

# Organ transplantation and body image

## Abstract

Body image concerns are a significant and multifaceted psychological issue in organ transplantation, affecting both recipients and living donors across organ types. Research shows wide variability in how body image dissatisfaction and organ integration difficulties manifest, partly due to the lack of validated assessment instruments specifically designed for transplant populations. Kidney transplantation is the most extensively studied area, with evidence linking body image dissatisfaction to lower quality of life, impaired social functioning, and increased psychological distress. Longitudinal findings suggest that lower body image integrity may even predict graft rejection. Qualitative studies further reveal themes of altered self-perception, social and relational strain, and difficulties incorporating the transplanted organ into one's identity. Liver transplant research highlights demographic influences: women, younger patients, and individuals with lower income show higher levels of body image concern, which correlate independently with anxiety, depression, and reduced quality of life. Heart transplant recipients generally adapt better than patients receiving mechanical cardiac devices, although a subset of 15–20% experiences significant distress. Facial transplantation represents the most psychologically complex scenario due to the face's central role in identity, generating anxiety, shame, communication difficulties, and body image disruption. Among living donors, particularly liver donors, lower body image and cosmetic satisfaction are associated with younger age, non-white ethnicity, perioperative complications, and concerns about recipients' post-transplant behaviors. Across all organ types, body image outcomes are influenced by medical factors, demographic characteristics, surgical approaches, and time since transplantation. Body image concerns correlate with quality of life and may influence clinical outcomes, underscoring the need for systematic assessment, targeted psychological support, and improved measurement tools in transplant care.

**Keywords:** organ transplantation, organ donor, organ recipient, psychology, organ rejection

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## Introduction

Body image concerns represent a complex and multifaceted psychological dimension in organ transplantation that significantly impacts both recipients and donors across all organ types, with far-reaching implications for mental health, quality of life, and clinical outcomes.

The relationship between organ transplantation and body image has been recognized since the early days of transplantation medicine.<sup>1</sup> Contemporary research identifies body image and organ integration concerns as main themes in psychological adaptation to transplantation, though their prevalence, severity, description, and impact vary wildly across different contexts. A critical limitation in the field is the lack of validated instruments specifically designed to measure body image or organ integration in transplant patients.<sup>2</sup>

## Comprehensive findings by organ type

Kidney transplantation - most extensively studied: kidney transplantation research provides the most robust evidence base for body image concerns. A cross-sectional study of 45 kidney transplant recipients found significant associations between higher levels of body-image dissatisfaction and decreased quality of life across multiple dimensions, including role emotional functioning, physical pain management, general health perceptions, and social functioning, alongside increased psychological distress.<sup>3</sup>

Comparative research reveals that kidney transplant recipients report lower levels of quality of life and higher levels of psychological distress compared to healthy matched peers, while interestingly showing no difference in body-image dissatisfaction levels

between groups. However, kidney transplant recipients experienced significantly higher levels of body identification than their healthy counterparts, and the transplantation condition has a moderating effect on the association between body-image dissatisfaction and psychological distress.<sup>4</sup>

The most clinically significant finding comes from a 3-year longitudinal study of 53 kidney transplant patients, which demonstrated that lower levels of body image integrity, along with reduced posttraumatic growth and higher pre-discharge serum creatinine levels, were significant predictors of graft rejection.<sup>5</sup> This suggests that body image integrity might contribute directly to better health outcomes in organ transplantation.

Qualitative research with 16 female kidney transplant patients identified six main themes and 15 subthemes related to body image and self-esteem, including body acceptance, changes in body image, deterioration of social relationships, changes in self-esteem, spousal concerns, and organ perceptions. The study revealed that changes in body image and self-esteem after kidney transplantation caused negative feelings regarding sexual life, relationships, and social life, along with feelings of unfamiliarity with the transplanted organ.<sup>6</sup>

Liver transplantation - gender and demographic influences: a comprehensive cross-sectional study of 177 liver transplant recipients using validated instruments to assess body image, anxiety, depression, and quality of life revealed significant correlations between higher body image concerns and elevated levels of anxiety and depression. The research identified specific demographic risk factors: body image concerns were more elevated in females, younger patients, and patients with lower income levels.

Importantly, the underlying cause of liver disease influenced body image outcomes, with patients who had chronic liver disease showing more body image concerns than those who received liver transplantation for acute liver failure. Specific body image concerns correlated independently with quality of life scores, indicating that these concerns have measurable impacts beyond general psychological distress.<sup>7</sup>

Heart transplantation - comparative adaptation success: a cross-sectional study comparing 57 heart transplant patients with 47 subjects who received mechanical aortic valve replacement provided unique insights into organ integration. While general body image scores did not differ between groups, heart transplant patients scored higher on specific questions regarding integration of the organ compared to mechanical device recipients.

