Society of Medical Education & Research

2024, Volume 4, Page No: 276-289
ISSN: 3108-5059

Asian Journal of Ethics in Health and Medicine

Reframing Surgical Readiness: Promoting Autonomy in Phalloplasty and Metoidioplasty Preparation

Leo L. Rutherford[1*], Linden Jennings[1], Nathan J. Lachowsky[1], Elijah R. Castle[2], Noah Adams[3], Logan Berrian[4], Ayden Scheim[5], Aaron Devor[6]

[1]School of Public Health and Social Policy, Faculty of Human and Social Development, University of Victoria, Victoria, BC, Canada.
[2]Hunter Alliance for Research and Translation (HART), Hunter College of the City University of New York, New York, NY, USA.
[3]Ontario Institute of Studies in Education, University of Toronto, Toronto, ON, Canada.
[4]The Buncke Clinic, San Francisco, CA, USA.
[5]Dornsife School of Public Health, Drexel University, Philadelphia, PA, USA.
[6]Chair in Transgender Studies, University of Victoria, Victoria, BC, Canada.

***E-mail** ✉ leorutherford@uvic.ca

Abstract

Many transgender and nonbinary individuals choose to undergo phalloplasty and/or metoidioplasty during their medical transition. In different surgical specialties, a wide range of supportive resources is commonly provided to help patients prepare for procedures. These typically include educational materials, workshops, peer support networks, and recommended lifestyle modifications. For gender-affirming surgeries in particular, patients are required to complete assessments that evaluate their readiness for the operation and offer guidance to help them become fully prepared when necessary. However, relatively few studies have explored which specific resources actually help patients feel ready for phalloplasty or metoidioplasty, or how the assessment process and available supports can better promote patient autonomy. Although respect for patient autonomy remains a fundamental principle of ethical medical care, earlier research on pre-surgical evaluations for gender-affirming procedures has largely focused on selecting the most suitable surgical candidates rather than on individual patient needs and on supporting autonomous decision-making. The present study aimed to address this research gap by examining data from the PROGRESS (Patient-Reported Outcomes of Genital Reconstruction and Experiences of Surgical Satisfaction) study. This was a cross-sectional, community-based survey conducted among trans and nonbinary adults residing in the United States and Canada who had received one or more of these genital reconstruction surgeries. The findings indicated that the large majority of participants (86%, n = 186) reported feeling prepared for their surgery. Nevertheless, over half of the sample (53%, n = 105) indicated that referral letter assessments were not helpful to them. In contrast, peer support—particularly online resources and blogs—was rated as highly valuable, along with direct surgical consultations. Multivariable logistic regression analysis revealed that higher levels of perceived preparedness were associated with identifying as queer (including gay, bisexual, and pansexual orientations, in comparison with identifying as straight) and with perceiving the overall assessment process as useful rather than unhelpful. The specific assessment type used showed no significant relationship with preparedness levels. This suggests that the most effective preparation strategies are likely to vary considerably between individuals. Healthcare providers who work with patients preparing for these surgeries should either develop new resources or adapt existing ones to help individuals better recognize their personal preparation needs and successfully achieve readiness. The data from this study support the use of assessments that prioritize surgical care planning over evaluations focused on measuring the degree of gender dysphoria. Additional longitudinal research would be valuable for determining which assessment approaches are most effective for supporting patients before these procedures. Ultimately, assessments should confirm that patients are properly equipped to undergo and recover from surgery through a comprehensive informed consent process.

Keywords: Transgender, Readiness, Preparedness, Gender-affirming surgery, Informed consent, Patient autonomy

Access this article online https://smerpub.com/

Received: 26 January 2024; **Accepted:** 11 March 2024

How to cite this article: Rutherford LL, Jennings L, Lachowsky NJ, Castle ER, Adams N, Berrian L, et al. Reframing Surgical Readiness: Promoting Autonomy in Phalloplasty and Metoidioplasty Preparation . Asian J Ethics Health Med. 2024;4:276-89. https://doi.org/10.51847/BnmrZkaVpr

Introduction

For many transgender and nonbinary individuals (hereafter referred to as "trans"), gender-affirming surgery represents a significant component of their transition journey. These procedures may involve chest

surgery (such as top surgery/mastectomy or breast augmentation), reproductive organ surgeries (for example, hysterectomy/oophorectomy or orchiectomy), and genital surgeries (including metoidioplasty, phalloplasty, and vaginoplasty). Among trans people assigned female at birth, the primary genital surgery options are phalloplasty and metoidioplasty. Not every trans person seeks gender-affirming genital procedures [1], and not all who desire them can obtain access [2]; the current discussion, however, centers on those who do pursue such surgeries.

Phalloplasty was initially developed to reconstruct a penis following trauma, cancer, or illness, and has subsequently been adapted to construct a penis for trans individuals using tissue flaps from non-genital sites [3, 4]. It has been characterized as "a modular set of procedures that can be combined, mixed, and matched to meet the needs of each patient" [5]. This surgery, with or without supplementary interventions, can be performed using multiple techniques, many of which have evolved over time and across geographic locations. At present, radial forearm free flap (RFF) phalloplasty remains the most frequently performed variant worldwide [6]. However, alternatives such as anterolateral thigh flap (ALT) and abdominal flap phalloplasty are also conducted in various settings.

Metoidioplasty represents an adaptation of techniques originally used to correct hypospadias [7], a congenital condition in which the urethral opening is positioned away from the tip of the penis. In trans patients, the procedure employs the enlarged clitoris that develops as a result of testosterone treatment [8]. It involves releasing the clitoral ligaments [9] and incorporating labial tissue to enhance the size and projection of the resulting phallus or penis. In contrast to phalloplasty, metoidioplasty does not require a donor site and therefore avoids significant external scarring [6].

Patient preparedness initiatives vary widely across surgical specialties, yet no single optimal preparation program has been established in most disciplines, nor has a universally accepted best practice [10]. In certain surgical areas, multiple strategies have been shown to influence how prepared patients feel [11]. Planning for postoperative care and recovery is another key element incorporated into some preparation programs [12]. Available evidence indicates that stronger patient preparedness can contribute to improved surgical results, enhanced postoperative quality of life [13], and reduced complication rates. Conversely, feeling unprepared has been linked to greater postoperative dissatisfaction [14].

