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# Perceived social support, self-esteem, and depression among Indian trans men with and without sex reassignment surgery

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The psychological challenges associated with gender identity in developing countries like India are only recently receiving research attention. The study aimed to understand self-esteem, perceived social support, and depression among trans men in India. A comparative analysis was also undertaken between those who have and have not undergone sex reassignment surgery. The sample comprised 30 trans men, out of which 15 had undergone sex reassignment surgery and 15 had not. The Multidimensional Scale of Perceived Social Support, Rosenberg Self-esteem Scale, and Beck's Depression Inventory-II were used. Perceived social support from family and friends was found to be a significant predictor of self-esteem. Support from all three sources—family, friends, and significant others significantly predicted depression among the total sample. Trans men who had undergone sex reassignment surgery, reported higher self-esteem and lower depression levels, as compared to those who were yet to undergo surgery. The findings highlighted the contribution of social support in fostering the mental health of trans men. The consequent psychological benefits of surgery were also demonstrated. The study has implications for planning and designing mental health interventions for this community.

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## Introduction

Gender has been discussed across academic and activist circles for several decades and the perspectives have evolved. There has been a shift in how people view gender and sex in recent years, but society at large has a long way to go in achieving acceptance and full comprehension of how people experience gender differently. Gender is a multidimensional structure and the word “structure” helps situate gender as central to a society’s core organization as the economic and political structure (Risman et al. 2022, p. 4). There are many cultural and social implications for one’s gender identity since it determines many aspects of one’s existence and identity in day-to-day life. Literature on gender has traversed from the critique of binary understanding and hetero-normativity paradigm to a growing corpus of research on gender identities that makes transgender/cisgender issues complex involving concepts such as gender fluidity, queerness, gender ambiguity and non-binary gender categories (Schilt and Lagos 2017). Sociological scholarship in this area received attention with many considering Harold Garfinkel’s case study of Agnes to be the first sociological examination of a person going through a transition (Connell 2009 in Schilt and Lagos 2017). Schilt and Lagos in their analysis of the history of transgender studies in sociology distinguish between two main paradigms that have shaped sociological writing about transgender people: an emphasis on gender deviance and a focus on gender difference. Explaining the formation of “the transsexual” as a medical diagnostic and a collective group identity was the main focus of the gender deviance paradigm, which peaked in the 1970s and continued to be dominant until the 1990s (ibid p. 426). However, the term “transsexual” is outdated, having originated in early sexology literature to differentiate between cross-dressing and full-time transgender identity (Meyerowitz 2002 in Schilt and Lagos 2017). People whose gender identity does not necessarily match the sex category they were assigned at birth are referred to as transgender (Serano 2013 in Schilt and Lagos 2017). A variety of gender experiences, subjectivities, and presentations that lie outside, alongside, or in between the stable categories of “man” and “woman” are referred to as “transgender”. “Transgender” refers to a range of gender identities that challenge the conventional understanding of the relationship between gender identity and presentation and the “sexed” body, as well as gender identities that have historically been classified as “transsexual”. Hines discussed how practices of gender diversity were distinguished from each other. In particular, ‘transsexuality’ was isolated from ‘transvestism’ (Hines and Sanger 2010). Harry Benjamin, a sexual reformer, played a key role in clearly classifying transsexuality and establishing surgical reconstruction as the proper “treatment” for the “transsexual condition” (Benjamin 1966).

Transgender studies as an academic field arose in the late 1990s as a critical approach that problematized the assumption that sex is an inflexible indicator of identity by exploring the cases where this assumption is challenged. A few cultural mechanisms that shape how gender personhood is assessed are laws, discrimination, social norms, medical advancements, and acknowledgement from others. These are some of the areas which social scientists have studied concerning transgender people (Sanger 2010). Being a gender minority in most regions of the world, they constitute a vulnerable section of society, with their identity-related challenges hampering their psychological health both at a personal and social level. The prevalence of psychopathology and mental health issues, especially depression, is higher in transgender people compared to the cis-gendered population (Bockting et al. 2013; Dhejne et al. 2016). Many changes and challenges come along with transsexuality. Some of them are feelings of isolation, depression, increased dependence, economic problems, and lowered self-esteem (Ardebili et al. 2020).

