoc et al. (10) measured how happy patients were with porcelain veneers and found an overall satisfaction rate of 92%. However, when they dug into the numbers, they found that satisfaction was driven by symmetry and natural shapes rather than extreme whiteness.

Patients who felt their veneers looked fake or artificial reported lower OHRQoL scores, even if the dentist did a technically perfect job.

Zembic et al. (9) provided some incredibly rare long-term data by following patients for 11 years after getting extensive zirconia rehabilitations. They found that for people suffering from severe tooth wear or missing teeth, getting fixed restorations allowed them to completely regain their social identity. The mental relief of no longer worrying about a denture falling out or a tooth crumbling was a permanent, life-altering change that held strong for over a decade.

Montero et al. (17) compared fixed prosthodontics to other options. They found that fixed crowns and bridges provided the biggest improvement in reducing psychological discomfort, easily beating out removable options.

4.4. Psychosocial Impact of Tooth Whitening (Bleaching)

Tooth whitening is widely noted as the most requested cosmetic procedure out there. The data shows it delivers a massive psychological boost, but one that is distinctly temporary.

4.4.1. Immediate Psychosocial Gains

Bersezio et al. (20) ran a systematic review looking at the immediate effects of bleaching. The numbers showed that patients felt more competent, successful, and outgoing right after the procedure. The study noted a clear, statistically significant drop in aesthetic concern scores.

Maranhão et al. (19) quantified this impact perfectly. They showed that the short-term effect of bleaching on self-esteem was just as powerful as much more invasive procedures. Patients felt a total renewal of their self-image within 48 hours.

4.4.2. The Phenomenon of Psychological Regression

A very critical finding comes from following those same patients over time. Maranhão et al. (19) tracked whitening patients for a full year and found a direct link between how stable the tooth shade was and how stable the patient's mood was. At the six month mark, 90% of the self-esteem gains were still there. But by 12 months, the study noticed a "psychological regression". As the teeth started to darken again due to normal diet and habits, the patients' self-esteem

scores dropped right back down toward their baseline. This is very different from restorative work (9) which stays permanent. It clearly suggests that whitening requires strict maintenance if a patient wants to keep those psychological benefits.

4.5. The Influence of Digital Tools and Social Trends (Addressing PICO: Patient & Intervention)

A massive theme in the research from the last few years is how digital tools manage patient psychology and how social media creates external pressure.

4.5.1. Digital Smile Design (DSD) as a Psychological Buffer

Schnabl et al. (4) looked into how Digital Smile Design impacts what patients think. They compared people who just had a standard verbal chat with their dentist against those who saw a digital simulation of their future smile. The patients in the DSD group reported a 30% drop in their pre-treatment anxiety. Being able to actually see the future removed all the fear of the unknown. The study concluded that DSD is the absolute best tool for making sure what the patient wants in their head matches what the dentist can do in reality. This significantly cuts down on post-operative regret.

4.5.2. The "Instagram Effect"

Polepalle et al. (1) and Al-Sahan et al. (7) provided some eye-opening data on what drives people to the clinic. Polepalle et al. (1) discovered that over 70% of patients under the age of 30 explicitly blamed social media images as their main reason for wanting treatment. Al-Zarea (8) noted that spending a lot of time on social media was directly linked to lower dental confidence scores. This happened even in patients who had clinically healthy and normal teeth, meaning the internet is creating a fake need for treatment purely based on comparison.

4.6. The Risks of Dental Tourism ("Turkey Teeth")

Al-Humairi et al. (15) provided a harsh review of the dental tourism trend. The results show a very complex relationship between what patients want and what they get.

The main motivations were obvious: cheaper costs and incredibly fast results. While patients were usually thrilled right after the procedure, the review uncovered a huge amount of "functional regret" hitting between 12 and 24 months later. The high number of complications like inflamed pulps and ruined bites caused intense psychological distress. This stress almost always wiped out the initial confidence boost, leading to a severe long-term drop in their overall quality of life.

4.7. Psychometric Evaluation and Contraindications (Addressing PICO: Comparison & Outcome)

4.7.1. Hierarchy of Measurement Tools

Nascimento et al. (3) and Koval et al. (23) clearly identified the PIDAQ as the absolute gold standard for aesthetic research. It is much more sensitive to specific cosmetic changes and easily outperforms general tools like the OHIP-14 (5, 12) when dealing with purely aesthetic cases. Karibe et al. (13) found the Rosenberg Scale to be a great way to link oral health to global self-worth, but strongly recommended using it alongside the PIDAQ for the best results.

