Introduction

Physical “sex” of a person is determined by the phenotype and is assigned at birth usually by parents and the physician. On the other hand, the word “gender” refers to one’s innate sense of being a man/woman/some other or someone in between. Normally, one’s physical sex and “gender” are in alignment. In a few individuals, there is a noticeable and persistent incongruence between “sex” and “gender identity” to an extent that the individuals wish to get rid of their primary and/or secondary sexual characteristics and acquire the physical/phenotypic characteristics of a gender, which is different from that of birth sex. The inherent need by these persons to express their perceived gender, their longing for the society to accept them in this role, and their negative treatment by the society gives rise to a deep-seated distress. This phenomenon was classified as “gender identity disorder” in Diagnostic and Statistical manual of Mental Disorders (DSM-IV), and changed to gender dysphoria (GD) in DSM-V. Many LGBT advocacy groups find the inclusion in DSM stigmatizing and have asked for its removal. However, many GD persons do require psychological or other medical/surgical intervention in some form and may be denied access to care in the absence of a billable diagnosis; hence the term was retained.1 The diagnosis of mental illness carries a stigma even in the Western world. In addition, there is widespread stigma against transgender people, especially in conservative societies like India. To avoid this double disadvantage to the community, the World Health Organization (WHO) moved gender identity-related diagnosis from mental health-related chapter to “conditions related to sexual health” in International Classification of Diseases (ICD11),2 which is a broader document compared with DSM.1 The terminology also changed from gender identity...
disorder for children, and transsexualism for adolescents and adults in ICD10, to “gender incongruence” (GI) in ICD11. Earlier, transsexuals were defined as those who seek medical assistance in changing their physical sex to align with their gender. However, it is no longer considered an apt term, as it may equate with objectifying people. However, the term is retained in this document for the purpose of easy understanding and dissemination of information. Male to female transitioning individuals are known as transwomen and the opposite transmen. In the society at large, there has been a change in thinking from the rigid binary to a spectrum and diversity. Gender is more fluid than it was previously thought. Not all persons with incongruence in identity or expression have distress or are suffering. It is now understood that not everyone who seeks medical help may require medical procedures or the complete set of procedures. It is important for the medical professional to “follow the psyche” of the patient. Till as recently as 2007, the oft quoted prevalence rates for GI were 1:11900 to 1:45000 for transwomen and 1:30400 to 1:200000 for transmen. However, recent studies indicate that 0.4 to 1.3% of world’s population experiences GI. A California Health Interview Survey estimated 3.5% of all adults in the United States to be lesbian gay bisexual transgender (LGBT) and around 0.3% transgender. When surveys specifically inquired about “transgender” identity, the estimates ranged from 0.3% to 0.5% among adults, and from 1.2% to 2.7% among children and adolescents. When the definition was expanded to include broader manifestations of “gender diversity,” the corresponding proportions increased to 0.5 to 4.5% (500–4500 per 100,000) among adults and 2.5 to 8.4% among children and adolescents. A gender identity clinic (GIC), which treats 95% of all patients in Netherlands, estimated a 20-fold increase in the number of patients from 1980 (34) to 2015 (686). The author’s experience has been similar, with increase in number of patients presenting with GI in their GIC over a period of 26 years from 6 in 1993 to around 150 patients in 2019. This may be due to better awareness among patients and parents and rapid dissemination of information via social media regarding the availability of trans health care. Centers performing 50 or more gender affirmative surgeries (GAS) procedures are now functional in New Delhi, Mumbai, Navi Mumbai, Bangalore, Jodhpur, Kochi, Vijayawada, Ghaziabad, and Coimbatore.

**Diagnosis of Gender Dysphoria (now called Gender Incongruence) as per DSM5**

- **A)** A noticeable incongruence between the patient’s sex (assigned gender) and gender (expressed/ perceived gender), persistent for minimum 6 months with at least 2 of the following criteria present:
  1. Noticeable incongruence between the patient’s gender and primary and/or secondary sexual characteristics.
  2. An intense need to do away with his or her primary or secondary sexual characteristics (or, in the case of young adolescents, to prevent the development of the secondary sexual characteristics).
  3. An intense desire to have the primary or secondary sex features of the expressed gender.
  4. A deep desire to transform into a gender, different from assigned gender.
  5. A profound need for society to treat them in their expressed gender, which is different from assigned gender.
  6. A strong conviction of having the characteristic feelings and responses of the alternative gender.

