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REVIEW ARTICLE

A Comprehensive Primer on Transgender Health in India

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Abstract

Background: Transgender health care deals with the prevention, diagnosis, and treatment of physical and mental health conditions along with sex reassignment surgeries and hormonal therapies pertaining to transgender population. Despite the numerous positive developments and efforts made for the welfare of transgender individuals, the plight of these people is yet very dire across the globe. The limited access to specialized healthcare services further exacerbates their predicament due to associated social stigma.

Objectives: This mini-review delves into several crucial aspects concerning transgender healthcare in India. It focuses on the evolution of intersex states at birth and during development in general, the sociocultural challenges faced by transgender people within healthcare institutions, the ethical dilemmas entwined in their care and the need for more gender inclusive medical curriculum.

Results: The current state of knowledge on transgender health among healthcare providers is inadequate and there is a strong need for revision of medical curriculum to suit the needs of transgenders. Matters such as the prevalence of transgender identity, gender dysphoria, sociocultural aspects of disorders in sexual development (DSD), and hormonal and surgical therapies for sex reassignment are explored, emphasizing the importance of gender-affirming surgeries in supporting gender identity. However, concerns regarding coerced surgeries, quack interventions, and lack of specialized medical expertise in treating transgenders are raised. **Conclusions:** Establishing specialized transgender clinics and revising medical curricula, while addressing ethical, legal, and sociocultural challenges of transgender individuals, is vital for improving transgender healthcare in India.

Keywords: Transgender, Transsexualism, Gender Dysphoria, Disorders of Sexual Development (DSD), Mental Health, Sex Reassignment Surgery, Health Services-Needs and Demand, Health Status Disparities.

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Introduction

A four-year-old child was brought to the urology consultant with complaints of ambiguous external genitalia, i.e., a 'penis-like organ', absent testis, under-developed scrotum, and delayed speech development. Upon examination, it was observed that the child had an underdeveloped uterus and ovaries, along with a blind-ending vagina. The caregivers chose to bring up the child as a male.

A fourteen-year-old boy with a 'girlish voice' was accompanied by his parents for medical evaluation with complaints of gynecomastia, girlish voice, and absent testis. Upon examination, the uterus was found on radiological examination and further tests revealed the presence of elevated female sex hormones in his body. The parents wanted to bring up the child as a male.

A 12-year-old girl presented with hoarseness of voice, abnormal external genitalia, and minimal secondary sexual characteristics. Upon evaluation, the uterus and ovaries were absent on radiological examination, and undescended testes were discovered. The parents chose to bring up the child as a female.

A transgender individual who, being biologically male, wanted to remove their testicles to continue their life as a transgender individual in alignment with their sexual orientation. However, due to the insensitivity of healthcare professionals to their needs, they could not undergo the procedure at any healthcare institution and resorted to an unscientific surgery carried out by a quack, which resulted in their death. (It is worth mentioning that the Supreme Court and the Government of India have made it legal to undergo a sex reassignment surgery).

A group of cis-males pretending as transgenders tried to extort money from several shopkeepers in a busy business area of a metropolitan city. These people were apprehended and subjected to a medico-legal examination which revealed that they are cis males and were doing such acts in the guise of transgenders because they believed nobody would apprehend or punish a transgender.

All these instances bring forward the crucial questions of ethical dilemmas faced by medical practitioners in treating transgender patients, sociocultural influences on the decisions of parents of transgender individuals jeopardizing their future sexual role, stigma and fear among doctors associated with providing gender reassignment and other health care services to transgender individuals, the societal ostracization of these individuals, exploitation of transgender identity by others and difficulties faced by these individuals in availing professional health care services. This review focuses on how and why individuals become transgender and includes the socio-cultural aspects related to disorders of sexual development, health concerns of transgender individuals, the stigma associated with seeking healthcare, and the overall welfare of transgender individuals in India.

Literature Review

According to the world population review [2], about 3% of India's population can be labeled as transgender, and this number may not represent actual figures, as many do not disclose their identity. It is essential to understand that gender identity is very different from sexual orientation where gender identity refers to the way people portray their gender on the outside, and sexual orientation refers to the gender

to which they are naturally attracted to. Having said that transgender people may identify themselves as heterosexual, homosexual, bisexual, or none of the above. It is also worth a mention that a few transgender people may experience "gender dysphoria" which can be defined as an acute psychological discomfort or stress caused by a mismatch between their assumed sex at birth and their gender identity.

According to the DSM-5-TR [3], gender dysphoria in adolescents and adults is defined as a significant incongruence between one's experienced or expressed gender and their assigned gender, lasting for a minimum of six months. This incongruence is characterized by at least two of the following:

- There is a clear mismatch between an individual's experienced or expressed gender and their physical sex features, whether primary or secondary (or predicted secondary sexual characteristics for early adolescents).
- The individual seeks to change or eliminate their main and/or secondary sex traits because they significantly clash with their experienced or expressed gender (or, in early teenagers, they wish to avoid the natural development of predicted secondary sex characteristics).
- There is a powerful yearning to have the primary and/or secondary sex characteristics typical of the gender, opposite to their assigned gender.
- There is an intense desire to identify as a gender other than their assigned gender, or a different alternative gender.