Moreover, while both trans men and trans women face social stigma, the challenges they face in their daily lives may differ significantly. For instance, transgender people often face availability and accessibility issues with public toilets since the existing infrastructure in the country mostly caters only to binary users. The plight of trans men is thought to originate from being assigned females at birth in a patriarchal society (Sarfaraz 2016). In an attempt to understand critical discourses around gender, transgender, trans queer and gender fluidity, the intersectionality lens can help show how trans people navigate the multiple hues of oppression revolving around their identities. The complex phenomena of identity and experiences of queer and trans requires an analytic framework like intersectionality which would capture a deeper understanding of the lives of trans and queer. The concept of intersectionality draws attention to the dynamic ways in which lived identities, structural systems, marginalization sites, forms of power, and resistance tactics “intersect” (May 2015 in Duran et al. 2019). Transgender people globally experience intersecting forms of social marginalization and are disproportionately affected by health inequalities. Due to prejudice, harassment, and healthcare professionals’ unwillingness to treat them, they encounter major obstacles while trying to get access to treatment (Wesp et al. 2019). Following the perspectives of the Queer Theory (Butler 2004), it is the social constructs enforced upon these individuals that force them to fit into culturally and rather arbitrarily determined gender categories and expectations. The struggle to meet these expectations while becoming aware of one’s desires may lead to significant psychological distress for trans men. The prevalence of non-suicidal self-inflicted injuries for instance is shown to be higher among trans men as compared to trans women (Claes et al. 2015).

The discourse around gender reassignment, genital surgery, and hormonal treatments gained momentum in sociological studies in the 1980s. Professor of women’s studies and medical ethics, Janice Raymond contends that transsexuality and surgical options for gender changes were created by the patriarchal and capitalist medical establishment in order to establish new medical markets and legitimize homosexual and gender non-conforming individuals (Raymond 1979 in Schilt and Lagos 2017, p. 428). Margrit Eichler provides a solid critique of the medicalized elements of gender changes in a thesis that was extensively replicated in feminist sociology anthologies: “From a strictly physiological viewpoint, we must designate sex change operations as bodily mutilation—the willful destruction of physically healthy portions of the body for purely social reasons” (Eichler 1980, p. 87). However, later empirical studies have highlighted the agency of transgender people to reclaim their identity by undergoing medical interventions to realign their gender and sexual identity. Ekins and King (2006) in their book argue that all transgender identities emerge within one of the four modes of trans gendering: those of ‘migrating’, ‘oscillating’, ‘negating’, and ‘transcending’. They identified five sub-principal processes variously operative within each mode: those of ‘erasing’, ‘substituting’, ‘concealing’, ‘implying’, and ‘redefining’. Over the past decade ‘redefining’ identity and body by undergoing medical interventions has gradually gained acceptance through studies that have shown the process is a challenging one.

There is a growing body of literature that points toward the benefits of medical interventions like hormonal therapy and sex-reassignment surgery concerning variables like sexual health, sexual satisfaction, quality of life (Wierckx et al. 2011), and mental health. A meta-analysis by Murad and colleagues covering 1833 participants, revealed that sex-reassignment surgery led to a significant improvement in sexual functioning, gender dysphoria, and quality of life and significantly reduced psychological

symptoms associated with gender dysphoria (Murad et al. 2010). The findings for hormonal therapy have not been as conclusive, with some studies indicating that the benefits are statistically significant, while others suggest insignificant to modest improvements in psychological variables. Considering the specific challenges faced by transgender people in developing countries with aggravated societal issues related to their gender identities and with compromised access to medical treatment owing to its acceptability, financial costs involved, and other hurdles, more such studies need to be conducted to obtain further empirical data.

#### **Self-esteem among people with non-binary gender identities.**

Internalized transphobia due to stigma has a negative relationship with one's self-esteem whereas there is a positive relationship between self-esteem and social connectedness (Austin and Goodman 2016). Data from a Pakistani sample showed that 74% of transgender people had low to moderate levels of self-esteem (Akhtar and Bilour 2019). Low self-esteem was found to be a predictor of symptoms of anxiety and depression (Bouman et al. 2017). Vosvick and Stem (2019) found that self-esteem is significantly important for the psychological quality of life of the LGBT community. It moderates the relationship between stress and psychological quality of life. It is common for trans men to experience dissatisfaction with their bodies, which often results in opting for medical procedures to increase their levels of satisfaction. Research suggests that the stress of being a sexual and gender minority can affect one's self-esteem more than the general population. Mastectomy led to an improvement in body image in a study conducted among 33 transmen. This consequently played a role in improving the overall self-image and sense of self-worth (Van de Grift et al. 2016).