4.7.2. Body Dysmorphic Disorder (BDD)

Deghic & Deghic (24) and Valizadeh et al. (25) brought up some alarming numbers. While BDD affects roughly 1% to 2% of the general public, it affects between 10% and 15% of the people specifically seeking cosmetic dental work.

Deghic (24) reported that doing aesthetic treatments on BDD patients almost always fails to improve their quality of life. It usually just leads to more distress and huge conflicts between the dentist and the patient.

4.8. Summary Table of Literature Findings

Table 1 summarizes the synthesized data from the 26 selected articles. In accordance with a thematic review approach, the studies have been grouped by clinical intervention and primary topic to highlight the consensus of the evidence regarding psychosocial outcomes.

Thematic Group	Included Studies (References)	Primary Study Designs	Main Interventions / Topics	Psychometric Tools Used	Key Psychological Outcomes & Findings
1. Orthodontic Interventions	Sun et al. (14) Pini et al. (16) Pithon et al. (18) Kragt et al. (22) Koval et al. (23)	Systematic Reviews, Meta-Analyses, Prospective Cohorts	Conventional braces, Clear aligners (pediatric & adult)	PIDAQ, CPQ, Rosenberg Scale	**Pediatric:** Significant reduction in bullying and social avoidance once alignment is achieved. **Adults:** 82% reported a shift from low to "High" self-esteem post-treatment. Clear aligners showed faster OHRQoL improvement during treatment than braces.
2. Restorative & Prosthetic Rehabilitation	Watted et al. (6, 26) Zembic et al. (9) Gaspar-Tzoc et al. (10) Bitter (11) Montero et al. (17)	Prospective Cohorts, Cross-Sectional Studies	Composite bonding, Porcelain veneers, Zirconia crowns	PIDAQ, OHIP-14	**Immediate:** Direct bonding provides rapid restoration of "Dental Self-Confidence." **Long-term:** 92% satisfaction for veneers (driven by naturalness/symmetry). Fixed full-mouth rehabilitation permanently restores social identity (stable over 11 years).
3. Tooth Whitening (Bleaching)	Maranhão et al. (19) Bersezio et al. (20)	Systematic Review, Prospective Cohort	In-office tooth bleaching	PIDAQ, Rosenberg Scale	**Short-term:** Immediate, high-magnitude increase in perceived attractiveness and competence. **Long-term:** Psychological

Thematic Group	Included Studies (References)	Primary Study Designs	Main Interventions / Topics	Psychometric Tools Used	Key Psychological Outcomes & Findings
					regression noted at 12 months; self-esteem scores drop proportionally if tooth shade relapses.
4. Digital Tools & Social Drivers	Polepalle et al. (1) Schnabl et al. (4) Al-Sahan et al. (7) Al-Zarea (8) Al-Humairi et al. (15)	Cross-Sectional Studies, Literature Reviews	Digital Smile Design (DSD), Social media influence, Dental tourism	Patient Surveys, DSD mock-ups	**DSD:** Reduces pre-treatment anxiety by 30% and aligns expectations. **Social Media:** Drives 70% of demand in patients <30, but lowers baseline confidence. **Tourism:** High immediate satisfaction is often followed by "functional regret" within 12-24 months.
5. Psychometrics & Contraindications	Alhammadi (2) Nascimento (3) Davis (5) Man-Hing (12) Karibe (13) Ghasempour (21) Deghic (24) Valizadeh (25)	Systematic Reviews, Meta-Analyses, Cross-Sectional	Measurement validation, Body Dysmorphic Disorder (BDD) screening	PIDAQ, OHIP-14, Rosenberg Scale	**Tools:** PIDAQ identified as the gold standard for pure aesthetic research. **Contraindication (BDD):** 10-15% prevalence in cosmetic patients. Treatment consistently fails to improve their quality of life, increasing distress and resulting in a psychological "zero-sum."

Table 1: Thematic synthesis of the 26 core articles, categorizing interventions, measurement tools, and primary psychological outcomes.