**Etiology**

Earlier postmortem studies of brains of transsexual individuals identified an area of hypothalamus, the bed nucleus of stria terminalis (BSTc), in which the volume of nucleus and number of somatostatin neurons which normally differ in biologic males and females (biologic male brains have larger BSTc and higher number of somatostatin neurons) had a volume and number concordant with the perceived gender identity, that is, BSTc in transwomen (who are biologic males) resembled that in the biologic women and vice versa. GI has been associated with polymorphism in genes involved in steroid genesis. Transwomen and transmen as well as men and women have distinct phenotypes in gray and white matter of brain. There is a complex interaction of hormones, genes, and cephalic structure in the formation of gender identity. Sexually dimorphic gene expression has been identified in mammalian brain. The expression of these genes occurs even before gonadal formation. These genes may lead to masculinization/feminization of brain earlier than the SRY gene (gene coding for testosterone synthesis, located on y chromosome) sponsored testosterone surge, which leads to physical differentiation of sex. As a result, these persons feel that they are born in the wrong sexed body (transsexual phenomenon). As “gender” is firmly imprinted into the brain and thus corresponds to psychological identification of self, it cannot be changed. Gender can only be affirmed by bringing patient’s physical sex into alignment with it. Hence, the surgical interventions which aim to relieve GI are best called GAS, sex reassignment surgeries (SRS) or gender confirmation surgeries (GCS).

**Comprehensive Management of GI**

Persons with GI are best managed by a multidisciplinary GICs which can provide primary and ongoing care, gynecologic and urologic care, offer reproductive options, voice and communication therapy, mental health services inclusive of assessment, counselling and psychotherapy, if required, as well as hormonal and surgical gender affirmation. After the initial interview, patient should be given a customized algorithm to follow for achieving a smooth transition. Our current treatment plan is broadly based on our own
However, the authors prefer to obtain both reference letters prior to genital surgery. Recommendations from one referral from a board-certified mental health professional (MHP) working in this field prior to initiation of hormone therapy or breast surgery and two such referrals prior to genital surgery. However, the authors prefer to obtain both reference letters at the outset, as they feel that it makes the path to patient's transition smoother with a higher certainty in diagnosis. Ancillary surgeries do not require any such letters. The letters of recommendation should indicate the comprehensive and ongoing interaction between MHP and the patient, and should not be merely permission letters for starting hormonal or surgical gender affirmation. The letters should include the following:

- The patient's demographic data, results of psychological assessment and a firm diagnosis of GI.
- The duration of patient's evaluation and therapy.
- A statement that any underlying mental health issues have been addressed.
- That the patient is well-informed about the irreversible nature of surgery.
- An informed consent has been taken.
- That the criteria for recommending surgery have been met.
- That the MHP is available for any coordination of care and will welcome any call from the treating physician/surgeon for verifying the contents of the referring letter.