#### **Prevalence and common correlates of depression among transgender people.**

Experiences of transphobia, stigma, and social rejection are all potential contributing factors to the onset of depression. A study found that the prevalence rates of depressive symptoms among transmen were significantly more than those in the general population (Budge et al. 2013). This is in line with the minority stress model since transgender people belong to a stigmatized minority group. The distress is likely to manifest as some mental disorder. Another study based in the United States found that 44.1% of their transgender participants had clinical depression followed by anxiety and somatization disorder. The psychological distress they faced was positively associated with social stigma, but support from peers acted as a moderator (Bockting et al. 2013). A review echoed these findings since the prevalence of psychopathology and mental disorders in transgender people was found to be higher than in the cisgendered population. These were mostly depressive and anxiety disorders but there was also proof that the conditions improved after going through medical interventions that were gender-confirming (Dhejne et al. 2016). Studies have highlighted augmentation of quality-of-life post-reassignment surgery, fewer signs of depression post-surgery and an improved sense of self-identity.

#### **Role of perceived social support in fostering mental health of transgender people.**

Social support plays a significant role in self-perception, resilience, attachment styles, and many other factors that contribute to having a good quality of life. Social support from family and friends was associated with better quality of life in people with gender dysphoria in Turkey (Basar et al. 2016). Poor social support was found more in people with gender dysphoria which was then associated with the presence of a

psychiatric disorder (Kaptan et al. 2021.) It has been identified that social support moderates the psychological distress that accompanies gender dysphoria-related discrimination (Testa et al. 2012). It adds to the resources an individual uses for coping with stress. Trujillo and colleagues conducted a series of surveys that found that discrimination based on gender identity acted as a positive predictor of deteriorating mental health or the emergence of clinical symptoms. The onset of depression would lead to suicidal ideation but it was found less in people who had moderate to high social support from their friends or significant others (Trujillo et al. 2017). Research done on an Australian sample had similar findings and suggested that a lack of perceived social support was the most significant predictor of symptoms of depression (Boza and Perry 2014). Social support from family has proven to be associated with diminished feelings of psychological distress (Bockting et al. 2013). It also leads to lower suicidal ideation and risk (Bauer et al. 2015).

#### **Specific challenges faced by the transgender community in the Indian context.**

Some cultures are very rigid about their gender roles which can lead to difficulties for those who are unable to abide by them. India is one such country where conversations about gender identity and sexuality are still difficult because of the taboo and stigma attached to it. In the majority of cases, being anything other than cisgender or heterosexual is scorned by society. Formal gender sensitization interventions have only recently begun and these too are more prevalent in the developed sections of society in metros and big cities.

Structured policy-level efforts thrive on data. In 2011, an attempt was made to identify the size of the transgender population in India. The results identified approximately 4.88 lakh people belonging to the 'other' category that was neither male nor female (Ministry of Social Justice and Empowerment 2019). While the numbers themselves are thought to be a gross underestimation, exact official statistics on the various categories of non-binary people in the country are not available. Without an official identity beyond the umbrella transgender label, the various non-binary people in India are devoid of easy access to public facilities and to various schemes offered by the government.

In 2017, the Central Government issued guidelines under the Swachh Bharat Mission, making it mandatory for transgender people to be permitted into public toilets designated for both men and women, depending on their choice. In reality, however, the challenges faced by transwomen and transmen in accessing toilets according to their choice, continue to exist. Transmen who have not undergone phalloplasty are unable to use men's toilets where there are no private stalls, while transwomen are often ill-treated or denied access to toilets for women (Behal 2021). Moreover, anecdotal evidence has found significant differences in the treatment that trans men and trans women receive in India. Trans men are lesser known and therefore have fewer helping bodies or aides as compared to the trans women community. The cost of treatment and surgeries are more expensive and they face stigma from the trans women community.

