

Predictors of Dysphoria, Gender Congruence, and Life Satisfaction: Outcomes of Chest Masculinization Surgery

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Introduction

- **Patient-reported outcome measures (PROMs)** are essential for evaluating quality of life, satisfaction, and psychosocial wellbeing
- **Dysphoria, gender congruence, and life satisfaction:**
 - Key outcomes for gender-affirming surgery
 - Measured via PROMs
- **Chest-masculinization surgery (CMS):** the most frequently performed gender-affirming surgery
- Understanding **variables that may influence CMS outcomes** can aid in pre-operative counseling and planning

Objectives

To investigate the association of age, race, BMI, testosterone use, smoking history, and experience of scar revision with patient-reported outcomes of CMS.

Methods

- **Design:** single-center, cross-sectional study of patients who underwent CMS
- **Measurement tools:** three validated patient-reported outcome measures (PROMs) were administered electronically postoperatively
 - Gender Congruence and Life Satisfaction (GCLS) scale (range 38-190)
 - Transgender Congruence Scale (TCS) (range 12-60)
 - Chest Dysphoria Measure (CDM) (range 0-51)
- **Timeline:** December 2017 - May 2024
- **Statistics:** bivariate and multivariable linear regression were conducted
 - Covariates: age, race, body mas index (BMI), testosterone use, smoking history, scar revision

Results

- **Response rate:** 46% (n = 46/100)
- **Average time between surgery and survey completion** (standard deviation, range): 2.5 years (1.8, 0.5-6.1)
- **Age**, significant associations (age as a continuous variable):
 - Older age: lower total GCLS scores (p=0.03), lower GCLS gender congruence subscale scores (p=0.02)
 - Older age: lower total TCS scores (p=0.03), lower TCS appearance congruence subscale score (p=0.02)
- **Body mass index (BMI)**, significant associations (BMI as a continuous variable):
 - Higher BMI: greater gender-related distress (p=0.01) [GCLS]
 - Higher BMI: lower satisfaction with health overall (p=0.04) [GCLS]
- **Testosterone use**, significant associations:
 - Testosterone use: lower frequency of being gendered as female (p=0.004) [CDM]
 - Testosterone use: less difficulty with physical intimacy (p=0.01) [CDM]
- **History of scar revision**, significant associations:
 - Scar revision: greater intimacy-related difficulty (p=0.01) [CDM]
 - Scar revision: lower satisfaction with emotional relationships (p=0.03) [GCLS]
 - Scar revision: greater discomfort with others' perception of their gender (p=0.01) [GCLS]

Race, Ethnicity	n	%
White	37	80.4
Asian	4	8.7
Black	3	6.5
Other	2	4.3
Hispanic	3	6.5
Demographic	Mean	Standard Deviation
Age	27.4	7.5
BMI	28.5	7.7
Demographic	n	%
Transgender man	27	58.7
Nonbinary	19	41.3
Testosterone use	14.1	1.6

Table 1. Demographics
Demographics at the time of surgery, including race, age, body mass index (BMI), gender identity, and testosterone use.

Scale	Description	Possible score range	Percent of possible score	Mean score	Standard deviation
Gender Congruence and Life Satisfaction (GCLS) scale	Higher scores indicate greater gender congruence and higher life satisfaction	38-190	80.7%	153.3	17.6
Transgender Congruence Scale (TCS)	Higher scores indicate greater gender congruence	12-60	86.5%	51.9	6.9
Chest Dysphoria Measure (CDM)	Higher scores indicate greater chest dysphoria, lower indicates less chest dysphoria	0-51	8.8%	4.5	3.9

Table 2. Total patient-reported outcome measure (PROM) scores. PROMs are described and possible total score ranges are listed, ranging from the lowest possible score to highest possible score. Percent of maximum possible score, mean score, and standard deviation describe outcomes from this study.