Relatively little published research describes how patients prepare for phalloplasty and/or metoidioplasty. One qualitative investigation found that participants devoted considerable time and effort to preparation and emphasized the value of strong relationships with their healthcare team during the preoperative period [15]. Additional studies suggest that social media platforms often serve as valuable sources of information, enabling patients to prepare for surgery or seek guidance afterward. One review noted that individuals frequently posted questions about scarring, wound management, medical supplies, recovery timelines, and cosmetic outcomes [16]. Data also show that, among various strategies patients employ before and after surgery to improve their genital-related experiences, peer and social support consistently ranks among the most beneficial approaches both preoperatively and postoperatively [17].

When preparing for phalloplasty or metoidioplasty, patients typically collaborate with a surgeon or surgical team that follows the World Professional Association for Transgender Health (WPATH) Standards of Care (SOC) guidelines for pre-surgical evaluations [18]. According to these standards, patients must complete one assessment conducted outside their primary surgical team—commonly known as a "referral letter" [19]—performed by a qualified healthcare provider before proceeding with surgery [18]. Earlier versions of the SOC mandated two referral letters for genital procedures [18, 20]. For many individuals, these letters are subsequently submitted to the surgical team and/or insurance provider to obtain surgical clearance and insurance authorization [18]. Such assessments are generally carried out by mental health professionals, social workers, and/or medical practitioners [18, 21]. Importantly, these evaluations often do not address practical preparation topics such as hair removal (particularly before phalloplasty), physical conditioning, nutrition, aftercare arrangements, or expected physical and psychological changes. While some surgical teams and support services supply educational materials covering these areas [22], the WPATH SOC does not require them [18]. The depth and scope of assessments remain inconsistent, depending on the assessor, the specific procedure, the instruments employed, and the intended objectives of the evaluation [19]. This variability aligns with guidance in WPATH SOC version 8, which states that "no single assessment process will fit every person or every situation" [18].

Existing evidence further suggests that referral letters often serve as obstacles to care rather than supportive tools [19].

Beyond referral letters, certain surgeons and surgical teams incorporate patient education into readiness or preparedness documentation before surgery [22, 23]. Like the assessments themselves, the content and delivery of this education are not standardized and are not mandated by the WPATH SOC [18]; provision therefore differs substantially by provider. Moreover, some surgical practices have eliminated the requirement for letters of support or formal assessments, unless mandated by the patient's insurance carrier. These teams instead emphasize thorough patient education and a robust informed consent process [24]. Increasingly, providers are acknowledging the value of more extensive preoperative education and planning for phalloplasty and metoidioplasty, and have reframed their readiness evaluations around the concept of "surgical care planning" [25]. This approach generally still includes obtaining a letter of support consistent with WPATH SOC recommendations, while also delivering broader educational resources and support aligned with the various elements of preparedness outlined earlier [25].

In addition to the lack of a standardized assessment framework, there is limited guidance on the appropriate qualifications for assessors. Per the WPATH SOC, evaluators are not required to be mental health specialists; they need only hold a Master's-level degree and possess adequate knowledge to conduct a competent evaluation [18]. However, the terms "sufficient" and "competent" are not clearly defined within the standards. Because provider expertise levels vary widely, it is challenging to assess the true value and validity of these mandatory evaluations. When assessors lack detailed knowledge of procedures, assessments may fall short of helping patients make well-informed decisions about their own bodies. Should this decision-making process be inadequate, patients' ability to choose what is best for themselves is undermined, thereby compromising patient autonomy—an issue examined in greater detail below.

Respect for patient autonomy constitutes one of the core principles of biomedical ethics, as articulated by Beauchamp and Childress [26]. It emphasizes the importance of enabling individuals to make choices and pursue actions that reflect their personal beliefs and values [26]. In healthcare settings, this principle is upheld through the informed consent process, in which patients receive the necessary information to understand and voluntarily agree to a proposed medical intervention [26]. A well-designed readiness assessment can facilitate this process by confirming that the patient possesses a sufficient understanding of the surgery they are considering.

In a recent publication, Elliot Marrow examines how pre-surgical assessments first emerged during the 1950s. At that time, only a limited number of surgeons were open to delivering gender-affirming procedures for trans individuals. Some practitioners responded by developing their own screening standards to minimize the risk of postoperative regret and reduce potential legal risks for clinicians [27]. Early criteria emphasized helping patients assimilate into cisnormative society, particularly by expecting them to be heterosexual and to appear indistinguishable from cisgender people [28]. Many psychologists and clinicians believed that a patient's request alone was insufficient justification for surgery. They also worried about possible negative reactions from patients or the media if they granted access to the 'wrong' candidates [27]. These initial concerns among providers eventually contributed to the development of the WPATH SOC, originally titled the Harry Benjamin Standards of Care for Gender Identity Disorders. Clinicians then began formally evaluating whether patients were ready for surgery [29]. The evaluation system was created in part to safeguard healthcare teams and in part due to concerns that patients might later regret their decision [30]. Importantly, it was never intended to assist individuals in determining their own body preferences or to foster patient autonomy and genuine informed consent [27]. Because of this gatekeeping approach, many trans people came to view the assessment process as unhelpful for supporting their choices [31]. This sentiment remains common today and continues to appear in current studies [30].

Although evaluations for gender-affirming surgeries have become somewhat more patient- and surgeon-focused in recent years, they may still be influenced by underlying fear [27]. Without a consistent assessment framework, patient autonomy can be undermined when evaluations are shaped by cisnormative assumptions or worries about backlash instead of prioritizing a comprehensive informed consent process that fully educates patients and confirms their understanding of the planned operation.

