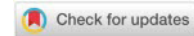


ANTI-AGING ESTHETIC TREATMENTS: PSYCHOLOGICAL EFFECTS, EXPECTATIONS, AND CLINICAL OUTCOMES

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Abstract: Anti-aging esthetic dermatology has become an increasingly important area of contemporary medical practice, primarily due to advances in minimally invasive procedures, improved technologies, and growing social interest in maintaining a youthful appearance. In addition to medical and technological progress, psychological and social factors play an increasingly important role in the decision-making process of patients seeking esthetic treatments. Expectations regarding improved self-confidence, social acceptance, and overall quality of life frequently influence the motivation to undergo anti-aging procedures.

The aim of this paper is to analyze psychological factors influencing patients' decisions to undergo anti-aging esthetic treatments and to examine the relationship between patient expectations, perceived outcomes, and overall satisfaction. The study is based on a narrative review of relevant scientific literature in the fields of dermatology, psychology, and medical aesthetics, with particular attention to recent studies addressing patient-reported outcomes, psychosocial determinants of treatment satisfaction, and quality-of-life indicators.

Available evidence indicates that patient satisfaction depends not only on objective clinical results but also on the alignment between expectations and achieved outcomes. Unrealistic expectations, inadequate communication, and insufficient understanding of treatment limitations may lead to dissatisfaction even when clinical results are technically successful. Conversely, effective physician-patient communication, clear explanation of treatment goals, and individualized therapeutic approaches significantly improve both subjective satisfaction and long-term treatment adherence.

Psychological determinants such as body image perception, self-esteem, aging anxiety, and social influence are consistently identified as important predictors of treatment demand and satisfaction. Ethical considerations and professional responsibility are also increasingly emphasized in contemporary esthetic dermatology, particularly in the context of managing patient expectations and ensuring realistic treatment planning.

In conclusion, understanding the psychological background of patients seeking anti-aging esthetic treatments is essential for achieving optimal clinical outcomes and maintaining high levels of patient satisfaction. A multidisciplinary approach that integrates dermatological expertise with psychological awareness represents a key component of safe, effective, and patient-centered anti-aging practice.

Keywords: anti-aging, esthetic dermatology, patient satisfaction, psychological factors, clinical outcomes

Field: Medical sciences and Health

1. INTRODUCTION

In recent decades, anti-aging esthetic dermatology has undergone rapid development due to technological progress, increasing life expectancy, and growing societal emphasis on physical appearance. Minimally invasive procedures such as botulinum toxin injections, dermal fillers, and laser therapies have become widely available and increasingly accepted among different age groups. As a result, the number of patients seeking esthetic treatments continues to grow worldwide.

While clinical effectiveness and safety remain essential aspects of esthetic procedures, psychological factors play an equally important role in patient decision-making and treatment satisfaction. Patients often seek esthetic treatments not only to improve physical appearance but also to enhance self-confidence, reduce anxiety related to aging, and improve social and professional interactions (Hemsworth, & Richmond, 2024; Brown et al., 2025).

Previous research indicates that patient satisfaction in esthetic dermatology is closely associated with realistic expectations, effective communication with healthcare providers, and perceived naturalness of treatment results. Conversely, unrealistic expectations or insufficient understanding of treatment limitations may lead to dissatisfaction, even when clinical outcomes are objectively successful (Aloui, 2024; Germani et al., 2025).

Understanding psychological determinants such as body image perception, self-esteem,

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aging anxiety, and social influences is therefore essential for clinicians working in the field of esthetic dermatology. Studies have shown that social appearance anxiety and the desire for social approval significantly influence acceptance of esthetic procedures (Demir et al., 2024), while exposure to social media content has been associated with increased interest in cosmetic interventions among younger populations (Salameh et al., 2025).

In addition to psychological and social determinants, contemporary research also emphasizes biological and clinical aspects of aging processes, including cellular senescence and tissue regeneration mechanisms, which form the scientific basis of modern anti-aging therapies (Zheng et al., 2024). Systematic reviews indicate that esthetic procedures may positively influence quality of life and psychological well-being, although the strength of evidence varies depending on methodology and patient selection (Hemsworth et al., 2024; Fisher et al., 2025). In parallel with technological and clinical advances, the global demand for minimally invasive anti-aging procedures has increased substantially over the past decade. This growth is associated not only with demographic changes and longer life expectancy but also with evolving perceptions of aging and personal well-being. Contemporary esthetic practice increasingly recognizes that patients seek treatments not merely to correct visible signs of aging, but also to maintain a sense of vitality, confidence, and social engagement. Consequently, modern anti-aging dermatology is gradually shifting from a predominantly corrective approach toward preventive and maintenance-oriented strategies, emphasizing long-term patient satisfaction and holistic treatment outcomes.