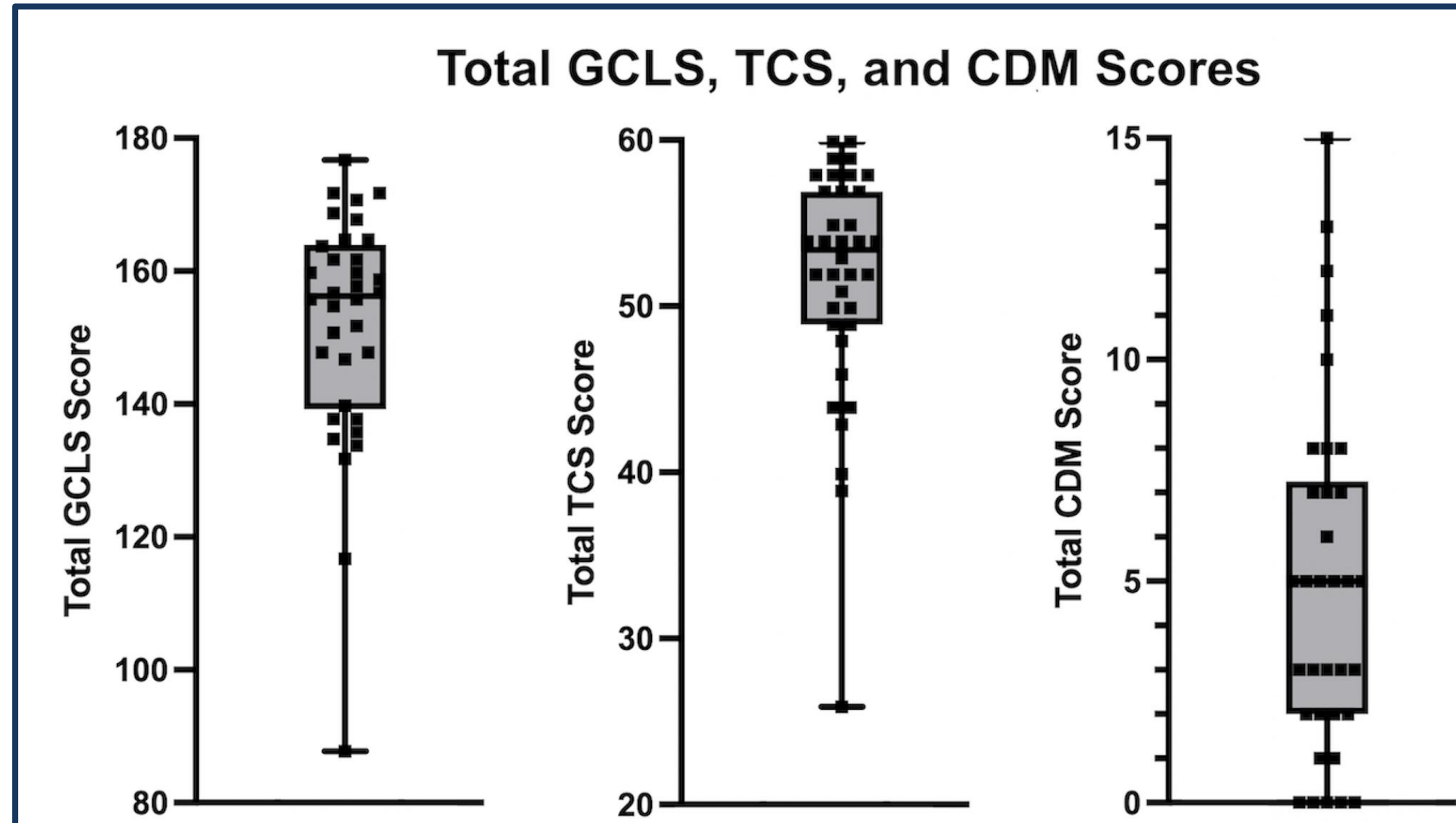


Figure 1. Total patient-reported outcome measure (PROM) scores
Box-and-whisker plots show median, interquartile range, and range, with individual data points overlaid. Higher GCLS scores indicate greater gender congruence and life satisfaction, higher TCS scores indicate greater congruence and gender identity acceptance, and lower CDM scores indicate less chest dysphoria.