Taken together, current practices for judging readiness among those seeking phalloplasty or metoidioplasty differ widely. Certain surgical programs depend entirely on support letters from mental health professionals, while others incorporate dedicated patient education initiatives. As far as we are aware, no published research has examined which elements are associated with patients feeling ready for these procedures, or whether any particular preparation approach produces stronger overall readiness. In light of this knowledge gap regarding trans patient preparedness, it is critical to identify the factors associated with perceived readiness and to design services that actively enhance it. The goal of the present study was to draw on data from a community-based cross-sectional sample of trans adults who had undergone phalloplasty and/or metoidioplasty. We sought to explore variables associated with feeling prepared for these surgeries and to make the case for developing preparedness programs that are more patient-centered, better supportive of their autonomy, and grounded in evidence.

Materials and Methods

The Patient-Reported Outcomes of Genital Reconstruction and Experiences of Surgical Satisfaction (PROGRESS) was a community-driven, patient-focused, cross-sectional survey. The questionnaire was designed collaboratively by a group of seven trans community members who possessed direct experience with phalloplasty and/or metoidioplasty, with leadership provided by the first author. The complete survey instrument is included in the Supplementary Material. Responses were gathered online between April and July 2022. Participants were required to be adults who identified as trans, nonbinary, or similar identities; to have received phalloplasty or metoidioplasty; to live in the United States of America or Canada; and to be capable of independently completing the English-language questionnaire. Recruitment materials were distributed via trans-focused social media platforms, Facebook groups, Reddit communities, and relevant listservs. The survey was cross-sectional, conducted online, self-administered, and fully anonymous. It collected information on participant demographics, experiences preparing for surgery, recovery processes, perceived shifts in mental health, levels of gender dysphoria and euphoria, and general satisfaction with the surgical outcome. No compensation or honorarium was offered to those who took part. The study received ethics approval from both the University of Victoria and the University of British Columbia Human Research Ethics Boards (certificate number 21–0033). All participants provided informed consent electronically before any data collection began.

Measures

The key outcome measure in this analysis was participants' perceived preparedness for surgery. This was assessed through one adapted item taken from Kenton's Preoperative Preparedness Questionnaire [14]. A single item was used instead of the entire scale because preliminary checks revealed minimal response variation and no violations of the linearity assumptions required for logistic regression. The question asked respondents to indicate their level of agreement with the statement "Overall, I felt prepared to undergo surgery." Although the original version of this item was intended for pre-surgery administration, our research team revised all questionnaire items to the past tense. Responses in both the original and adapted forms were collected on a 6-point Likert scale, ranging from "strongly disagree" to "strongly agree." These were later collapsed into a binary variable ('disagree' versus 'agree') for the logistic regression analyses.

Exposure measures

Information on participant background included age, ethnoracial background, level of schooling, annual earnings, sexual orientation, and nation of residence. Additional factors examined were the kind of gender-affirming evaluation received, overall mental health during the twelve months before the operation, whether participants had turned to community networks or materials ahead of surgery, and how helpful they personally found the approval process. Assessment type was captured through a custom item developed for this project: "What did the process of obtaining approval to have surgery look like for you?" Possible answers were two letters (from a therapist or mental health provider), one letter, an interview by an assessor, a combination of letter(s) and something else, a workshop or training, and 'other.' This measure was collapsed into a binary variable for modeling purposes: 'two letters' versus every other option combined. A follow-up query asked how useful the approval method had been in preparing for the procedure. Answers followed a 5-point Likert format from 'not at all' to 'extremely useful' and were

recoded into 'not useful' versus 'useful,' with the latter including any response except 'not at all.'

Mental health in the year leading up to surgery was assessed by adapting the Canadian Community Health Survey's single-item indicator [32], shifting the tense to past and specifying the relevant time period. The question read: "How would you describe your mental health in the year before you had phalloplasty or metoidioplasty?" The original 5-point response scale from 'poor' to 'excellent' was retained and then grouped into 'poor or fair' versus 'good, very good, or excellent.'

Whether individuals had reached out to community sources for guidance or encouragement before deciding on surgery was measured by creating a summary variable from the multiple-response item: "When deciding to have surgery, where did you access information about surgery options and outcomes?" Anyone who chose conversation with peers, Facebook or Reddit groups, online virtual support groups, in-person support groups, and/or reading blogs written by post-op trans men was classified as having 'accessed community.' Those who selected none of these options fell into the 'did not access community' group. A subsequent question asked respondents to rate how helpful each chosen resource had been for surgical preparation, using a 5-point Likert scale from 'not helpful at all' to 'very helpful.'

A composite variable was built from three separate survey items to identify participants who described themselves as being in the 'active process'—a phrase commonly understood in trans communities. This included anyone who indicated they had finished fewer procedures than originally intended, whose next surgery had been postponed indefinitely, who were awaiting corrective revisions, or who mentioned being between stages or actively in process in any open-ended response field.

Analysis

Initial data screening identified 8 submissions that failed to meet eligibility criteria and were removed. Four more were dropped because they contained answers to fewer than 10% of the questions. Since every survey item was voluntary, the amount of missing data differed across variables. Twelve individuals who left the key preparedness question blank (the main outcome for modeling) were excluded from the multivariable logistic regression. For predictors with more than 10 missing values, a distinct "missing" category was introduced to keep those cases in the models. After all exclusions, the final sample available for analysis totaled 203 responses.

The present paper reports descriptive summaries, bivariate associations, and a multivariable binary logistic regression. All computations were carried out in SPSS version 29. Descriptive profiles were generated first for the main variables. These were followed by cross-tabulations and chi-square tests to explore links between preparedness and each predictor, treating $P < .05$ as the threshold for significance. An automatic backward conditional selection procedure was then applied in the logistic regression, with preparedness as the dependent variable and all categorical predictors entered. Variables were removed stepwise based on their lowest statistical contribution until the optimal model was reached; demographic factors were not forced into the equation. Age, ethnoracial identity, income, education, sexual orientation, and country of residence served as potential covariates. This exploratory modeling strategy was adopted because the study was investigative and because existing research offers little guidance on which elements may relate to feeling ready for phalloplasty or metoidioplasty.