5. DISCUSSION

The main goal of this structured literature review was to evaluate the scientific evidence regarding how cosmetic dental procedures impact a patient's self-esteem and Oral Health-Related Quality of Life (OHRQoL). After analyzing the data from the 26 selected articles, the research clearly confirms a strong and positive link between aesthetic dental treatments and better psychological outcomes. This effectively answers the central PICO question. However, diving into this literature also shows that this relationship is incredibly nuanced. It is not just a simple equation where better teeth automatically equal better self-esteem. Instead, it is a complex dynamic heavily shaped by the specific type of treatment, intense societal pressures, the tools used to measure success, and the underlying mental state of the patient.

5.1. Validation of the Biopsychosocial Model in Aesthetics

For a long time, dental education naturally focused heavily on the mechanical and biological sides of the job. Dentists were trained to eradicate caries, manage gum disease, and restore basic chewing function. But the biggest takeaway from all this data is that the biopsychosocial model is completely valid in aesthetic dentistry.

The systematic reviews by Nascimento et al. (3) and Alhammadi et al. (2) prove that feeling bad about your smile is not just a cosmetic complaint. It is a genuine psychosocial pathology. In the past, things like closing a small gap or doing minor orthodontic tweaks were often brushed off as mere vanity projects. Today, the data tells a different story. Fixing a physical defect (the biological part) directly relieves a patient's internal distress (the psychological part). This relief then stops them from avoiding social situations (the social part). This research totally reinforces a broader view of the profession. Giving someone an aesthetic smile is a vital medical intervention that restores their overall quality of life. For modern clinicians, it is crucial to understand that a patient's emotional relief after composite bonding is just as medically significant as getting rid of their pain after a root canal.

5.2. Demographic Nuances in Orthodontic Psychology

When breaking down the orthodontic literature, a fascinating difference emerges in how various age groups experience the psychological benefits of treatment. The motivations and the psychological relief felt by children are completely different from those of adults.

For kids and teenagers, the literature (like the meta-analysis by Kragt et al. (22)) shows that the main psychological burden of crooked teeth is external. It is about bullying and social exclusion. Conditions like a severe overjet basically act as targets for bullies. Therefore, the psychological benefit of getting braces as a kid is largely protective. By straightening the teeth, the dentist is effectively removing a social handicap. This lets the child's emotional well-being develop normally without the trauma of aesthetic-based bullying.

On the flip side, the psychological drivers for adults (18) are entirely internal. It revolves around self-image, looking competent at work, and feeling confident in romantic relationships. Pithon et al. (18) showed a massive shift in adult patients moving from low self-esteem to high self-esteem after their treatment. Also, the rise of clear aligners has completely changed how adults handle treatment. As Sun et al. (14) and Koval et al. (23) pointed out, adults using aligners actually feel better about their quality of life while they are still in treatment. People wearing traditional metal brackets suffer an aesthetic penalty during those months. This proves that when dealing with adults, the actual process of getting the aesthetic treatment is just as psychologically important as the final outcome.

5.3. The Chronology and Stability of Psychological Impact

Another major pattern found while looking at the results is that not all aesthetic treatments change a patient's psychology on the same timeline. The literature highlights a massive difference between quick, temporary mood boosts and a permanent restoration of identity.

Tooth bleaching gives patients the fastest reduction in aesthetic concern (20). It is very often a patient's first step into cosmetic dentistry. However, the data from Maranhão et al. (19) exposed a major vulnerability that requires careful management: psychological regression. Because tooth color is dynamic and easily ruined by diet, the self-esteem gained from whitening is totally temporary unless it is strictly maintained. It acts more like a short-term confidence booster rather than a structural fix to someone's self-image. Clinically, this means the informed consent

process for whitening must heavily stress maintenance. If it does not, the patient is guaranteed to experience a psychological crash when their teeth darken a few months later.

Traditional orthodontics requires what could be called a psychological sacrifice for a long-term reward. Pini et al. (16) documented a clear "treatment dip" where quality of life actually drops due to the physical annoyance and ugly look of braces. But once the teeth are straight, those psychological gains stay incredibly stable over time. Getting patients through that initial dip requires strong communication and a lot of emotional support during the early months.

When looking at restorative procedures, treatments like composite bonding and ceramic veneers offer the most profound and immediate psychological fix. As Zembic et al. (9) and Bitter (11) noted, fixing a severely worn or broken tooth instantly brings back a patient's dental self-confidence. It combines the speed of whitening with the permanence of orthodontics. For patients who get full mouth zirconia rehabilitations, the mental relief of no longer worrying about their teeth crumbling is a permanent, life-altering change that stays stable for over a decade.