- The individual wants to be treated and recognized as a gender other than their assigned gender, or as a distinct alternative gender.
- There is a firm belief that the individual experiences the typical emotions and responses associated with the gender they identify with, or a different alternative gender than their assigned gender.

The Transgender Persons (Protection of Rights) Act 2019 [1] defines a transgender person as someone whose gender does not match the gender assigned at birth. The group encompasses transmen, transwomen, individuals with intersex traits, gender queers, and those with socio-cultural identities like kinnar and hijra (Indian terms for transgender individuals). Intersex features can be attributed to deviations in primary sexual characteristics, external genitalia, chromosomes, or hormones at birth from the conventional male or female standards.

Disorders of Sexual Development (DSD)

Disorders of sexual development are categorized into numerous categories and are associated with abnormal chromosomal, gonadal, or anatomic sex development. Patients with DSDs may present as infants with ambiguous genitalia or as adults with abnormal pubertal development. Numerous pathological conditions, spanning from genetic factors to mullerian anomalies and enzyme deficiencies, can lead to the development of Disorders of Sexual Development (DSD). In another condition involving 46XX infants with congenital adrenal hyperplasia(CAH), excessive androgen synthesis by the adrenal glands results in

the development of virilized genitalia (similar to males) with a variety of morphologies.

In the following paragraphs, our focus will be on exploring the psychosocio-cultural implications faced by individuals with DSD.

Meyer-Bahlburg et al.'s [4] pioneering study looked at the outcomes of chromosomally XY people who were reared as females due to significant nonhormonal anatomic sex development abnormalities. Their study provided compelling evidence supporting the notion of a fixed gender identity. The congenital abnormalities studied included conditions like penile agenesis, cloacal exstrophy of the bladder, and penile ablation. For a significant period, the prevailing approach for these patients involved assigning them a female gender and undergoing surgical feminization. The results unambiguously demonstrated a higher likelihood of patients opting for gender reassignment to male later in life after being assigned female during infancy or early childhood. However, these findings contradict the idea that core gender identity is entirely determined by prenatal androgens. Furthermore, the researchers investigated the level of satisfaction with surgical intervention expressed by persons with 46 XY genotype and discovered that those raised as boys exhibited a significantly higher level of comfort with their gender identity [5].

In a study conducted by Dessens et al. [6], the primary focus was on individuals with 46 XX chromosomes who were raised as females and had Congenital Adrenal Hyperplasia (CAH). The findings revealed a higher incidence of male gender identity compared to the general population of individuals with female chromosomal makeup. While the majority of patients

brought up as females consistently identified themselves as women in the long term, a small subset, approximately 5% in total, encountered notable difficulties concerning their gender identity.

In another study on the same subject, the research included 16 genetic males with cloacal exstrophy ranging in age from 5 to 16 years. Fourteen of the sixteen were designated female at birth, but two were not. Eight of the assigned females later identified as males, and two raised as males remained male. Subjects displayed diverse sexual identities, with some reassigning themselves to male sex. All exhibited male-typical interests and attitudes. The study calls for a reconsideration of clinical interventions for such cases due to the unpredictability of sexual identification. This study provides strong evidence for the biological basis of gender identity, even in cases where genetically and hormonally male individuals were raised as females and underwent feminizing surgery at birth [7].

Another DSD related to 5 alpha-reductase-2 and 17-beta-hydroxy-steroid dehydrogenase-3 deficiencies alter testosterone production and conversion to dihydrotestosterone, resulting in impaired male genital development and possible genital ambiguity. While researching DSDs, we must evaluate the role of aberrant hormone exposure in the development of transgender identity in some people. It is important to note, however, that the majority of transgender people acquire their gender identification independently of abnormal sexual development. Additionally, even those with typical sexual differentiation can experience the development of a transgender identity later in life [8].

Several current hypotheses suggest that the biological basis of transgender

identity lies in the sexual differentiation and maturation of the brain. Gender perception seems to be linked to brain sexual differentiation, which might differ from the physical characteristics of transgender individuals [8]. Swaab et al. propose that this distinction could be due to the timing of brain sexual differentiation, which takes place after the sexual differentiation of gonads during early fetal development [8]. As a result, the amount of genital masculinization may not immediately match the extent of cerebral masculinization.