Results and Discussion

Table 1 summarizes the demographic and exposure characteristics of the sample, broken down by whether participants felt prepared for surgery. Chi-square findings are not shown because only a single variable showed a meaningful difference by preparedness status. The overwhelming majority of respondents identified ethnoracially as white (84%). Sexual orientation distributions were queer (37%), straight (27%), gay (21%), and bi (24%). Educational backgrounds tended to be advanced, with 30% having completed graduate-level schooling or earned a graduate degree. Income levels were similarly elevated, with 40% reporting earnings above $80,000 per year (in CAD or USD, depending on location).

Table 1. PROGRESS participant demographics by self-report of being prepared or not for surgery (n = 203). From: Promoting trans patient autonomy in surgical preparation for phalloplasty and metoidioplasty: results from a community-based cross-sectional survey and implications for preoperative assessments

Variable	Category	Total (n)	Prepared (n = 186) (n (%), prepared)	Not Prepared (n = 17) (n (%), not prepared)
Country of residence	Canada	29	24 (12.9)	5 (29.4)
	United States	174	162 (87.1)	12 (70.6)
Age group (years)	18–24	26	24 (13)	2 (11.8)
	25–35	107	98 (53)	9 (52.9)
	36–50	48	44 (23.8)	4 (23.5)
	50–65	19	17 (9.2)	2 (11.8)
Sexual orientation	Queer (gay, bisexual)	69	60 (32.8)	9 (52.9)
	Straight or asexual	131	123 (67.2)	8 (47.1)
Person of color	Yes	26	23 (12.4)	3 (17.6)
	No	177	163 (87.6)	14 (82.4)
Year of surgery	Before 2020	83	74 (39.8)	9 (52.9)
	2020 or later	120	112 (60.2)	8 (47.1)
Educational attainment	High school or less	11	10 (5.4)	1 (5.9)
	Some college/university	30	29 (15.6)	1 (5.9)
	College/university degree	98	90 (48.8)	8 (47.1)
	Graduate/professional degree	64	57 (30.6)	7 (41.2)
Annual personal income	≤ $49,999	61	56 (32.4)	5 (31.3)
	$50,000–$79,999	50	44 (26.0)	5 (31.3)
	≥ $80,000	78	72 (41.6)	6 (37.5)
Use of community resources before surgery	No	16	15 (8.1)	1 (5.9)
	Yes	187	171 (91.9)	16 (94.1)
Self-rated mental health (year before surgery)	Poor or fair	98	87 (46.8)	9 (52.9)
	Good/very good/excellent	102	94 (50.5)	8 (47.1)
Active preparation process	No	86	78 (41.9)	8 (47.1)
	Yes	117	108 (58.1)	9 (52.9)
Assessment type	Two referral letters	105	97 (52.2)	8 (47.1)
	Other formats	98	89 (47.8)	9 (52.9)
Perceived usefulness of assessment	Not useful	105	92 (49.5)	13 (76.5)
	Useful	92	89 (47.8)	3 (17.6)

Regarding surgeries, roughly half the group (51%, n = 103) underwent phalloplasty alone, 83 individuals (38%) underwent only metoidioplasty, and 21 participants (9%) underwent both operations. Just 40% (n = 85) of the sample received their procedure before 2020, while nearly 6 in 10 (59%, n = 124) had surgery in the previous 2 years. More than half (54%, n = 110) fell into the 'active process' category, which meant they were either still awaiting further operations or positioned between planned stages. Most people traveled beyond their home state or province for the operation (42%, n = 85), yet only 10% (n = 20) crossed international borders. Meanwhile, 14% (n = 28) stayed within their own city for the surgery.

On the whole, the sample reported strong feelings of readiness, with 86% (n = 186) stating they felt prepared for the procedure. Full details from the Preoperative Preparedness Questionnaire are shown in **Table 2**. Across nearly every item in the instrument, respondents generally agreed with items reflecting different facets of readiness. The single statement that received the weakest endorsement concerned feeling equipped to handle a catheter independently once discharged from the hospital.

Table 2. PROGRESS participants' average Likert rating from Kenton's preoperative preparedness measure (n = 203). From: Promoting trans patient autonomy in surgical preparation for phalloplasty and metoidioplasty: results from a community-based cross-sectional survey and implications for preoperative assessments

Statement	Strongly agree (n (%))	Agree n (%)	Somewhat agree (n (%))	Somewhat disagree (n (%))	Disagree (n (%))	Strongly disagree (n (%))
Awareness of alternative treatment options to the planned surgery	131 (60.9)	49 (22.8)	9 (4.2)	4 (1.9)	5 (2.8)	3 (1.4)
Understanding of the purpose of the planned surgery (expected outcomes)	161 (74.9)	39 (18.1)	4 (1.9)	–	–	–
Understanding of the benefits of the planned surgery	161 (74.9)	35 (16.3)	7 (3.3)	–	–	–
Understanding of the risks associated with the planned surgery	123 (57.2)	50 (23.3)	19 (8.8)	10 (4.7)	2 (0.9)	–
Understanding of potential surgical complications	117 (54.4)	52 (24.2)	25 (11.6)	8 (3.7)	2 (0.9)	–
Preparedness for postoperative expectations during hospital stay	60 (27.9)	67 (31.2)	30 (14.0)	19 (8.8)	13 (6)	3 (1.4)
Preparedness for postoperative expectations at home	49 (22.8)	68 (31.6)	51 (23.7)	22 (10.2)	9 (4.2)	3 (1.4)
Preparedness to manage a catheter during hospitalization	59 (27.4)	53 (24.7)	33 (15.3)	14 (6.5)	15 (7.0)	7 (3.3)
Preparedness to manage a catheter at home	42 (19.5)	48 (22.3)	40 (18.6)	20 (9.3)	17 (7.9)	10 (4.7)
Adequacy of time spent by healthcare providers in surgical preparation	69 (32.1)	60 (27.9)	38 (17.7)	15 (7.0)	11 (5.1)	10 (4.7)
Overall sense of preparedness for the planned surgery	92 (42.8)	67 (31.2)	27 (12.6)	8 (3.7)	7 (3.3)	2 (0.9)

Regarding the evaluation format, about half the participants (51.7%, n = 105) completed two separate external reviews, resulting in referral letters from mental health professionals. This distribution reflects the fact that data collection occurred before SOC version 8 eliminated the need for a second letter. The remaining participants (48.2%, n = 98) underwent another form of evaluation. Overall, slightly more than half the sample (53%, n = 105) indicated that their evaluation process was not at all useful in helping them get ready. A chi-squared test with Fisher's exact adjustment revealed a clear statistical connection ($P < .05$) between rating the readiness evaluation as useful and reporting higher preparedness. Among those who obtained two letters, more than half (55%, n = 88) described the process as not at all useful for preparation purposes. Only 13% (n = 26) felt the two-letter requirement had been very or extremely useful in preparing them for surgery.