In India, the concept of 'third gender' has been introduced for individuals who do not identify as 'male' or 'female'. There is a history of the third gender in the Indian context which reflects the embedded cultural-religious existence of the community of "hijras". The hijras are a religious community of men who dress and act like women and whose life and culture centers on the worship of the Bahuchara mata (mother-goddess), one of the many versions of the mother goddess worshiped throughout India (Nanda 1990, Preface). The Hijras may choose to undergo castration or are born intersex. Though the third gender is

referred to in mythological tales and is visible in contemporary India, there is a mystery which surrounds them and hence instils fear about the community. There is very little understanding or knowledge however about the transgender community. Many associated misconceptions add to the negative stereotypes and taboo of being transgender. There is a general fear of revealing their identities and despite being promised confidentiality, it acts as an obstacle in the quest for information. This explains why there is little research in this field when it comes to scoping the demographic details of the transgender population or their experiences in India.

**The present study.** The concepts of self-esteem, perceived social support, and depression have been abundantly researched in the context of cis-gendered people, but the trans men community, especially in India, has been underrepresented if not completely excluded from such studies. Furthermore, the psychological experiences of trans men who have and haven't undergone sex reassignment surgery have not been sufficiently documented in the country. Given this context, it becomes even more important to empirically explore the mental-health-related experiences of trans men in India. For a collectivistic country like India, social support is a crucial factor concerning psychological experiences and as demonstrated by earlier studies, a vulnerable population like that of trans men would benefit even more from such support amidst their ongoing identity-related struggles. Our study thus aimed at understanding the relationship between perceived social support, self-esteem, and depression among trans men in India, and at understanding the differences in psychological experiences between those who have and haven't undergone sex reassignment surgery.

## Method

**Sample.** A purposive sampling technique was used to recruit participants that fit the requirements of the study. The primary researcher collected the contact details of prospective participants from a closed group of individuals who had already been in contact with the researcher through social media for medico-legal and social guidance for gender dysphoria and related issues. To minimize selection bias, all individuals who fit the inclusion criteria of being above 18 years of age, having a basic eighth-grade level of English proficiency, and identifying themselves as trans men, were contacted over the phone to request their participation. Considering the issues of taboo and lack of awareness associated with gender and sexuality in the country, the large number of closeted individuals in the queer community, and the lack of a formal census of the community, estimates of the population size of individuals that fit the inclusion criteria for the study would have been rather arbitrary. A statistical approach to estimate sample size adequacy was thus utilized for the study. The review of studies exploring similar variable relationships across similar populations indicated moderate to strong relationships. For instance, general social support was found to be a prominent predictor of depression among both trans men and trans women (Pflum et al. 2015), while self-esteem was found to be significantly related to depression among trans men and trans women (Catelan et al. 2022). The correlation coefficients in these studies were  $r=0.52$  and  $r=0.73$  respectively. Given these coefficients and alpha set at 0.05, sample size calculators suggest a sample size between 18 to 42 as adequate (Hulley et al. 2013). The final sample comprised 30 trans men ( $N=30$ ) above the age of 18 (Mean age = 30.63 years) who consented to participate in the study. Half of the sample were trans men who had not undergone sex reassignment surgery (Group A). The other half were trans men who had undergone sex reassignment surgery (Group B).

## Measures

*The Multidimensional Scale of Perceived Social Support (Zimet et al. 1988).* Perceived social support from the individual's family, friends, and significant others was measured using the Multidimensional Scale of Perceived Social Support. It has 12 items, four each for the three social groups. The test taker is expected to indicate their level of agreement on a seven-point scale. A high score indicates a high level of perceived social support. The internal reliability of the scale was calculated to be 0.88. The construct validity of the scale was established by correlating the scale scores with the depression subscale of the Hopkins Symptom Checklist (HSCL), with the results showing an overall negative relationship between perceived social support and depression (Zimet et al. 1988).

*Rosenberg Self-esteem Scale (Rosenberg 1979).* The Rosenberg Self-esteem Scale was used to measure the participants' self-esteem levels. It is a 10-item scale and each item can have a minimum score of zero and a maximum score of three, based on how much the test-taker agrees with the statement. The total is calculated for all 10 statements and higher scores are indicative of higher levels of self-esteem. The test-retest correlations are reported to range from 0.82 to 0.88 and its internal consistency ranges from 0.77 to 0.88, making it a reliable measure of self-esteem across various populations. The scale also showed good construct and concurrent validity (Wongpakaran and Wongpakaran 2012).