The aim of this paper is to analyze psychological factors influencing patient satisfaction in anti-aging esthetic dermatology and to examine the relationship between expectations, clinical outcomes, and perceived treatment success through a review of relevant scientific literature. In recent years, a noticeable shift has occurred in esthetic dermatology, with increasing emphasis on preventive and maintenance-oriented anti-aging treatments rather than solely corrective interventions. This trend reflects broader demographic changes, including population aging, prolonged professional activity, and heightened awareness of personal appearance across all age groups. As a result, anti-aging treatments are no longer perceived exclusively as cosmetic enhancements but increasingly as interventions associated with psychological well-being, self-perception, and quality of life. Understanding these evolving motivations further underscores the importance of integrating psychological assessment into routine esthetic practice, particularly when addressing long-term patient satisfaction and treatment adherence.

2. MATERIALS AND METHODS

This paper was designed as a narrative literature review aimed at analyzing psychological factors associated with patient expectations, satisfaction, and perceived outcomes in anti-aging esthetic dermatology. The review approach was selected because it allows integration of findings from clinical, psychological, and dermatological studies in order to provide a comprehensive understanding of the topic.

Relevant scientific articles were identified through searches of major academic databases, including PubMed, Scopus, and Google Scholar. Search terms included combinations of keywords such as “anti-aging,” “esthetic dermatology,” “patient satisfaction,” “psychological effects,” and “quality of life.” Similar search strategies have been used in previous literature reviews addressing patient expectations and outcomes in aesthetic medicine (Aloui, 2024).

Inclusion criteria consisted of peer-reviewed journal articles published primarily within the last five years, written in English, and addressing psychological, clinical, or social aspects of esthetic dermatology. Priority was given to systematic reviews, cross-sectional studies, and cohort studies focusing on patient-reported outcomes and treatment satisfaction. Recent cross-sectional research examining expectations of patients undergoing facial aesthetic treatments was considered particularly relevant for understanding motivational factors and satisfaction patterns (Germani et al., 2025).

Studies addressing broader determinants of treatment demand, including social and cultural influences, were also included in the analysis. Research investigating the role of social media exposure in shaping interest in cosmetic procedures was considered important in explaining contemporary trends in esthetic treatment demand (Salameh et al., 2025).

Additionally, clinical and biological studies were reviewed to provide context regarding the mechanisms and therapeutic approaches used in anti-aging medicine. Contemporary analyses of cellular senescence and treatment strategies contribute to understanding the scientific basis of anti-aging interventions (Zheng et al., 2024).

Data from selected studies were analyzed qualitatively, focusing on recurring themes such as patient expectations, psychological well-being, quality of life, and determinants of satisfaction. The synthesis of findings was performed descriptively, without statistical meta-analysis, due to differences in study designs,

populations, and outcome measures across the included literature. The narrative review design was considered appropriate for this study because it allows a broader interpretation of heterogeneous findings and facilitates the identification of common psychological and clinical patterns reported in the literature.

3. RESULTS AND DISCUSSION

Analysis of the selected literature indicates that psychological factors play a central role in patient decision-making and satisfaction in anti-aging esthetic dermatology. One of the most consistently reported determinants is the level and structure of patient expectations prior to treatment. Cross-sectional research demonstrates that expectations vary significantly depending on age, previous treatment experience, and individual perceptions of aging, which directly influences post-treatment satisfaction (Germani et al., 2025).

A recurrent finding across studies is that the alignment between expectations and clinical outcomes is a stronger predictor of satisfaction than objective clinical results alone. Systematic literature reviews have shown that unrealistic expectations, inadequate communication, and insufficient patient education represent major predictors of dissatisfaction in aesthetic medicine (Aloui, 2024).

Psychological well-being and quality of life represent another important dimension of treatment outcomes. Evidence suggests that minimally invasive esthetic procedures may contribute to improvements in self-esteem, perceived attractiveness, and social confidence, which are frequently reported by patients following treatment (Hemsworth et al., 2024). Prospective cohort studies evaluating patient-reported outcomes after facial procedures also indicate measurable improvements in psychological well-being and satisfaction with appearance (Nieuwenhuis et al., 2021).