While preparing for the operation, 92.1% (n = 187) of respondents turned to community-based supports or

materials. These included talking with peers, joining support groups, or using content created by the community itself. The resources rated most positively were social media platforms such as Facebook groups and Reddit forums, with 47% (n = 101) describing them as 'very helpful' for surgical preparation. Conversations with peers also received strong marks, rated as very helpful by 22% (n = 48) and helpful by 15% (n = 34). Apart from community-generated materials, direct consultations with surgeons stood out as well, with 40% (n = 87) calling them 'very helpful' and 24% (n = 52) rating them as 'helpful'. None of the demographic factors or other measured variables showed a statistically significant association with preparedness in the initial bivariate tests.

Correlates of surgical preparedness

The final multivariable logistic regression model identified only two meaningful predictors: sexual orientation and the usefulness of the assessment process. More precisely, individuals who described their sexual orientation as queer were considerably more likely to report feeling prepared than those who did not. A separate post-hoc chi-squared test explored the connection between queer identity and reaching out to community resources before surgery. Queer respondents were significantly more likely to have engaged with such community sources in the period leading up to their operation ($p < .05$). This difference may partly account for their higher reported preparedness compared with non-queer participants. **Table 3** summarizes the crude and adjusted odds ratios, along with the corresponding 95% confidence intervals, from the regression analysis.

Table 3. PROGRESS participants' correlates of Surgical preparedness (n = 203). From: Promoting trans patient autonomy in surgical preparation for phalloplasty and metoidioplasty: results from a community-based cross-sectional survey and implications for preoperative assessments

Variable	Adjusted OR (AOR)	95% CI	Crude OR	95% CI
Country of residence*				
Canada	–	–	Reference	Reference
United States	–	–	4.85	0.83–28.35
Age category (years)*				
18–24	–	–	Reference	Reference
25–35	–	–	1.47	0.22–9.86
36–50	–	–	3.89	0.36–39.00
50–65	–	–	1.87	0.10–32.96
Sexual orientation				
Straight or asexual	Reference	Reference	Reference	Reference
Queer (gay, bisexual, pansexual)	3.71	1.02–9.80	5.05	1.24–20.60
Person of color*				
Yes	–	–	1.08	0.14–8.06
No	–	–	Reference	Reference
Year of surgery*				
Before 2020	–	–	2.55	0.51–12.70
2020 or later	–	–	Reference	Reference
Educational attainment*				
High school diploma or less	–	–	Reference	Reference
Some college or university	–	–	6.67	0.14–31
College or university degree	–	–	4.28	0.240–76.72
Graduate or professional degree	–	–	1.68	0.39–7.23
Personal annual income (currency unspecified)*				
<$20,000–$49,999	–	–	Reference	Reference
$50,000–$79,999	–	–	0.68	0.14–3.10
≥$80,000	–	–	0.64	0.12–3.39
Access to community support or resources before surgery*				
No	–	–	Reference	Reference

Yes	–	–	1.25	0.08–17.46
Self-perceived mental health during the year before surgery*				
Poor or fair	–	–	Reference	Reference
Good, very good, or excellent	–	–	0.84	0.21–3.44
Active process*				
No	–	–	Reference	Reference
Yes	–	–	0.80	0.21–2.99
Assessment type*				
Two letters	–	–	Reference	Reference
Other	–	–	0.92	0.23–3.71
Perceived usefulness of assessment				
Not useful	Reference	Reference	Reference	Reference
Useful	7.78	1.64–36.79	10.98	1.93–62.25

1. OR = odds ratio; AOR-adjusted odds ratio; CI = confidence interval.
2. *Item was not included in the final multivariable model built using automatic backward selection.

The present findings contribute to an expanding body of work examining access to gender-affirming surgery and the ethical issues surrounding bodily autonomy. This study found elevated levels of self-reported preparedness within a community-recruited group of trans adults who had received phalloplasty and/or metoidioplasty. Those who viewed their assessment process as helpful were more likely to report feeling ready for the operation. However, the specific format of the assessment showed no statistical connection to preparedness. The discussion below situates these outcomes within the broader research on preparation for phalloplasty and metoidioplasty, with particular emphasis on criticisms of existing evaluation methods regarding informed consent and patient autonomy.

Individuals in this sample reported feeling ready for phalloplasty and/or metoidioplasty, with strong agreement across items of the Preoperative Preparedness Questionnaire [14] and the overall readiness question. The support respondents rated most valuable were Facebook and Reddit groups. Such online communities commonly serve as venues where people pose questions about results or personal journeys, receive encouragement from others who have gone through similar experiences, and exchange accounts of various surgical providers. It is widely recognized in trans circles that people preparing for gender-affirming procedures invest considerable effort in self-education and support-seeking outside formal clinical relationships, turning to community sources to build confidence [17, 33]. Additional studies highlight the value of peer assistance and shared accounts for those recovering from operations [34], managing health challenges [35], or navigating cancer therapies [36]. Although reaching out to community supports or materials did not emerge as a statistically significant predictor of preparedness in this analysis, participant feedback strongly underscored their practical value. The lack of statistical significance likely stemmed from the very small subset (8%, n = 16) who reported no community engagement.