Transgender neuroscience is a field of study that investigates brain differences between conventional cisgender people and transgender individuals, providing insights into gender identity. Certain brain structures, such as the bed nucleus of the stria terminalis (BSTc) [9] and the third interstitial nucleus of the anterior hypothalamus (INAH 3) [10], have been shown in studies to exhibit patterns more consistent with transgender individuals gender identity. Moreover, MRI studies have identified variations in brain volume and activation patterns among transgender individuals, suggesting unique cerebral characteristics. This notion of transgender-specific cerebral phenotypes finds further support through postmortem brain studies that explore the neuroanatomical aspects of gender identity. These studies, predominantly focusing on male-to-female (MTF) transgender individuals, provide evidence suggesting that atypical cerebral networks in transgender individuals have a neuroanatomical basis [8,11].

Research on white matter properties has also provided evidence for the neuroanatomical basis of transgender identity. According to several studies [8, 12, 13], the corpus callosum shape in transgender people resembles that of people

with shared gender identities rather than those with the same natal sex. Furthermore, white matter fasciculi linked with higher cognitive abilities in female-to-male (FTM) transgender persons who had not received hormone therapy revealed patterns comparable to those seen in normal males. Male-to-female (MTF) transgender people who had not had therapy, on the other hand, showed an intermediate pattern between male and female controls for the same white matter fasciculi.

Health concerns of transgenders in India

The plight of transgender individuals in various parts of the world, particularly in India, has long been overlooked and poorly addressed. Their concerns, often considered insignificant, have shattered their aspirations and left their dreams in ruins. Healthcare issues are among the most critical challenges they face, demanding urgent attention. Despite some improvements in the health system, a significant knowledge gap persists among doctors regarding the specific needs of transgender individuals. Medical education in India falls short of sensitizing future doctors to this aspect, potentially impacting future generations' understanding of the gravity of this problem.

A literature review by Hana et al. [14] in the Western world states that, for many years, mental health clinicians classified transgender and gender-diverse identities as psychiatric disorders. However, the 11th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-11) brought about a change by replacing this contested categorization with the term "gender incongruence." This word refers to the idea that one's gender differs

from the gender assigned at birth. Gender incongruence was transferred from the Mental and Behavioural Disorders chapter to the new Sexual Health Conditions chapter in 2018. People, regardless of their gender, should have the right to live in the best possible health and without prejudice. This is their paramount human right.

Ensuring the highest attainable standard of health and protecting individuals from discrimination are fundamental rights that must be universally accessible, regardless of gender. However, a significant knowledge gap and lack of attention in conducting surveys have hindered the accurate recognition of transgender individuals in our part of the world. In the 2011 population census in India, approximately 4.88 lakh individuals identified as "other" for their gender, encompassing not just transgender individuals but also those who chose not to identify within the binary gender system [15].

According to a study conducted by Blondeel et al. in 2016 [16], transgender individuals have health needs similar to the general population, but they may also require specialized healthcare services such as gender-affirming hormone therapy and surgery. However, evidence suggests that transgender people often experience a disproportionately higher burden of diseases, particularly concerning mental, sexual, and reproductive health matters. The physical anomalies or malformations that lead to being classified as the third gender outside the binary system can be associated with certain mental health risks.

Moreover, they encounter elevated levels of violence, victimization, stigma, and discrimination. Additionally, they encounter obstacles in accessing healthcare and other essential resources, such as education, employment, and housing.

A study in the Indian subcontinent region [17] reported Transgender individuals, officially recognized as a third gender in Nepal, Pakistan, India, and Bangladesh since 2010, face difficulty in accessing health care services. Referred to as hijras (hijra) locally, this civil recognition has significant implications for their social rights, as it ensures their inclusion as beneficiaries in government schemes, claim reservation in educational institutions, and state employment. However, despite this legal recognition, their access to quality healthcare is remarkably limited compared to their cisgender counterparts. It's worth noting that 14.5% of India's total HIV population identified themselves as transgender, indicating a serious lack of adequate knowledge and health promotion for this community. Further KAP (Knowledge, Attitude, Practices) studies pertaining to transgenders are a need of the hour.

A Study by Wanta et al. [18] studied all the published data regarding the specific medical/health concerns posed to transgender individuals, which include the risk of cancer, endocrine-related disorders, surgeries, diabetes, osteoporosis, HIV, etc. The major areas of research are gender reassignment surgeries (both male-to-female and female-to-male), hormone therapy, metabolic syndrome, and the risk of cancer. Very few studies have concentrated on the reproductive health issues of transgender individuals and further studies are needed in this arena as well.

Transgender surgery, also known as gender reassignment surgery (GRS) or sex reassignment surgery (SRS), is a technique used to assist people whose gender identification varies from the gender assigned to them at birth. These procedures are designed to match the physical

attributes of the body to the person's gender identification. In 2019, the demand for sex reassignment surgery surpassed 316 million USD, with Asian countries, notably India, becoming attractive destinations for people seeking these treatments. Male-to-female (MTF) operations, on the other hand, are less common than female-to-male (FTM) procedures. This is one potential area for medical tourism in our country if the state facilitates them in a legal and ethical framework [19].