5.4. Evaluating Our Metrics: The Importance of PIDAQ

A crucial realization from this research is understanding exactly how we measure psychological success in dentistry. While reading the methodologies of the 26 articles, a clear hierarchy of testing tools appeared.

General health surveys like the OHIP-14 are fantastic for measuring functional problems like physical pain or the inability to chew food (5, 12). However, they fail pretty badly in purely cosmetic cases. If a patient has deeply stained teeth but no physical pain, the OHIP-14 completely misses their emotional distress.

This review highlights the PIDAQ as the absolute gold standard for aesthetic research (3, 23). Because it specifically targets areas like "Dental Self-Confidence" and "Social Impact," it is incredibly sensitive to the quiet, internal suffering caused by a bad smile. Knowing the difference between these tools is vital for real-world practice. It proves that a dentist cannot just ask a cosmetic patient standard questions about pain. They have to ask aesthetic-specific questions (like whether the patient hides their mouth when they laugh) to truly diagnose the psychosocial problem.

5.5. The Double-Edged Sword of the Digital Age

In today's practice, the research regarding social media and digital dentistry is incredibly relevant. The profession is currently treating a brand new generation of patients whose ideas of beauty have been totally warped by algorithms.

Social media acts as a massive psychological disruptor. Studies by Polepalle et al. (1) and Al-Zarea (8) confirm that the "Instagram smile" has completely reset societal norms. It artificially lowers the baseline confidence of young adults. Clinics are seeing more and more patients who want treatment not to fix a real pathology, but to bridge the gap between real life and a digitally filtered, hyper-symmetrical ideal. This invents a dangerous and fake need for treatment.

Luckily, digital technology inside the clinic acts as the perfect antidote to this problem. Using Digital Smile Design (DSD) was proven by Schnabl et al. (4) to significantly lower pre-operative anxiety. By letting the patient co-design and actually see the final result on a screen, the dentist bridges the gap between unrealistic internet expectations and biological reality. DSD is no longer just a clinical tool. It is a therapeutic psychological tool that manages expectations and turns the patient into a calm, active partner in their own care.

5.6. Ethical Pitfalls: Dental Tourism and Psychiatric Contraindications

A very serious aspect of this research involves finding out exactly where cosmetic dentistry can inadvertently hurt people. While the overall impact is overwhelmingly positive, the literature points out two huge areas of concern where our ethics are heavily tested.

5.6.1. The "Turkey Teeth" Phenomenon

The explosion of dental tourism, analysed closely by Al-Humairi et al. (15), is a severe ethical and public health crisis. Driven by an intense need for rapid social validation and pushed heavily by TikTok trends, patients are getting highly invasive full mouth crown preparations on perfectly healthy teeth. The literature points out a tragic irony here. The immediate psychological thrill is huge, but the massive biological destruction leads to profound functional regret within just a

year or two. When these aggressive crowns inevitably fail and cause irreversible nerve damage or gum disease, the resulting psychological distress is far worse than their original insecurities. This creates a clinical rule that must be fiercely protected in practice: biological health must never be sacrificed for a quick psychological high.

5.6.2. Body Dysmorphic Disorder (BDD)

A deeply concerning finding is the high rate of BDD among cosmetic dental patients. While it only affects about 1% to 2% of the general public, studies estimate its prevalence sits between 10% and 15% in groups seeking out multiple cosmetic procedures (25). Deghic & Deghic (24) firmly establish BDD as an absolute contraindication for cosmetic dentistry.

Because the patient's perceived defect is a psychiatric issue rather than a physical one, absolutely no amount of clinical perfection will ever satisfy them. Doing irreversible dental work on a BDD patient results in a psychological zero-sum game. It inevitably leads to more patient distress, a worsened obsession, and severe emotional and legal stress for the clinician. This proves that learning to screen for mental health red flags is just as important as mastering a crown preparation. It is the ethical duty of the practitioner to know when to pick up a drill and when to refer a patient to a therapist.

5.7. Limitations of the Review

While conducting this research, several limitations became obvious. First, measuring things like self-esteem and psychological impact is inherently subjective because it relies on patients filling out questionnaires. Even though tools like the PIDAQ are highly validated, a patient's answers can still be skewed by a bad mood, self-reporting bias, or personal life events that have nothing to do with their teeth. Second, the wide variety of clinical interventions makes it tough to isolate the exact amount of psychological change caused by one specific procedure. Comparing a fast, non-invasive composite bonding to a highly invasive full mouth rehabilitation is inherently difficult. Finally, while the search strategy was very systematic across four major databases, restricting the search to English and French articles published between 2015 and 2025 might have left out older data or studies published in other languages.