*Beck's Depression Inventory—II (Beck et al. 1996).* The study used Beck's Depression Inventory to measure the occurrence and severity of depressive symptoms among the participants. The test was developed to measure the severity of depression in individuals between the ages of 13 to 80. It is not a diagnostic tool but has been used widely in clinical and applied psychology research. It has 21 items and can be self-administered. The author provides categories based on the severity of depression, with high scores indicating higher levels of experienced depression. The test-retest reliability and internal consistency are both highly acceptable (0.93 and 0.92 respectively). It is also known to demonstrate good overall construct validity based on ratings from experts (The National Child Traumatic Stress Network 2018).

**Procedure.** The research proposal was formally approved by an independent external reviewer appointed by the Indira Gandhi National Open University (Study Centre 16144, PCE16/PP1219/19, for enrollment no. 185947736). The researchers conducted the study in accordance with all necessary ethical principles of human participants' research and research with vulnerable communities as mentioned in the Declaration of Helsinki (World Medical Association 2013). Written signed consent when dealing with sensitive topics can potentially raise trust issues and hindrances in rapport establishment in developing countries (Krogstad et al. 2010) and work with certain communities, wherein oral consent is deemed to be preferable (Gordon 2000). Thus, oral consent was obtained from all participants before recruitment in the study. Data was collected by the primary field researcher who already had an established rapport with the trans men groups and no external agencies or research assistants were involved in the entire process to ensure the complete anonymity of the participants and confidentiality of the data.

**Analysis.** Pearson's Product Moment Correlation coefficients were calculated to investigate the relationship between perceived social support, self-esteem, and depression among the trans men. To understand the possible differences across these variables between those trans men who had not undergone sex



**Table 1 Descriptive statistics and correlations for perceived social support, self-esteem, and depression.**

Variable	M	SD	1	2	3	4
1. Family	15.13	9.40	–			
2. Friends	20.70	5.28	0.38*	–		
3. Significant others	22.30	4.62	0.02	0.23	–	
4. Self-esteem	27.40	7.52	0.74**	0.66**	0.36	–
5. Depression	18.67	7.76	–0.70**	–0.65**	–0.38*	–0.88**

N = 30. Participants were on average 30.6 years old (SD = 7.9 years).

\*p < 0.05; \*\*p < 0.01.

reassignment surgery and those who had, an independent samples *t*-test was used after ascertaining that the assumptions for the independence of observations and normality of data are met.

Results

This section presents the findings of the correlational analysis performed to study the relationship between perceived social support, self-esteem, and depression among the sample studied. These are followed by findings of the comparative analysis performed to assess the psychological benefits of sex reassignment surgery.

**Perceived social support, self-esteem, and depression among Indian trans men.** As seen in the summary of the correlation matrix (Table 1), results showed significant positive correlation between perceived social support from family and self-esteem and between perceived social support from friends and self-esteem. Regarding the relationship between perceived social and depression in the sample studied, there was a significant negative correlation between depression and perceived social support from family, friends, and significant others.

Following the results of the correlation analysis, a multiple linear regression analysis was performed. The first model with perceived social support from family and friends as predictors of self-esteem was significant, ( $F(2, 27) = 34.23, p < 0.001, R^2 = 0.72$ ). The individual predictors were examined further and indicated that both social support from family ( $t = 5.22, p < 0.001$ ) and friends ( $t = 3.96, p < 0.001$ ) were significant predictors in the model. The second model tested perceived social support as a predictor of depression and emerged significant ( $F(3, 26) = 20.08, p < 0.001, R^2 = 0.70$ ). Perceived social support from family ( $t = -4.85, p < 0.001$ ), friends ( $t = -2.79, p < 0.01$ ) and significant others ( $t = -2.48, p < 0.02$ ) were all significant predictors in the model.

**Perceived social support, self-esteem, and depression among Indian trans men.** The independent samples *t*-test analysis (Table 2) shows that while perceived social support was higher among those trans men who had undergone sex reassignment surgery as compared to those who hadn't, the difference was statistically significant for perceived social support from friends. Trans men in the sample who had undergone surgery also demonstrated significantly higher self-esteem and significantly lower levels of depression, with the mean scores indicating mild to moderate depression as compared to moderate to high depression among those who hadn't undergone surgery. Given the small sample size of the study, a post hoc power analysis was performed using Daniel Soper's online statistical calculator.