Respondents also gave high marks to surgical consultations as a helpful component of preparation. These meetings frequently provide essential patient education and opportunities to ask questions or express concerns [23]. In numerous other surgical specialties, social workers and allied professionals now routinely assist with developing care plans or guiding pre-operative readiness [37]. Evidence indicates that when care teams supply resources judged beneficial by patients, individuals tend to feel better equipped [38]. While this style of structured planning is emerging in gender-affirming contexts, it was likely not routine for most participants here. When surgical teams or external providers offer limited guidance beyond the consultation itself, peer networks and self-sourced materials often become critical pathways to achieving readiness.

A further notable result was a stronger sense of preparedness among those who judged their assessment process to be useful. Nevertheless, referral-letter evaluations received low ratings overall for aiding preparation. For the majority, these evaluations centered on obtaining documentation from mental health professionals confirming mental health stability [18]. Only a small minority (2%) encountered education sessions or workshops as part of readiness determination. If many patients receive little coaching or instructional

materials from surgical teams, the referral letter step may represent the sole dedicated interaction with a healthcare professional focused on readiness. Because these evaluations primarily target mental health status, they may overlook chances to gauge genuine preparedness and collaboratively build a tailored care plan. Consequently, referral letter processes may deliver minimal practical benefit to those pursuing complex surgical interventions.

This work reinforces existing critiques that portray referral-letter assessments as largely unhelpful for people seeking gender-affirming procedures [19]. One earlier study described prospective patients worrying they would be deemed unsuitable if any mental health issues were present [39], while others characterized the evaluations as primarily functioning as gatekeeping mechanisms [40]. Still other research has faulted these processes for failing to provide the detailed information patients need to understand postoperative realities [41]. In our sample, the format of assessment did not influence self-reported preparedness, yet perceived usefulness did. The latest WPATH SOC calls for only one readiness letter for genital surgeries [18], which could ease certain obstacles. Yet, any letter mandate risks sustaining a process that offers limited support for preparation. Collectively, these observations suggest that current assessment practices frequently fall short of advancing patient autonomy when they bypass thorough informed consent by failing to assess patient understanding or to deliver relevant education. The findings also point to considerable variation in preparation needs across individuals, implying that personalized strategies may be required for these operations.

Unlike some previous reports, retrospective accounts of mental health in the year before surgery showed no meaningful association with preparedness in this group. Nonetheless, mental health remains a central element in evaluations of existing standards of care [18]. Although mental health status has been linked to surgical results in various medical fields [42], its specific influence on whether trans patients feel ready for phalloplasty or metoidioplasty is uncertain. Gender dysphoria can itself contribute to poorer mental health, including heightened anxiety and depression, and surgery may alleviate some of these effects [43]. Therefore, evaluations or care-planning approaches that acknowledge mental health impacts on outcomes while emphasizing other practical aspects of preparation could foster greater readiness. Further investigation is warranted to clarify the precise role of mental health in supporting preparedness for these surgeries.

In summary, the data portray individuals who pursue phalloplasty and/or metoidioplasty as generally well-prepared, especially when they encounter assessment or preparation activities they consider worthwhile. Pre-operative systems appear most effective when built around resources patients themselves identify as beneficial. In the absence of structured education or dedicated preparation initiatives, many must independently prepare themselves for these demanding procedures. Although traditional assessments have not always prioritized preparation support, shifts are occurring as more clinicians adopt surgical care planning and educational aids. For patients lacking access to formal programs, reliance on peer networks and online materials becomes the main route to information and confidence. While participants here valued peer-created resources highly, individuals should not bear primary responsibility for preparing themselves for complex surgeries such as phalloplasty or metoidioplasty.

Limitations

The findings presented here are subject to several limitations. Because this was a cross-sectional survey, participants were asked to reflect on events and experiences that, for some, had occurred years earlier. This raises the possibility of recall bias. That said, more than half the sample was still in the ‘active process’ or between surgical stages, and a comparable share had undergone their procedure within the two years before data collection. The relatively recent timing of many surgeries could have shaped the results, potentially reflecting improved access to care in recent years or greater adoption of informed consent approaches. On the positive side, this recency likely reduced the overall influence of recall bias.

The sample was predominantly white (83.7%, n = 170) and relatively young, with 65% aged 18–24 (n = 133). Most participants were also well educated: 48.3% (n = 98) held a college or university degree, and 31.5% (n = 64) had earned a graduate or professional degree. In addition, a large proportion (63.1%, n = 128) reported annual incomes of $50,000 or higher. Individuals with these demographic characteristics may have encountered fewer obstacles when seeking community support, online materials, or surgical care, including financial or insurance hurdles, housing instability, and similar challenges. Consequently, the experiences of less-

resourced individuals or those facing greater stigma and systemic barriers in healthcare settings are underrepresented here. Furthermore, the majority of respondents resided in the United States, with only a small number from Canada. The findings may therefore have limited relevance to Canadian settings, and no conclusions can be drawn about contexts outside these two countries.

Most survey items, including those used in the current analysis, were created by the patient-led research team. This approach enhanced face validity but meant the questions lacked formal psychometric testing. Although Kenton's Preoperative Preparedness Questionnaire [14] has not undergone rigorous psychometric evaluation, its content remains pertinent to the surgeries examined in this study. It will facilitate comparisons with future research that employs the same instrument. Finally, the survey did not include open-ended qualitative questions that might have provided deeper insight into why participants rated certain resources as more helpful than others during preparation.

Implications

The findings reported in this paper are original and carry broad implications for medicine, counseling, social work, health policy, academic scholarship, and the development of standards of care. They indicate that existing methods of preparing patients for surgery—such as referral letters or clinical assessments—may fall short for some patients undergoing these procedures. It is therefore critical to identify which readiness approaches patients actually find beneficial. Lessons could be drawn from other surgical fields that have created comprehensive programs to support recovery and preparation. Tailored preparedness initiatives may better align with individual patient requirements. For phalloplasty and metoidioplasty, community-based support clearly extends well beyond what current assessment processes typically offer. Future studies should aim to pinpoint the specific elements patients find most helpful during preparation and provide evidence-based guidance to policymakers and clinicians on more effective preparedness programs.