Social and environmental influences further contribute to the growing demand for anti-aging treatments. Studies have shown that social appearance anxiety and the desire for social approval significantly influence the acceptance of esthetic procedures, particularly among younger and professionally active populations (Demir et al., 2024). Similarly, exposure to idealized beauty standards on social media platforms has been associated with increased interest in cosmetic facial injections and other minimally invasive procedures (Salameh et al., 2025).

In addition to psychological and social factors, biological aspects of aging remain an important component of the broader context of anti-aging medicine. Research on cellular senescence and tissue aging mechanisms provides insight into the scientific rationale behind modern therapeutic approaches, including regenerative and minimally invasive procedures (Zheng et al., 2024). Understanding these mechanisms contributes to a more realistic interpretation of treatment possibilities and limitations, which is essential for appropriate patient counseling.

Clinical communication has also been identified as a key factor influencing patient satisfaction and long-term treatment outcomes. Studies in esthetic dermatology emphasize that structured consultations, realistic goal-setting, and individualized treatment planning significantly improve both subjective satisfaction and therapeutic adherence (Sobanko, Taglienti, & Wilson, 2018).

Contemporary systematic reviews indicate that multidisciplinary approaches integrating dermatological, psychological, and communication-based strategies provide the most favorable outcomes. Such approaches not only improve patient satisfaction but also reduce the risk of dissatisfaction and unnecessary procedures, contributing to safer and more ethically responsible practice in esthetic medicine (Fedorchenko, 2024).

Overall, the available evidence suggests that successful anti-aging esthetic treatment depends on the interaction of clinical effectiveness, psychological determinants, communication quality, and realistic expectation management. Recognizing this multidimensional nature of treatment outcomes represents a critical step toward improving patient-centered care in modern esthetic dermatology. In this context, it is increasingly recognized that patient satisfaction should be evaluated not only immediately after treatment but also over longer follow-up periods. Long-term perception of treatment outcomes may change as patients adapt to their appearance, social circumstances evolve, or expectations shift over time. Therefore, understanding satisfaction as a dynamic rather than static outcome provides a more realistic framework for evaluating the effectiveness of anti-aging interventions and highlights the importance of continued physician–patient communication during follow-up.

Further analysis of recent literature highlights that patient expectations are not uniform and frequently vary according to age, previous treatment experience, and cultural background. Younger adults often seek esthetic procedures for preventive and social reasons, aiming to maintain a youthful appearance and remain socially competitive, whereas older patients more commonly pursue restorative outcomes, such as reducing visible signs of aging and improving perceived vitality (Germani et al., 2025). Large-

scale international surveys also indicate that perceptions of aging itself significantly influence treatment motivation, with many older individuals associating esthetic treatments with improved self-confidence and emotional well-being (Brown et al., 2025).

Another important contemporary factor influencing treatment demand is the widespread exposure to social media, where idealized representations of youth and beauty are frequently encountered. Continuous exposure to such content may contribute to increased awareness of appearance-related concerns and a stronger interest in minimally invasive procedures. Research has shown that frequent social media users demonstrate higher levels of social appearance anxiety and a greater willingness to undergo cosmetic facial treatments (Salameh et al., 2025). For this reason, clinicians are increasingly encouraged to address media-driven expectations during consultations in order to help patients develop realistic treatment goals.

In addition to external influences, the psychological benefits associated with esthetic treatments remain an important area of investigation. Multiple studies suggest that minimally invasive procedures can lead to measurable improvements in self-esteem, perceived attractiveness, and social confidence, which may contribute to overall psychological well-being and quality of life (Hemsworth et al., 2024). Clinical outcome studies further confirm that even relatively minor facial interventions may positively influence self-perception and satisfaction with appearance, particularly when expectations are realistic and communication with the physician is effective (Nieuwenhuis et al., 2021).

Ethical considerations and communication strategies represent another essential component of successful treatment outcomes. Clear explanation of treatment possibilities, potential risks, and realistic results has been consistently associated with higher levels of patient satisfaction and better long-term adherence to recommended follow-up care (Sobanko et al., 2018). At the same time, clinicians must carefully identify unrealistic expectations and avoid over-promising results, ensuring that treatment planning remains aligned with patient safety and professional ethical standards (Fedorchenko, 2024).