Interestingly, patients with mechanical aortic valve replacement showed more affective disturbance and lower mental quality of life than heart transplant subjects, suggesting that heart transplant patients may actually adapt better psychologically. However, 17% of all patients showed psychological distress, and the research corroborated that 15-20% of patients experience stronger mental distress, including body image problems, requiring identification and treatment by professionals.<sup>8</sup>

Facial transplantation - unique psychological challenges: facial transplantation represents the most psychologically complex form of transplantation regarding body image, given the face's central role in identity and social interaction. The psychological impact includes altered body image, anxiety, shame, depression, communication difficulties, and behavioral avoidance. The research emphasizes that pre-operative preparation must include thorough psychological preparation for both patients and their families, with detailed management plans for the immediate post-operative period and the first post-operative year.<sup>9</sup>

Living donor perspectives - an understudied population: research on 142 adults who underwent right lobe living donor hepatectomy revealed that liver donors reported significantly lower body image and lower cosmetic satisfaction with their surgical scars compared to published data on kidney donors who underwent open nephrectomy. Several risk factors were identified: donors' pre-donation health concerns and perceptions that recipients were engaging in risky behavior post-transplant were associated with lower post-donation body image scores.

Demographic factors also played important roles, with younger age and non-white ethnicity associated with lower cosmetic scores after donation. The clinical significance of these findings was demonstrated by the fact that donors with lower perceptions of body image and cosmesis reported lower physical and mental health scores and significantly greater interference in both spousal relationships and sexual life. Younger donors and those with perioperative complications were more likely to report decreased confidence after donation.<sup>10</sup>

Comprehensive factors influencing body image outcomes: research has identified multiple interconnected factors that influence body image satisfaction in transplant recipients. For organ recipients, satisfaction depends on the specific organ transplanted, gender, pre-transplant medical illness severity and duration, time elapsed since transplantation, and the post-transplant medication regimen. For organ donors, body image is significantly influenced by the type and extent of surgical incision required.

A particularly concerning finding across studies is that complete or partial denial of the graft is frequently reported among recipients.<sup>2</sup>

This psychological rejection of the transplanted organ can manifest in various ways and may have implications for long-term adaptation and potentially medical outcomes.

Clinical and quality of life implications: the relationship between body image and clinical outcomes appears to be bidirectional and complex. Affective symptoms correlate negatively with body image scores across organ types.<sup>8</sup> The research demonstrates that body image concerns have independent correlations with quality of life scores, meaning they contribute to patient outcomes beyond their association with general psychological distress.<sup>7</sup>

However, there remains little direct evidence that body image or organ integration concerns impact medical outcomes after transplantation or organ donation, with the notable exception of the kidney transplant study showing body image integrity as a predictor of graft rejection.

Current limitations and future directions: the field faces several significant methodological and clinical challenges. There is a notable lack of validated instruments specifically designed to measure body image or organ integration in transplant patients. This limitation makes it difficult to compare findings across studies and develop standardized clinical assessments.

Body image is increasingly recognized as becoming a significant component of measuring quality of life in transplant patients. This recognition suggests that body image concerns may become important factors in clinical decision-making, including decisions about whether and when to pursue transplantation for non-life-threatening conditions (such as face transplantation), choices about surgical approach and incision type, and selection of immunosuppressant regimens.

Clinical recommendations and professional implications: for mental health professionals working with transplant populations, understanding the complexities of body image and organ integration is essential for enhancing the assistance provided before and after transplant or donation.<sup>2</sup> The research strongly suggests that body image concerns warrant systematic attention and should be routinely screened, with treatment provided for those who demonstrate high levels of dissatisfaction.<sup>3</sup>

The identification of specific risk factors - including female gender, younger age, lower income, chronic versus acute pre-transplant conditions, and certain surgical approaches - provides clinicians with tools for identifying patients who may be at higher risk for body image difficulties.<sup>7</sup> These patients may require closer follow-up and additional psychiatric services during the transplantation process.<sup>10</sup>

The research collectively demonstrates that body image in organ transplantation is not merely a cosmetic concern but a complex psychological factor that intersects with identity, social functioning, intimate relationships, and potentially clinical outcomes, warranting serious attention from the entire transplant care team.

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## Conflicts of interest

No conflict of interest.

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