Before starting the reversible and nonreversible interventions for alleviating GI, it is important to discuss fertility preservation options with the patient. Between 37 to 76% patients opt for these, although the actual number undergoing the procedure is smaller, around 3.1% for transmen and 9.6% for transwomen. Hormone therapy and surgery are likely to impact adversely the patient's ability to reproduce; hence, procedures such as sperm, testicular, oocyte, embryo and ovarian tissue cryopreservation should be performed as per requirement. Hormone therapy plays an important role in the management of GI. Puberty suppressing hormones such as gonadotropin-releasing hormone (GnRH) analogues (triptorelin 3.75 mg once a month or 11.25 mg once in 3 months) may be started at around Tanner stage II of puberty (age 10-12 years). By delaying the development of secondary sexual characteristics, this reversible intervention gives the young patient around 4 more years of time to explore one's gender identity and expression, spending the time productively in the company of peers and without the obvious disadvantage of GI and associated social distress and depression. At around 16 years of age, cross-sex hormone therapy (CSHT) may be initiated. CSHT eases the patient's transition into the desired gender role. Deepening of voice, growth of beard and moustache hair, shifts in body fat distribution to masculine and better definition and development of musculature and cessation of menses with clitoromegaly goes a long way in adapting a transman, who was otherwise a biologic woman, in the desired male gender role. Likewise, development of breasts, shifts in body fat resulting in feminine curves, smoother skin, cessation of male pattern baldness with better scalp hair growth and thinning with slower growth of facial and body hair help the transition of a transwoman, who was otherwise a biologic man, in a female gender role. Postorchidectomy, in transwomen, the hormone therapy also plays an important role in bone health. In effect, hormone therapy provides a real-life experience for GI persons, as a partially reversible intervention, prior to surgery. Hence, ISOC1 and 7th SOC's recommend CSHT for 12 months prior to genital surgery for both transmen and transwomen, unless patient is unwilling to take it, or it is medically contraindicated. This provides a real-life experience of living in desired gender role in all seasons, gaining a first-hand experience, and resolving any conflicts regarding gender expression and sexuality prior to undergoing the irreversible genital transformation, thus decreasing the chances of regret. CSHT is also recommended for 12 months as an optional criterion, prior to breast augmentation in transwomen, as after 12 months, there is little if any further increase in breast size, and the patient can realistically assess the need for further surgical breast augmentation. It is important for the patient to undergo periodic consults and laboratory tests as advised by endocrinologist or hormone-prescribing physician, to minimize the risk of side effects from CSHT. It is also important to stop oral estradiol therapy 2 to 4 weeks prior to any surgery, to obviate the increased risk of venous thromboembolism.

### Table 1 GAS performed in transpersons

| Core surgical procedures for transwomen | Orchidectomy, penectomy, vaginoplasty, clitoroplasty, labiaplasty, vestibuloplasty, urethral recession to female position, breast augmentation. |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Core surgical procedures for transmen  | Reduction mammoplasty (the top surgery), hysterectomy, salpingo-oophorectomy, vaginectomy, pars fixa and pendularis urethral reconstruction, scrotoplasty, phalloplasty or metaoidioplasty, placement of penile and testicular implants. |
| Ancillary surgical procedures for transmen and/or transwomen | Hairline and scalp hair restoration surgery, forehead reduction, facial harmonization surgery (feminizing/masculinizing), rhinoplasty, thyroid chondroplasty, affirmative voice surgery, body contouring surgery, lipoplasty, implant surgery (pectoral/ calf etc.) |

Abbreviation: GAS, gender affirmation surgery.
Genital and Nongenital GAS

GAS helps in alleviation of GI, and the associated conditions such as anxiety and depression, and improves quality of life. As per law, any irreversible intervention such as surgery should only be performed after the age of legal majority, which is 18 years in India. There have been instances in the past, where the surgeons were sued by the patients, pleading that the patient had not understood the consent or the surgery was forced upon them. Hence, in India, we prefer to involve the patient in the form of a notarized affidavit in the court in the form of a notarized affidavit paper, called “waiver of liability affidavit”, in which the patient promises not to sue the treating GIC for undertaking the patient’s surgeries. The affidavit explains the patient’s need for transition and releases the operating team for removing the patient’s normal sexual organs, causing irreversible loss of current sexual functioning and fertility. In case the patient is married, a spousal release affidavit may also need to be notarized for extra caution, although it is not legally necessary. Although these affidavits cause some extra expense to the patient, and the added discomfort of having to visit courts, these also go a long way in smoothing the doctor-patient relationship. These affidavits also imply that the state has been informed and the patient has had adequate opportunity and time to think about the implications of GAS. Living in a gender congruent role for at least 12 months, as mentioned in 7th SOC’s, is especially important for the patient before undergoing genital surgery such as phalloplasty/metoidioplasty or vaginoplasty.

Generally, core procedures are those which are performed in all gender incongruent persons, while ancillary procedures are the ones that are performed on demand. Ancillary procedures do not require any letters of recommendation from MHPs, and some of these may be performed before the core procedures. The procedures are detailed in Table 1.