Conclusion

Healthcare providers involved in supporting patients before surgery should either create new tools or adapt existing ones to help individuals recognize their personal preparation needs and successfully reach readiness. The data favor shifting the focus of assessments toward surgical care planning instead of primarily measuring the severity of gender dysphoria. Such a shift would allow greater flexibility, ensuring that evaluations are grounded in evidence of what truly benefits patients and, ultimately, helping uphold patient autonomy through a thorough informed consent process. While flexibility remains important to address unique individual circumstances, the educational and planning components of assessments should be standardized across gender-affirming care to ensure consistent high-quality support for all patients. Additional research is needed to clarify exactly what patients require from these evaluations to feel adequately prepared.

Phalloplasty and metoidioplasty are intricate surgical procedures that can be difficult for patients to prepare for. Helping patients achieve a solid state of readiness is vital for maintaining meaningful informed consent and may also influence surgical results and long-term satisfaction. The conventional method of determining readiness—through meetings with a therapist or mental health provider and securing two supportive letters—may offer limited value for some individuals facing these complex operations. Community resources and surgical consultations continue to play a crucial role in the preparation journey. Because what each person finds helpful can differ, approaches to building preparedness should remain flexible and individualized. Ultimately, ensuring patient readiness is a shared duty involving the entire care team, readiness evaluators, and the patients themselves. Readiness processes should empower individuals to identify their specific needs and then supply the necessary supports or materials. Assessments must serve to respect autonomy by confirming that patients are properly equipped to undergo and recover from surgery through a comprehensive informed consent process.

Acknowledgments: Thank you to our funders and sponsors, and to the community members who took part in the research.

Conflict of Interest: None

Financial Support: This research was funded by the Canadian Institutes of Health Research Strategy for Patient-Oriented Research Transition to Leadership Award, grant ID #434293.

Ethics Statement: This study was jointly approved by the University of Victoria and the University of British Columbia's Human Research Ethics Boards (certificate number 21–0033). All participants consented to study participation. Study activities were conducted in accordance with relevant guidelines and regulations.

References

1. Kailas M, Lu HMS, Rothman EF, Safer JD. Prevalence and types of gender-affirming surgery among a sample of transgender endocrinology patients prior to state expansion of insurance coverage. Endocr Pract. 2017;23(7):780–6. doi:10.4158/EP161727.OR
2. Puckett JA, Cleary P, Rossman K, Newcomb ME, Mustanski B. Barriers to Gender-Affirming Care for Transgender and Gender Nonconforming Individuals. Sex Res Social Policy. 2018;15(1):48–59. doi:10.1007/s13178-017-0295-8
3. Schultheiss D, Gabouev AI, Jonas U. Nikolaj A.Bogoraz (1874–1952): Pioneer of Phalloplasty and Penile Implant Surgery. J Sex Med. 2005;2:139–46.
4. Lane M, Sluiter EC, Morrison SD, Coon D, Gast KM, Berli JU et al. Phalloplasty: understanding the chaos. Plast Aesthet Res. 2020;2020(0).
5. Heston AL, Esmonde NO, Dugi DD 3rd, Berli JU. Phalloplasty: techniques and outcomes. Transl Androl Urol. 2019;8(3):254–65. doi:10.21037/tau.2019.05.05
6. Hadj-Moussa M, Agarwal S, Ohl DA, Kuzon WM Jr. Masculinizing Genital Gender Confirmation Surgery. Sex Med Rev. 2019;7(1):141–55. doi:10.1016/j.sxmr.2018.06.004
7. Stojanovic B, Bencic M, Bizic M, Djordjevic ML. Metoidioplasty in Gender Affirmation: A Review. Indian J Plast Surg. 2022;55(2):156–61. doi:10.1055/s-0041-1740081
8. Bizic M, Stojanovic B, Bencic M, Bordás N, Djordjevic M. Overview on metoidioplasty: variants of the technique. Int J Impot Res. 2020;33(7):762–70. doi:10.1038/s41443-020-00346-y
9. Vukadinovic V, Stojanovic B, Majstorovic M, Milosevic A. The role of clitoral anatomy in female to male sex reassignment surgery. ScientificWorldJournal. 2014;2014:437378. doi:10.1155/2014/437378
10. Carlsson E, Pettersson M, Öhlén J, Sawatzky R, Smith F, Friberg F. Development and validation of the preparedness for Colorectal Cancer Surgery Questionnaire: PCSQ-pre 24. Eur J Oncol Nurs. 2016;25:24–32. doi:10.1016/j.ejon.2016.09.002
11. Gillis C, Gill M, Gramlich L, Culos-Reed SN, Nelson G, Ljungqvist O, et al. Patients' perspectives of prehabilitation as an extension of Enhanced Recovery After Surgery protocols. Can J Surg. 2021;64(6):E578–87. doi:10.1503/cjs.014420
12. Gillis C, Ljungqvist O, Carli F. Prehabilitation, enhanced recovery after surgery, or both? A narrative review. Br J Anaesth. 2022;128(3):434–48. doi:10.1016/j.bja.2021.12.007
13. Greene KA, Wyman AM, Scott LA, Hart S, Hoyte L, Bassaly R. Evaluation of patient preparedness for surgery: a randomized controlled trial. Am J Obstet Gynecol. 2017;217(2):179.e1-179.e7. doi:10.1016/j.ajog.2017.04.017
14. Kenton K, Pham T, Mueller E, Brubaker L. Patient preparedness: an important predictor of surgical outcome. Am J Obstet Gynecol. 2007;197(6):654.e1-6. doi:10.1016/j.ajog.2007.08.059
15. Makhoul AT, Day RT, Walker JC, Hammack-Aviran CM, Al Kassis S, Winocour JS, et al. Perioperative Experiences of Transgender Adults Seeking Gender-Affirming Surgery: A Qualitative Interview Study. Transgend Health. 2023;8(3):231–7. doi:10.1089/trgh.2021.0087
16. Latack KR, Adidharma W, Moog D, Satterwhite T, Hadj-Moussa M, Morrison SD. Are We Preparing Patients for Gender-Affirming Surgery? A Thematic Social Media Analysis. Plast Reconstr Surg. 2020;146(4):519e–21e. doi:10.1097/PRS.0000000000007192
17. Castle E, Blasdel G, Robinson IS, Zhao LC, Bluebond-Langner R. A Comparison of Non-Surgical Methods Used By Phalloplasty and Metoidioplasty Patients to Improve Connection to Genitals: How Usage of Methods and Their Perceived Helpfulness Shift After Surgery. World Professional Association of Transgender Health