A self-help and information website [20] emphasizes hormone therapy as the preferred treatment for transgender youth experiencing gender dysphoria, which has also shown success in preventing substance misuse. Despite its benefits, only 415 out of a significant number of 21,000 transgender adults suffering from depression could afford hormone therapy. Early intervention with hormone therapy has been proven to significantly reduce depression. However, the limitation lies in the availability and affordability of such therapy for these individuals.

A study conducted by Dos Ramos Farías et al. [21] on 111 transgender sex workers in Argentina found that 97% of anal mucosa samples contained HPV DNA. Additionally, 83% of the participants had high-risk carcinogenic genotypes, and 71% were co-infected with two or more HPV genotypes. Another study by Poteat et al. [22] reported that transgender people, particularly transwomen, have one of the highest laboratory-confirmed prevalence estimates for Human Immunodeficiency Virus (HIV) infections worldwide.

Given these challenges and health risks faced by transgender and gender-diverse individuals, establishments and health programs must emerge and offer easily accessible support and services tailored to meet their specific needs. A

special attention is needed with respect to sexually transmitted diseases in these individuals.

Various government initiatives and programs have been established to promote the welfare of transgender people in India. In August 2022, the Ministry of Social Justice and Social Empowerment signed an MOU with the National Health Authority to provide a Comprehensive Medical Package, including free cosmetic surgery, under Ayushman Bharat-PMJAY [23]. The Government of India has also launched a separate online portal for the comprehensive welfare of transgender persons which includes providing scholarships for education, and identification documents to claim health and welfare benefits.

South Indian states have demonstrated impeccable records in integrating the transgender community into the mainstream. In Hyderabad, a Government general hospital has taken a significant step by setting up an exclusive clinic for transgender persons, offering a range of medical services, such as psychiatric, endocrinological, surgical, and gynecological care, all under the supervision of a transgender doctor [24]. Tamil Nadu demonstrated commendable inclusivity by establishing the Transgender Welfare Board in 2022 to promote the development of transgender individuals, particularly in education and employment [25].

The Transgender Protection Act of 2019 places a strong emphasis on offering healthcare services to transgender individuals. It includes provisions for separate HIV surveillance centers and sex reassignment surgeries. Additionally, the act advocates for the revision of medical curricula to address the unique health needs of transgender individuals and the

establishment of comprehensive medical insurance schemes to support their healthcare requirements [1].

One impactful program, “Pehchan,” launched in 2008, managed to reach a significant population of transgender community members, many of whom had never accessed HIV prevention services before. This program was developed through consultation involving various stakeholders, government agencies, and NGOs like the India HIV/AIDS Alliance [26].

Additionally, several non-governmental organizations (NGOs) such as the Sahodari Foundation, Udaan Trust, Gay Bombay, Sappho for Equality, and The Humsafar Trust actively work towards empowering the transgender community, advocating for equality, education, healthcare, and spreading awareness about HIV [27]. These efforts collectively aim to improve the lives and well-being of transgender individuals in India.

Certain transgender-specific health complications of hormonal therapy like increased breast cancer incidence and metastatic prostate cancer incidence were also studied by a few researchers and are areas worth exploring [28-32].

The Stigma Associated With Seeking Healthcare

Transgender populations worldwide face significant unmet health needs, resulting in worse health outcomes compared to their non-transgender peers of the same age. Furthermore, comorbid psychiatric problems and drug misuse/abuse are major concerns in the transgender population. Individuals with gender identity disorders are vulnerable to

physical harassment from family, friends, schoolmates, and strangers. Abuse can be physical or psychological, and it is frequently linked to depression over time. Poverty, dependency on illicit methods of income, and a lack of family or social support all contribute to this susceptible population's vicious cycle of abuse and depression, deeply impacting their mental well-being. A study conducted on the US population revealed that major depression tends to increase with age. However, in contrast to this finding, the onset of many psychiatric illnesses is related to the beginning of the gender identity transition, especially in trans people [18]. Tragically, transgender populations experience significantly higher rates of suicidal deaths, which can be attributed to the risks of physical and sexual violence they often face [28-30].

Social stigma emerges as a major obstacle for transgender individuals seeking healthcare and medical advice [30]. The behavior of healthcare professionals toward transgenders requires a significant change, and government hospitals should strive to have sensitized and trained staff to ensure the comfort and privacy of transgender patients. Several doctors who identify themselves as trans woman/man, emphasize on the need for more manpower and sensitivity in government hospitals to cater to the specific needs of the transgender community.

Language also plays a crucial role in the healthcare experience of queer patients. A psychiatrist who identifies as queer and non-binary points out that healthcare workers must be sensitive about the language they use when caring for transgender and non-binary individuals, as medical vocabulary often lacks inclusivity and understanding. An empathetic and non-judgemental approach toward LGBTQ

communities is necessary to improve health-seeking behavior in them.