Across the analyses performed, the obtained power was found to range between 0.81 and 1.00 (Soper 2024).

Discussion

The present study was conducted to study the role of perceived social support in predicting self-esteem and depression among trans men in India and to explore the differences in the levels of self-esteem and depression between trans men who had and who had not undergone sex reassignment surgery. The study has replicated the findings of studies conducted on these variables, albeit in the context of trans men in India, in an attempt to fill the gaps in empirical literature available on mental-health experiences of the transgender community in a collectivistic developing country like India. Empirical and theoretical research has highlighted how trans gendering emerges through the process of self-discovery, wherein oscillating on the gender spectrum and finally transcending to a trans identity is not only an overwhelming journey but also an anxiety-prone process. This study contributes to the parsing of data on trans men and their journey of redefining or struggling with their sexual identity crisis.

The positive relationship between self-esteem and perceived social support from family and friends observed in the present study is in line with previous research done in this area (Austin and Goodman 2016). Our study also revealed that trans men are less likely to experience depressive symptoms if they perceive the availability of support from family and friends. Social support plays a significant role in self-perception, resilience, attachment styles, and many other factors that contribute directly or indirectly to having a good quality of life and overall better mental health (Basar 2016). It has been found that the quality of social support is a good predictor of depressive symptoms in transgender people (Trujillo et al. 2017; Boza and Perry 2014). Other research has found that social support can moderate the effect of psychological distress which has implications for depressive symptoms (Bocking et al. 2013; Boza and Perry 2014; Testa and Sciacca 2012). A recent study maintained that relationship quality was a significant predictor of well-being and that social support is crucial for transgender youth's well-being regardless of their gender identification (Alanko and Lund 2020). For a marginalized community like transgender people, in a society that challenges their identity more frequently than not, obtaining social support would surely foster feelings of self-worth and thus consequentially lead to improved mental health.

Our study showed that trans men who had undergone sex reassignment surgery reported significantly higher levels of self-esteem and lesser levels of depression. The psychological benefits of surgery have been established in earlier studies, especially in the context of body satisfaction, positive body attitudes, self-esteem, and body image-related quality of life among trans men. In 2020 for instance, a group of researchers did a review to study the breadth of research available on the quality of life for individuals after sex alignment surgery (Ardebili et al. 2020). The results were in line with the results from a previous study (Valashany and Janghorbani 2018). The study suggested that quality of life increases post-surgery. The increase in self-esteem is believed to be a result of an improvement in their body-image issues after aligning their body to their gender. Fewer signs of depression after the surgery can be attributed to the diminishing feelings of dysphoria, as well as the improvement in self-esteem (Van de Grift et al. 2016, 2018). The psychological benefits of surgery are expected to result from an improved sense of one's identity after having struggled with gender dysphoria for several years. Especially amidst societies that have a restricted view of the genders, such cohesiveness at a personal level resulting from the sex reassignment surgery can be expected to contribute to positive

**Table 2 Summary of t-test for perceived social support, self-esteem, and depression.**

Variable	Group A		Group B		t	p
	M	SD	M	SD		
Family	12.87	8.68	17.40	9.83	−1.34	0.192
Friends	16.93	3.43	24.47	3.94	−5.58	0.000
Significant others	20.93	5.35	23.67	3.11	−1.67	107
Self-esteem	23.33	6.88	31.47	5.87	−3.48	0.002
Depression	22.00	8.59	15.33	5.19	2.57	0.017

Mean parameter values for each of the analyses are shown for Group A denoting transmen who hadn't undergone sex reassignment surgery (n = 15) and Group B denoting transmen who had undergone sex reassignment surgery (n = 15). The results of the t-test (assuming unequal variance) have been included.

outcomes in the realm of mental health at large. Researchers have examined the dynamics of transgender people’s relationships and family responsibilities with other family members within the field of family sociology. They have also examined how these dynamics may change when a person begins a physical transition. Hines conducted interviews to see how people handle telling family members that they have decided to start a medically managed transition (Schilt and Lagos 2017). In India, family support is considered crucial in navigating the reassignment surgery, especially in the context of “*dharma*” (duty towards parents and siblings). The collectivistic nature of India propels even transgender people to repay their parents or caregivers by fulfilling their heteronormative roles and duties. Hence, in a society where heteronormativity is the norm, receiving social support from family and friends for reassignment surgery is critical for fostering healthy self-esteem.