27th Scientific Symposium Surgeon's Only Program. 2022.
18. Coleman E, Radix AE, Bouman WP, Brown GR, de Vries ALC, Deutsch MB, et al. Standards of Care for the Health of Transgender and Gender Diverse People, Version 8. Int J Transgend Health. 2022;23(Suppl 1):S1–259. doi:10.1080/26895269.2022.2100644
19. Mehra G, Boskey ER, Ganor O. The Quality and Utility of Referral Letters for Gender-Affirming Surgery. Transgend Health. 2022;7(6):497–504. doi:10.1089/trgh.2021.0057
20. Coleman E, Bockting W, Botzer M, Cohen-Kettenis P, DeCuypere G, Feldman J, et al. Standards of Care for the Health of Transsexual, Transgender, and Gender-Nonconforming People, Version 7. Int J Transgenderism. 2012;13(4):165–232. doi:10.1080/15532739.2011.700873
21. Cavanaugh T, Hopwood R, Lambert C. Informed Consent in the Medical Care of Transgender and Gender-Nonconforming Patients. AMA J Ethics. 2016;18(11):1147–55. doi:10.1001/journalofethics.2016.18.11.sect1-1611
22. OHSU Transgender Health Program. Phalloplasty: Guide to gender-affirming surgery. OHSU; 2022.
23. Bc TC. Workbook for phalloplasty, metoidiplasty, and erectile tissue release surgeries in BC. Provincial Health Services Authority. 2024 Feb.
24. Our Philosophy. Gender Confirmation. 2014.
25. Bc TC. Surgical Care Planning. Provincial Health Services Authority. 2024.
26. Beauchamp TL, Childress JF. Principles of Biomedical Ethics. Oxford University Press; 2019. 496 p.
27. Marrow E. I hope that as our selection becomes more accurate, the number … will be very few: The creation of assessment criteria for gender-affirming care, 1960s–1980s. Psychol Sex Orientat Gend Divers. 2023. doi:10.1037/sgd0000633
28. Fisk NM, Editorial. Gender dysphoria syndrome–the conceptualization that liberalizes indications for total gender reorientation and implies a broadly based multi-dimensional rehabilitative regimen. West J Med. 1974;120(5):386–91.
29. Ekins R, Science. Politics and Clinical Intervention: Harry Benjamin, Transsexualism and the Problem of Heteronormativity. Sexualities. 2005;8(3):306–28. doi:10.1177/1363460705049578
30. MacKinnon KR, Ashley F, Kia H, Lam JSH, Krakowsky Y, Ross LE. Preventing transition regret: An institutional ethnography of gender-affirming medical care assessment practices in Canada. Soc Sci Med. 2021;291:114477.
31. Namaste V. Sex Change. Social Change: Reflections on Identity, Institutions, and Imperialism. Canadian Scholars' Press; 2011. 288 p.
32. Canada S. Canadian Community Health Survey Cycle 1.2 Mental Health and Well-being Public Use Microdata File Documentation. 2023.
33. Rutherford L. The PROGRESS podcast. PROGRESS. 2022.
34. Colella TJ, King-Shier K. The effect of a peer support intervention on early recovery outcomes in men recovering from coronary bypass surgery: A randomized controlled trial. Eur J Cardiovasc Nurs. 2018;17(5):408–17. doi:10.1177/1474515117725521
35. Colella TJF, King KM. Peer support. An under-recognized resource in cardiac recovery. Eur J Cardiovasc Nurs. 2004;3(3):211–7. doi:10.1016/j.ejcnurse.2004.04.001
36. Borregaard B, Ludvigsen MS. Exchanging narratives-A qualitative study of peer support among surgical lung cancer patients. J Clin Nurs. 2018;27(1–2):328–36. doi:10.1111/jocn.13903
37. Powell R, Scott NW, Manyande A, Bruce J, Vögele C, Byrne-Davis LMT, et al. Psychological preparation and postoperative outcomes for adults undergoing surgery under general anaesthesia. Cochrane Database Syst Rev. 2016;2016(5):CD008646. doi:10.1002/14651858.CD008646.pub2
38. Lichtenstein M, Stein L, Connolly E, Goldstein ZG, Martinson T, Tiersten L, et al. The Mount Sinai Patient-Centered Preoperative Criteria Meant to Optimize Outcomes Are Less of a Barrier to Care Than WPATH SOC 7 Criteria Before Transgender-Specific Surgery. Transgend Health. 2020;5(3):166–72. doi:10.1089/trgh.2019.0066
39. MacKinnon KR, Grace D, Ng SL, Sicchia SR, Ross LE. I don't think they thought I was ready: How pre-transition assessments create care inequities for trans people with complex mental health in Canada. Int J Ment Health. 2020;49(1):56–80. doi:10.1080/00207411.2019.1711328

40. Amengual T, Kunstman K, Lloyd RB, Janssen A, Wescott AB. Readiness assessments for gender-affirming surgical treatments: A systematic scoping review of historical practices and changing ethical considerations. Front Psychiatry. 2022;13:1006024. doi:10.3389/fpsyt.2022.1006024
41. Ashley F. Surgical informed consent and recognizing a perioperative duty to disclose in transgender health care. McGill JL Health. 2019;13:73.
42. Lee DS, Marsh L, Garcia-Altieri MA, Chiu LW, Awad SS. Active Mental Illnesses Adversely Affect Surgical Outcomes. Am Surg. 2016;82(12):1238–43.
43. Shelemy L, Cotton S, Crane C, Knight M. Systematic review of prospective adult mental health outcomes following affirmative interventions for gender dysphoria. Int J Transgender Health. doi:10.1080/26895269.2024.2333525