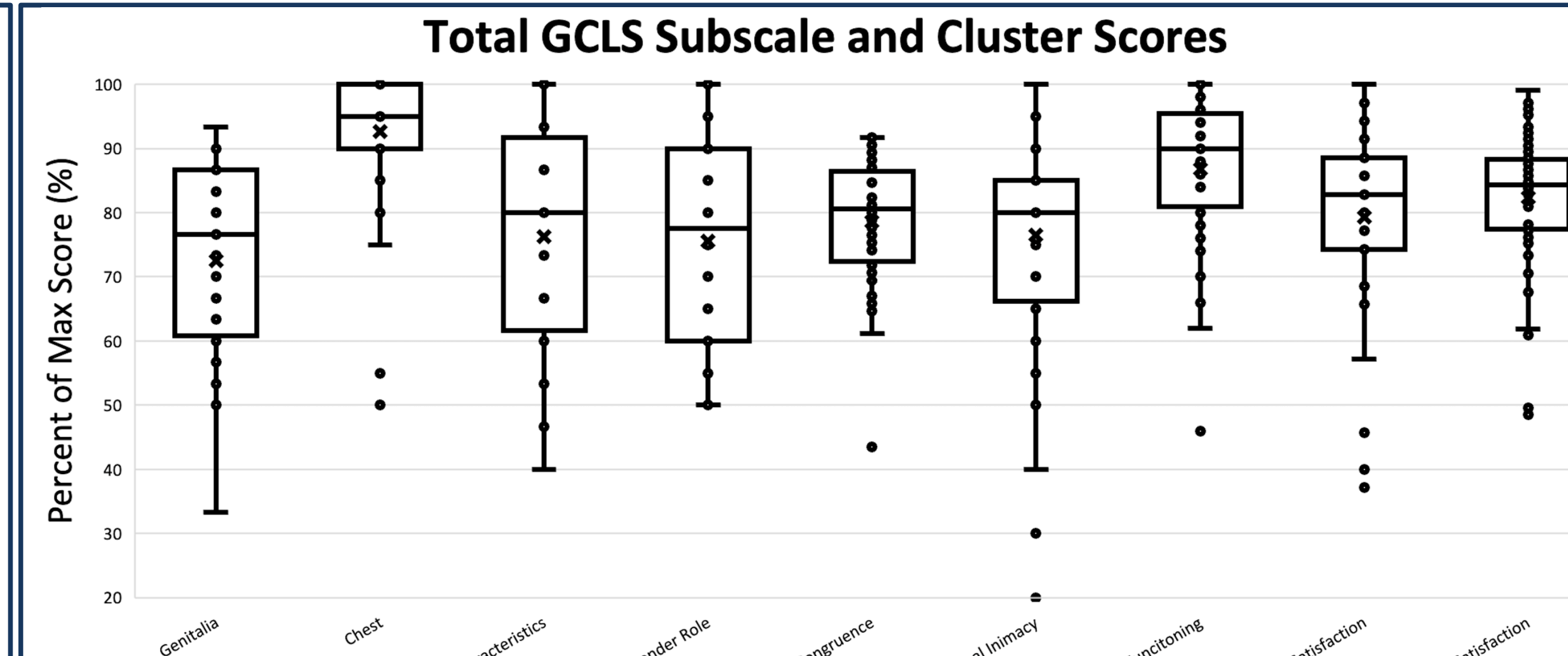


Figure 2. Gender Congruence and Life Satisfaction (GCLS) subscale and cluster scores
Boxplots depict GCLS subscale and cluster scores expressed as a percentage of the maximum possible score across domains. Boxes represent the interquartile range with median values indicated and whiskers extend to 1.5 times the interquartile range, with individual data points overlaid.

Subscale	Description	Possible score range	Percent of possible score	Mean score	Standard deviation
Gender Congruence and Life Satisfaction (GCLS) subscales					
Genitalia	Distress and incongruence related to the genitals. Higher scores indicate greater congruence and less distress.	6-30	72.5%	21.8	4.5
Chest	Distress and incongruence related to the genitals. Higher scores indicate greater congruence and less distress.	4-20	92.6%	18.5	2.2
Other secondary sex characteristics	Distress and incongruence related to secondary sex characteristics other than chest. Higher scores indicate greater congruence.	3-15	76.2%	11.4	2.6
Social gender role recognition	Degree to which participants were satisfied with how others perceived their gender role. Higher scores indicate greater satisfaction.	4-20	75.6%	15.1	3.1
Cluster 1: Gender Congruence	Summation of the genitalia, chest, secondary sex characteristics, and social gender role subscales. Higher scores indicate greater gender congruence.	17-85	78.6%	66.8	8.2
Physical and emotional intimacy	Satisfaction with their physical and emotional relationships. Higher scores indicate greater satisfaction.	4-20	76.5%	15.3	3.4
Psychological functioning	Psychological functioning associated with gender (in)congruence. Higher scores indicate better psychological functioning.	10-50	86.8%	43.4	5.6
Life satisfaction	general life satisfaction (not related to gender incongruence. Higher scores indicate greater	7-35	79.4%	27.8	4.8
Cluster 2: Wellbeing and Satisfaction	Summation of the intimacy, psychological functioning, and life satisfaction subscales. Higher scores indicate greater wellbeing and satisfaction.	21-105	82.4%	86.5	11.7
Transgender Congruence Scale (TCS)					
Appearance Congruence	Degree to which participants felt that their external appearance represented their gender identity. Higher scores indicate greater congruence.	9-45	84.0%	37.8	6.6
Gender Identity Acceptance	Degree to which participants have accepted their gender identity. Higher scores indicate greater acceptance.	3-15	93.8%	14.1	1.6

Table 3. Gender Congruence and Life Satisfaction Subscale Scores
Subscales are described and possible subscale score ranges are listed, ranging from the lowest possible score to the highest for each. Percent of possible score, mean score, and standard deviation describe outcomes from this study.

Conclusions

- Overall, **chest dysphoria was low** and **gender congruence and life satisfaction were high** post-chest masculinization surgery (CMS)
- **Older age, higher BMI, and scar revision** may be **risk factors** for diminished psychosocial outcomes following CMS, while **testosterone** use may be **protective**
- Identifying predictors can help guide preoperative counseling, expectation setting, and targeted postoperative support to optimize outcomes