The Author’s GIC

The senior author has been carrying out GAS since the past 27 years, with more than 3000 such procedures done to date. The number of new patients reporting at the OPD has increased from 6 cases in the year 1993 to nearly 150 cases (with 242 GAS procedures done) in the year 2019 (Table 2). Besides plastic surgeons, psychiatrists and endocrinologists, author’s clinic also has gastrointestinal surgeons, gynecologists, urologists and otolaryngologists and is sited in a tertiary care hospital, providing comprehensive affirmative care.

Recent Indian Laws and Legislations in Relation to Transgender Persons, GI and Affirmative Care

a) In Bidhan Baruah Case (2012), Mumbai High Court observed that there is no law which prohibits sex change surgery in India. An adult (> 18 years) can undergo sex change operation, without the need of parental consent.

b) In National Legal Services Authority vs Union of India case 2014 (NALSA), Supreme Court (SC) gave legal recognition to third gender and fundamental rights similar to males and females. The court also advised recognition of third gender in civil and criminal statutes. For gender recognition, the court advised—“follow the psyche” of the person. Insistence on gender affirmative interventions for the purpose of legal change of gender were deemed illegal. Directions were issued for socioeconomic rights, stigma, public awareness, and reservations.

c) Carrying forward the legal battle initiated by Naz Foundation earlier, a 5-judge bench of SC in Navtej Singh Jhohar versus Union of India case (2018) found part of section 377 unconstitutional and decriminalized homosexual consensual sex between adults.

d) In Arun Kumar and Sreeja versus Inspector General of Registration and Ors case (2019), The Madurai Bench of Madras High Court expanded the definition of “bride” in Hindu Marriage Act (1955) to include transwomen, intersex and transgender persons who identified as female. The same judgment also prohibited GAS on intersex persons below the age of legal majority, thus upholding their right to exercise their choice as adults.

e) Following the NALSA judgment, the Rights of Transgender Persons Bill 2014 was introduced by Tiruchi Siva in Rajya Sabha.

Table 2 GAS performed in the author’s GIC in duration January 1 to December 31, 2019

| Type of surgery (data from January 1, 2019, to December 31, 2019) | Numbers |
|---------------------------------------------------------------|---------|
| Breast reduction in transmen (the top surgery)               | 35      |
| Hysterosalpingo-oophorectomy, vaginectomy with pars fixa urethra construction with scrotoplasty and with or without urethral prelanimation in flap | 39      |
| Phalloplasty                                                  | 41      |
| Urethral anastomosis, penile and scrotal implants and secondary surgeries for phallus, urethral stricture, fistulae | 53      |
| Breast augmentation in transwomen                             | 14      |
| Feminizing genitoplasty (modified penile inversion/sigmoid)   | 45      |
| Ancillary and other procedures (facial harmonization, body contouring, affirmative voice surgery, etc.) | 15      |
| Total GAS                                                     | 242     |

Abbreviations: GAS, gender affirmation surgery; GIC, gender identity clinic.
Sabbha and unanimously passed. However, it never made it to Lok Sabha and lapsed. Subsequently, the Transgender Persons (Protection of Rights) Bill, 2016, was introduced in Lok Sabha. It significantly diverged from NALSA judgment and was passed without incorporating the recommendations of standing committee. This became Transgender Persons (Protection of Rights) Act (TPA) and came into force from December 5, 2019. However, there is much opposition to the act on grounds that while NALSA specified the right to self-identify as transgender, female or male, TPA limited this to transgender (not male/female); ii) unlike NALSA, the TPA requires persons to undergo affirmative treatment and surgery to obtain recognition as transgender; iii) there is discrepancy in the punishment for sexual abuse against a woman under Indian Penal Code (IPC) and a transgender under TPA (milder).

Conclusion

GI and variance is a universal and culturally diverse phenomenon. Recent studies indicate a significant rise in the number of persons identifying as transgender. These persons have specific, complex, and different needs and hence should be managed by GICs staffed by persons, who are gender-sensitive and well-versed in managing such patients. The current goal of gender affirmation therapy is “to help these patients reach congruence (clarity in self-image, self-reflection, and complete self-expression), so that they can freely live their life and express their gender in society.

Conflict of Interest

None declared.

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