Several distressing stories highlight the stigma and mistreatment faced by transgender people while accessing healthcare, leading many to avoid seeking medical attention altogether. This fear and mistreatment contribute to the negative impact on the quality of life for transgender individuals [28-30].

Family-based treatment has proven beneficial for transgender and gender-expansive youth, reducing depression and suicidal tendencies [30]. Family acceptance plays a pivotal role in the mental health and overall well-being of transgender individuals, significantly reducing the risk of self-harm. Creating awareness and sensitizing the general public about their behavior towards transgender individuals is crucial for fostering an inclusive and supportive environment.

Hormonal and surgical therapies for sex reassignment

The Transgender Persons Bill passed in August 2019 faced severe criticism as it does not allow transgender individuals the right to self-identify their gender without undergoing sex reassignment surgery. According to the legislation, only those who have undergone such surgery will receive a gender certificate assigned by the district magistrate and screening committee at the district level. Those who haven't undergone the surgery could not be identified as transgender, not as male or female in spite of their non binary nature. This has led to concerns that transgender individuals are being coerced into surgery, while the demand for free or low-cost sex reassignment surgeries remains unmet [36].

Gender-affirming surgeries are not widely available in public hospitals in India. These meticulous procedures are not frequently performed, and not many plastic surgeons have specialized in this field. Private options are costly, with vaginoplasty or phalloplasty costing at least Rs 3-4 lakhs. The lack of guaranteed good-quality service has led to unfortunate instances where some transgender individuals have experienced pain or even lost their lives due to botched surgeries [37]. It was also stated that gender affirmation surgeries are not essential for individuals with gender dysphoria. Many patients opt for top surgery, with only 1 to 4 percent choosing bottom surgery. The success rate for genital reconstructive surgeries is not very high, and complications may arise, necessitating corrective surgeries [38].

The lack of specialized doctors and sensitivity among surgeons has resulted in many botched surgeries for transgender individuals, causing both aesthetic and functional issues. Corrective surgeries are often needed to rectify the damage caused by these procedures [39].

Hormonal therapy has been used since the introduction of testosterone in 1935 and diethylstilbestrol in 1938. It has been shown to reduce depression and improve the quality of life in transgender individuals [38-39].

Gender-affirming surgeries are available for transgender individuals to support their desired gender identity. The WPATH (World Professional Association for Transgender Health) standards of care provide guidelines for surgical approaches, requiring psychiatric and gender specialist/endocrinologist recommendations for those seeking gender reassignment surgery [40]. Surgical options include facial masculinization surgery, mastectomy,

hysterectomy, phalloplasty, testicular prostheses, voice surgery, chondrolaryngoplasty for AFAB (Assigned Female at Birth) individuals, and facial feminization surgery, orchidectomy, vaginoplasty, and breast augmentation for AMAB (Assigned Male at Birth) individuals. The gold standard in gender reassignment surgery developed 70 years ago, involves creating a neovagina through the penile inversion method. Complications related to the rectum and urethra, such as strictures and injuries, are the most commonly encountered post-surgical issues. [41-46].

Discussion

Intersexuality primarily involves issues related to stigma and trauma rather than being solely a gender issue. Surgical procedures should not be performed on intersex children solely to alleviate parents' distress. Seeking professional mental health care for the child and the parents is crucial in such cases.

Families faced with ambiguous genitalia in their children may struggle in deciding how to raise them, considering the assigned gender. Healthcare workers also encounter difficulties in delivering and explaining such news to families. The health care provider has an ethical responsibility to try to make child-centric plans as part of the goals of care. Providing detailed medical information appropriate for the child's age, developmental stage, and cognitive abilities is essential as they grow from childhood to adulthood.

In the context of transgender individuals, various concerns arise regarding medical and surgical therapies, such as ethical considerations, potential loss of future natural fertility, family dynamics, potential health issues, and their

impact on marital and sexual lives. These complex questions underscore the multidisciplinary nature of the challenges faced by individuals with DSD (Disorders of Sex Development) and the importance of a holistic approach in dealing with these scenarios.

The Transgender Health Awareness Initiative aims to combat limited awareness in regions like tribal areas of Bihar, Tamil Nadu, Madhya Pradesh, and Andhra Pradesh. The overarching goal is to create a society free from discrimination against the Trans community and other gender-diverse individuals. Ensuring accessible healthcare services, including cancer screenings, HIV/AIDS counseling, specialized gender-affirming surgeries, affordable hormone therapy, psychiatric treatments, and counseling facilities, is crucial for their well-being and overall national health.

The lack of essential healthcare services has led to increased mortality rates due to cancer, AIDS, complications from unregulated gender-affirming surgeries, and depression among the transgender community. To address these issues, medical education must incorporate gender diversity awareness and educate students about the health risks faced by the Trans community. Implementing such curriculum changes, as suggested by the National Medical Commission (NMC), is vital to bridge the gaps in healthcare and promote inclusivity for all.