Taken together, these findings reinforce the view that patient satisfaction in anti-aging esthetic dermatology is shaped by a complex interaction of psychological readiness, social influences, biological factors, and the quality of physician–patient communication. Understanding these relationships is essential for achieving optimal clinical and psychosocial outcomes. To summarize the key psychological determinants identified in the reviewed literature, Table 1 presents the most relevant factors associated with patient satisfaction in anti-aging treatments.

Table 1. Key Psychological Determinants of Patient Satisfaction in Anti-Aging Treatments

Psychological Factor	Description	Evidence from Recent Studies
Body image perception	Self-evaluation of physical appearance and perceived attractiveness	Germani et al., 2025
Self-esteem	General sense of confidence and personal worth	Hemsworth et al., 2024
Social appearance anxiety	Concern about social judgment related to physical appearance	Demir et al., 2024
Aging anxiety	Psychological concern related to visible signs of aging	Brown et al., 2025
Social media exposure	Influence of online beauty standards and trends	Salameh et al., 2025

Source: Author's synthesis based on cited literature.

The factors presented in Table 1 illustrate the multidimensional nature of patient satisfaction in anti-aging esthetic treatments and emphasize the importance of integrating psychological assessment into clinical practice. Beyond individual psychological traits, ethical responsibility and professional judgment play a crucial role in shaping treatment outcomes in anti-aging esthetic dermatology. The literature increasingly emphasizes that clinicians must actively assess patients' motivations, emotional readiness, and expectation frameworks prior to initiating treatment. Failure to address unrealistic or externally driven expectations may result in dissatisfaction, repeated procedures, or psychological distress, even when clinical results are objectively appropriate. Consequently, incorporating structured psychological awareness into clinical consultations is essential for maintaining ethical standards and promoting sustainable, patient-centered care.

4. CONCLUSION

Anti-aging esthetic dermatology represents a rapidly developing field in which clinical outcomes are closely intertwined with psychological, social, and biological factors. The findings presented in this review

indicate that patient expectations, perception of aging, and psychological well-being play a decisive role in determining satisfaction with esthetic treatments.

The analyzed literature consistently demonstrates that realistic expectations and effective physician–patient communication are among the most important predictors of positive treatment outcomes. Patients who receive clear information about treatment possibilities, limitations, and expected results tend to report higher levels of satisfaction and psychological benefit after procedures. This emphasizes that the success of anti-aging interventions cannot be evaluated solely through objective clinical parameters, but must also include subjective and psychosocial dimensions of treatment outcomes.

Psychological determinants such as self-esteem, body image perception, social appearance anxiety, and exposure to social media significantly influence both the decision to undergo treatment and the perception of results. These factors highlight the importance of a patient-centered approach in esthetic dermatology, where clinical expertise is complemented by an understanding of psychosocial aspects and individual patient motivations.

Advances in the understanding of biological mechanisms of aging and the development of minimally invasive therapeutic techniques continue to improve safety and effectiveness in anti-aging medicine. At the same time, the growing accessibility of esthetic procedures requires increased professional responsibility, careful patient selection, and individualized treatment planning in order to prevent unrealistic expectations, overtreatment, and potential psychological dissatisfaction.

Successful anti-aging esthetic treatment therefore depends on a multidisciplinary approach that integrates dermatological knowledge, psychological assessment, and effective communication. Such an approach contributes not only to improved clinical outcomes but also to enhanced patient satisfaction and long-term quality of life. Practical implications for clinical practice include structured patient consultations, assessment of psychological readiness, and individualized treatment planning tailored to patient expectations and clinical indications. Incorporating these strategies may also reduce the frequency of repeated or unnecessary procedures and improve long-term therapeutic adherence.

Another important consideration is the role of continuous professional education and the adoption of evidence-based guidelines in esthetic dermatology. As the field evolves, clinicians are increasingly required to balance patient expectations, technological possibilities, and ethical standards. Strengthening interdisciplinary collaboration between dermatologists, psychologists, and other healthcare professionals may further enhance the quality and safety of anti-aging treatments.

Future research should focus on standardized methods for evaluating psychological outcomes in esthetic dermatology, as well as on developing multidisciplinary protocols that integrate dermatological, psychological, and communication-based approaches in routine clinical practice. Longitudinal studies examining long-term psychological and quality-of-life outcomes following minimally invasive procedures would be particularly valuable for establishing clearer clinical guidelines and improving patient selection criteria.

Ultimately, integrating clinical expertise with psychological insight and ethical responsibility represents a key direction for the future development of esthetic dermatology, enabling safer procedures, more realistic treatment planning, and improved long-term patient satisfaction.

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