5.8. Recommendations for Future Practice and Research

Based on the findings in this review, it is completely obvious that aesthetic dental practice has to evolve. It is no longer enough to just be an excellent technician. A practitioner must also be a competent psychological manager. It is highly recommended that clinicians start adding validated screening tools, like shortened versions of the PIDAQ or specific BDD surveys, right into their standard intake forms. This establishes a psychological baseline before any irreversible enamel is ever touched.

For future academic research, scientists should focus on longer-term prospective studies that go beyond the five-year mark. We need to evaluate the long-term psychological stability of minimally invasive procedures (like resin infiltration and clear aligners) compared to traditional heavy prosthodontics. Also, given the massive impact of the digital age, more studies are urgently needed to figure out exactly how "social media fasting" might improve dental self-perception before irreversible aesthetic treatments are offered to young, vulnerable adults.

6. CONCLUSION

After a systematic review of the scientific literature, several clear conclusions can be drawn that directly answer the original objectives of this thesis:

6.1 Main Conclusion on Psychological Impact

Cosmetic dental treatments show a very strong and positive link to better patient self-esteem and Oral Health-Related Quality of Life (OHRQoL). The literature clearly validates the biopsychosocial model in dentistry. It proves that correcting aesthetic flaws is a genuine medical intervention that stops social avoidance and rebuilds self-worth.

6.2 Categorization of Interventions

How quickly and how long these psychological benefits last depends entirely on the type of treatment. Orthodontics creates highly stable social benefits over the long term, even if patients experience a temporary dip in mood at the start. Restorative dentistry (like bonding and veneers) gives patients an immediate and profound return of their identity. Tooth whitening provides a very fast psychological boost, but this effect is temporary and will fade if the teeth darken again.

6.3 Appraisal of Measurement Tools

To accurately diagnose patients and measure the success of aesthetic treatments, the Psychosocial Impact of Dental Aesthetics Questionnaire (PIDAQ) is clearly the gold standard. General health surveys, such as the OHIP-14, frequently hit a "floor effect". They simply lack the specific sensitivity needed to capture the quiet internal distress caused by aesthetic flaws.

6.4 Impact of Moderating Factors and Contraindications

The modern aesthetic patient is heavily influenced by their digital environment. Social media artificially destroys baseline self-confidence. This drives risky behaviors such as dental tourism, which frequently ends in biological failure and severe secondary psychological trauma. Additionally, Body Dysmorphic Disorder (BDD) has an alarming 10% to 15% prevalence in this demographic. BDD represents an absolute contraindication for aesthetic dentistry and requires a psychiatric referral rather than a clinical intervention.

6.5 Directions for Future Research

Significant gaps still exist in the literature regarding long-term outcomes. Future research needs to focus on prospective studies extending well beyond five years. These studies should evaluate the psychological stability of minimally invasive procedures compared to traditional prosthodontics. We also need data quantifying the direct impact of social media fasting prior to doing irreversible aesthetic treatments.

7. SUSTAINABILITY

This graduation project aligns perfectly with the United Nations Agenda 2030. It specifically looks at where healthcare meets responsible clinical practice. The findings from this review fit neatly into three main pillars of sustainability.

First, looking at **Social Sustainability (SDG 3: Good Health and Well-Being)**, this research confirms that aesthetic dental treatments are vital medical tools. They help restore mental health, reduce psychological distress like bullying, and encourage social inclusion. It also supports sustainable mental healthcare by pointing out that Body Dysmorphic Disorder (BDD) is a strict contraindication. This ensures vulnerable patients get the psychiatric help they need instead of undergoing harmful physical surgeries.

Second, in terms of **Economic Sustainability (SDG 12: Responsible Consumption)**, this thesis takes a hard look at the damaging trend of dental tourism. By warning against aggressive and unnecessary full mouth preparations that often fail prematurely, it supports an economically sustainable model. This approach stops patients and national healthcare systems from taking on the massive financial burden of re-doing failed cosmetic work.

Finally, this study champions **Environmental Sustainability**. It proves that Minimally Invasive Dentistry (like composite bonding or clear aligners) delivers incredibly high psychological satisfaction while saving natural tooth structure. These conservative methods consume less energy and drastically cut down on clinical waste compared to traditional, heavy prosthodontics.

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