Implications for International Audience

While this study does not include religion as a sociocultural aspect to remain open to the Asian audience, it acknowledges that religious beliefs can significantly influence societal attitudes toward transgender individuals. In some regions, transgender individuals are

regarded as sacred, and various religious texts and mythology recognize diverse gender identities. It is essential to consider and respect these cultural traditions. Instead of suppressing the transgender community's culture, we must contemplate and take action to promote understanding and inclusivity, fostering a positive environment for all.

The perspective towards the transgender community varies significantly between different nations, particularly between the Western and Eastern parts of the world. In the West, there is a growing movement towards transgender empowerment and recognition, allowing the community to be more vocal about their issues. However, in the Eastern part, sociocultural situations, stigmas, and taboos still prevail, hindering their progress.

Despite these differences, one common challenge across regions is the persistent gaps in healthcare for transgender individuals. To address this issue effectively, it is essential not only to integrate transgender healthcare into curriculums but also to bring about transformation at the grassroots level of society. This transformation is of paramount significance, not just in India but also in other southern nations collectively known as "The Global South." Legislation is very important, but it should be complemented by philosophical and ideological principles to foster a harmonious societal change.

Health clinics - a one-stop solution [47-49]

Living with a stigmatized identity takes a toll on the mental health of LGBT individuals, and finding understanding medical practitioners can be a challenge.

Dr. Prasad Raj Dandekar initiated HPQI (Healthcare Professionals for Queer Indians) to sensitize professionals to the healthcare needs of the LGBT community. Training and workshops by such organizations aim to create a network of LGBT-friendly doctors and increase awareness.

To promote inclusivity, medical curricula should include transgender competencies, and public hospitals should provide special health services, including sex reassignment surgery and hormonal therapy, as mandated by the Transgender Persons Act, 2019. However, few hospitals offer such services, and private options are financially demanding and beyond reach for these marginalized people.

Establishing transgender clinics with a queer-friendly environment, along with a team of Gynecologists, Urologists, Endocrinologists, and Psychiatrists, would better cater to the needs of transgender individuals. Screening tests for common diseases like HIV and cancers should be provided in these clinics.

Medical professionals can promote inclusivity by using inclusive language and avoiding assumptions about their patient's sexual orientation or gender identity. A little effort in communication and motivation can make a significant difference in the well-being of the transgender community.

Displaying a rainbow flag in the clinic can signal openness and acceptance for transgender individuals seeking medical care, fostering a more comfortable and supportive environment for them.

When one of the authors questioned the National Medical Commission (NMC) about its efforts in bringing changes to the medical curriculum in accordance with the transgenders act, they openly admitted that

except for a few changes made to the Post Graduate (PG) curriculum of the Doctor of Medicine course in Psychiatry by introducing a module on gender dysphoric disorder they haven't done anything substantial. It is very unfortunate that the Under Graduate (UG) curriculum has not been revised at all and no national wide workshops or trainings were organized for medical teachers and doctors to sensitize them to the needs of transgenders.

Conclusion

The recent changes brought by the Government of India (GOI) led to improvements in the area of transgender health care. There are a considerable number of NGOs in India that religiously work for the empowerment of the community and towards non-discrimination in the areas of education and employment.

However, an alarming knowledge gap still exists, and further research is certainly needed to understand the specific diseases and health needs of transgender individuals in our country. The medical curriculum at all levels (including UG and PG) should be adequately revised to include all the aspects related to transgender health. There is also a strong necessity for introduction of more Attitude Ethics and Communication (AETCOM) modules in transgender health, where workshops that simulate the hospital environment should be conducted to sensitize students for future interactions with transgender patients. Such efforts will lead a long way in promoting integrated and holistic health care services to transgender individuals.

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Not applicable.

Data Availability

A copy of the RTI communication mentioned in the text may be obtained for perusal by contacting the authors.

References

1. The transgender persons (protection of rights) bill, 2019. PRS Legislative Research.. Available from: <https://prsindia.org/billtrack/the-transgender-persons-protection-of-rights-bill-2019>.
2. Trans population by country / transgender population by country 2023. Worldpopulationreview.com.. Available from: https://worldpopulationreview.com/country-rankings/trans-population-by-country_
3. DSM V (*Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR)*). American Psychiatric Association. (2022)
4. Meyer-Bahlburg HF. Gender identity outcome in females raised 46 X, Y persons with penile agenesis, cloacal exstrophy of the bladder, or penile ablation. Arch Sex Behav. 2005; 34:423-438.