Limitations of the study

While the insights that emerge from the findings of the study can be expected to help in multiple areas of focused community interventions for trans men in the country and to help spread awareness about the mental health challenges faced by this community among the general public, the study had a few limitations. A larger sample size with a wider demographic and geographical spread across the country would have helped us gain broader insights. Caution must be exercised when attempting to generalize the findings of the study. The sensitivity of the topic also did not facilitate the conduction of detailed one-on-one interviews that may have facilitated qualitative analysis to further understand the complexities of the lived experiences of the participants in the context of the variables studied. The widespread ignorance about the non-binary genders in the country, the lack of awareness about gender-specific mental health needs, the paucity of non-profit organizations catering to the needs of this community, and the lack of centralized bodies that document the gender-related census-like data, call for more efforts and studies in this area.

Conclusions

The results from this study show that perceived social support is important at every stage of gender dysphoria, no matter how far along they are in their gender affirmation journey. Perceived social support especially from family and friends is vital for determining the self-esteem as well as depression levels of trans men. Trans men like trans women have to negotiate the expectations of family versus their reality and with support from near ones, their journey of sex realignment, though fret with challenges, has been with less turmoil. The comparison between trans

men who had undergone sex reassignment surgery and who had not, revealed that the former group experienced significantly higher self-esteem and lower depression relative to the latter group. The study thus reiterates the role of surgery in improving the mental health of trans men and points towards efforts aimed at spreading awareness about this among trans men in India and the society at large. Future research can compare the psychological experiences of trans men across three groups—those who haven’t started any reaffirming interventions, those undergoing hormone therapy and those who have undergone sex reassignment surgery. The social support received by trans women and trans men for such procedures can be compared as well. Attempts should also be made to conduct longitudinal studies to specifically understand long-term direct and indirect psychological effects of sex reassignment surgery (the study of sexual activity post-surgery and consequent life satisfaction for instance has received little attention in the Indian context). Such studies will help in designing relevant intervention modules.

The Indian Government has started initiatives and schemes for marginalized communities with some specific ones aimed to benefit the transgender population. For instance, under the Ayushman Bharat Scheme, the Ayushman Bharat TG Plus health insurance has been rolled out, which offers a cover of a sum of Rs. 5 lakhs annually to transgender persons in the country. All facets of healthcare linked to transition will be covered by the Comprehensive Package. This includes (but is not limited to) hormone therapy, sex reassignment surgery, as well as necessary post-operative procedures that are performed at any public or private healthcare facility (ETGovernment 2022). While these initiatives address the financial challenges faced by the community, addressing the more systemic issues calls for sustained and multi-level efforts. The study has implications for interventions including awareness drives, psycho-education, individual counseling, family therapy, medical camps and support groups. Queer-affirmative therapy is only recently being offered by a limited number of mental health practitioners. The limited availability and accessibility of these services pose a major challenge in a country already struggling to meet the gap between demand and supply for mental health services. There is a dire need to include queer-specific therapy training in the curriculum of programs directed towards counselors, psychotherapists and even frontline medical professionals. Efforts should also be made to make the surgery more accessible and affordable for this population that is already facing the challenges of social discrimination and personal distress.

Data availability

The deidentified data file can be obtained from the following: Patki, Sairaj, 2024, “Perceived social support, self-esteem, and depression among Indian trans men with and without sex reassignment surgery”, <https://doi.org/10.7910/DVN/KFPQ6M>, Harvard Dataverse, V1.

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## Author contributions

SP: conception of the study design, statistical analysis and writing of the paper. PG: writing of the paper. AW: data collection. AG: literature review.

## Competing interests

The authors declare no competing interests.

## Ethical approval

The study was formally approved by an independent external reviewer appointed by the Indira Gandhi National Open University (Study Centre 16144, PCE16/PP1219/19, for enrollment no. 185947736).

## Informed consent

The study implemented an oral informed consent procedure considering the sensitivity of the topic and the related comfort level of the community.

## Additional information

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