5. Meyer-Bahlburg HF, Migeon CJ, Berkovitz GD, Gearhart JP, Dolezal C, Wisniewski AB. Attitudes of adult 46, XY intersex persons to clinical management policies. *J Urol.* 2004;171:1615-1619
6. Dessens AB, Slijper FM, Drop SL. Gender dysphoria and gender change in chromosomal females with congenital adrenal hyperplasia. *Arch Sex Behav.* 2005;34:389-397
7. Reiner WG, Gearhart JP. Discordant sexual identity in some genetic males with cloacal exstrophy assigned to female sex at birth. *N Engl J Med.* 2004;350:333-341
8. Saraswat A, Weinand JD, Safer JD. Evidence supporting the biologic nature of gender identity. *Endocr Pract.* 2015;21(2):199-204. Available from: <http://dx.doi.org/10.4158/EP14351.RA>
9. Chung WC, De Vries GJ, Swaab DF. Sexual differentiation of the bed nucleus of the stria terminalis in humans may extend into adulthood. *J Neurosci.* 2002;22:1027-1033
10. Garcia-Falgueras A, Swaab DF. A sex difference in the hypothalamic uncinate nucleus: relationship to gender identity. *Brain.* 2008;131:3132-46
11. Savic I, Arver S. Sex dimorphism of the brain in male-to-female transsexuals. *Cereb Cortex.* 2011;21:2525-2533.
12. Emory LE, Williams DH, Cole CM, Amparo EG, Meyer WJ. Anatomic variation of the corpus callosum in persons with gender dysphoria. *Arch Sex Behav.* 1991;20:409-417.
13. Yokota Y, Kawamura Y, Kameya Y. Callosal shapes at the midsagittal plane: MRI differences of normal males, normal females, and GID. *Conf Proc IEEE Eng Med Biol Soc.* 2005;3:3055-3058.
14. Hana T, Butler K, Young LT, Zamora G, Lam JSH. Transgender health in medical education. *Bull World Health Organ.* 2021 Apr 1;99(4):296-303. doi: 10.2471/BLT.19.249086.
15. Welfare of transgenders Government of India. Gov.in.
16. Blondeel K, Say L, Chou D, Toskin I, Khosla R, Scolaro E, Temmerman M. Evidence and knowledge gaps on the disease burden in sexual and gender minorities: a review of systematic reviews. *Int J Equity Health.* 2016 Jan 22;15:16. doi: 10.1186/s12939-016-0304-1.
17. Ming LC, Hadi MA, Khan TM. Transgender health in India and Pakistan. *Lancet.* 2016 Nov 26;388(10060):2601-2602. doi: 10.1016/S0140-6736(16)32222-X.
18. Wanta JW, Unger CA. Review of the Transgender Literature: Where Do We Go from Here? *Transgend Health.* 2017 Jul 1;2(1):119-128. doi: 10.1089/trgh.2017.0004.
19. Jadhvani S. Hormone therapy for transgender youth in India. *Clinic Spots.* Available from: [\(Hormone Therapy For Transgender Youth \(Benefits, Results, Expectations & More\) \(clinicspots.com\)\)](http://www.clinicspots.com/Hormone-Therapy-For-Transgender-Youth-(Benefits, Results, Expectations & More)).
20. Varsha S. Transgender surgery in India. *Clinic Spots.* Available from: [\(Transgender Surgery In India 2023 \(Know The Best Hospitals, Doctors, Costs And More\) \(clinicspots.com\)\)](http://www.clinicspots.com/Transgender-Surgery-In-India-2023-(Know-The-Best-Hospitals, Doctors, Costs And More))
21. Dos Ramos Fariás MS, Picconi MA, Garcia MN, González JV, Basiletti J, Pando Mde L, Avila MM. Human papillomavirus genotype diversity of anal infection among trans (male to female transvestites, transsexuals or transgender) sex workers in Argentina.

- J Clin Virol. 2011 Jun;51(2):96-9. doi: 10.1016/j.jcv.2011.03.008.
22. Poteat T, Scheim A, Xavier J, Reisner S, Baral S. Global Epidemiology of HIV Infection and Related Syndemics Affecting Transgender People. *J Acquir Immune Defic Syndr*. 2016 Aug 15;72 Suppl 3(Suppl 3):S210-9. doi: 10.1097/QAI.0000000000001087.
 23. Ministry of Social Justice and Empowerment. Memorandum of Understanding with National Health Authority. Available from: <https://internet.pib.gov.in>
 24. TNN. First state-run transgender clinic comes up in Hyderabad's Osmania hospital. *Times of India*. 2023.
 25. Shanmughasundaram J. Tamil Nadu govt to come up with policy for transgender community. *Times of India*. 2022.
 26. Shaikh S, Mburu G, Arumugam V, Mattipalli N, Aher A, Mehta S, Robertson J. Empowering communities and strengthening systems to improve transgender health: outcomes from the Pehchan programme in India. *J Int AIDS Soc*. 2016 Jul 17;19 (3 Suppl 2):20809. doi: 10.7448/IAS.19.3.20809.
 27. Yadav M. Transgender community in India: NGOs working for them!. *Yeh Hai India*. 2021
 28. Colebunders, B.; Brondeel, S.; D'Arpa, S.; Hoebeke, P.; Monstrey, S. An Update on the Surgical Treatment for Transgender Patients. *Sex. Med. Rev*. 2017, 5, 103–109.
 29. McNeil, J.; Ellis, S.J.; Eccles, F.J.R. Suicide in trans populations: A systematic review of prevalence and correlates. *Psychol. Sex. Orient. Gen. Div*. 2017, 4, 341–353.
 30. Testa, R.J.; Sciacca, L.M.; Wang, F.; Hendricks, M.L.; Goldblum, P.; Bradford, J.; Bongar, B. Effects of Violence on Transgender People. *Profess. Psychol. Res. Pract*. 2012, 43, 452–459.
 31. De Blok, C.J.M.; Wiepjes, C.M.; Nota, N.M.; Van Engelen, K.; A Adank, M.; Dreijerink, K.; Barbé, E.; Konings, I.R.H.M.; Heijer, M.D. Breast cancer risk in transgender people receiving hormone treatment: Nationwide cohort study in the Netherlands. *BMJ* 2019, 365, 11652.
 32. Turo, R.; Jallad, S.; Cross, W.R.; Prescott, S. Metastatic prostate cancer in transsexual diagnosed after three decades of estrogen therapy. *Can. Urol. Assoc. J*. 2013, 7, 544.
 33. Malpas J, Glaeser E, Giammattei SV. Building resilience in transgender and gender expansive children, families, and communities: A multidimensional family approach. In: *The Gender Affirmative Model: An Interdisciplinary Approach to Supporting Transgender and Gender Expansive Children*. (Keo-Meier C, Ehrensaft D; eds). Washington, DC: American Psychological Association, 2018, pp. 141–156.
 34. Durwood L, McLaughlin KA, Olson KR. Mental health, and self-worth in socially transitioned transgender youth. *J Am Acad Child Adolesc Psychiatry*. 2017;56:116–123.
 35. Olson KR, Durwood L, DeMeules M, McLaughlin KA. Mental health of transgender children who are supported in their identities. *Pediatrics*. 2016;137:e20153223.
 36. StoriesAsia. What does India's transgender community want?. *TheDiplomat.com*. Available from:

- <https://thediplomat.com/2020/01/what-does-indias-transgender-community-want/>
37. Victoria Lavelle, Health care comes at a price for LGBTQ community, Outlookindia.com. Available from: https://www.outlookindia.com/national/healthcare-comes-at-a-price-for-lgbtq-community-weekender_story-255669
38. Bhatia WBA, Bhaskar EBS. A doctor's guide for transgenders: All about gender affirmation surgery, cost, complications, and treatment. NDTV-Dettol Banega Swasth Swachh India. 2023.
39. Diya Koshy George [PRIDE MONTH] THIS ORGANISATION IS HELPING RAISE FUNDS FOR GENDER REASSIGNMENT SURGERIES Your Story. Available from: <https://yourstory.com/socialstory/2022/06/pride-month-talms-transgender-reassignment-surgeries>
40. 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:S1–259. <https://doi.org/10.1080/26895269.2022.2100644>.
41. Colizzi, M.; Costa, R.; Todarello, O. Transsexual patients' psychiatric comorbidity and positive effect of cross-sex hormonal treatment on mental health: Results from a longitudinal study. *Psychoneuroendocrinology* 2014, 39, 65–73.
42. Achille, C.; Taggart, T.; Eaton, N.R.; Osipoff, J.; Tafuri, K.; Lane, A.; Wilson, T.A. Longitudinal impact of gender-affirming endocrine intervention on the mental health and well-being of transgender youths: Preliminary results. *Int. J. Pediatr. Endocrinol.* 2020, 2020, 8.
43. Pelusi, C.; Costantino, A.; Martelli, V.; Lambertini, M.; Bazzocchi, A.; Ponti, F.; Battista, G.; Venturoli, S.; Meriggiola, M.C. Effects of Three Different Testosterone Formulations in Female-to-Male Transsexual Persons. *J. Sex. Med.* 2014, 11, 3002–3011.
44. Djordjevic, M.L. Novel surgical techniques in female to male gender confirming surgery. *Transl. Androl. Urol.* 2018, 7, 628–638.
45. Van der Sluis, W.B.; Tuijnman, J.B.; Meijerink, W.J.H.J.; Bouman, M.-B. Laparoscopic Intestinal Vaginoplasty in Transgender Women. *Urol. Clin. N. Am.* 2019, 46, 527–539.
46. Heß, J.; Sohn, M.; Küntscher, M.; Bohr, J. Geschlechtsangleichung von Mann zu Frau [Gender reassignment surgery from male to female]. *Urol. A* 2020, 59, 1348–1355.
47. Shyam K. It's not that queer. *Thehindu.com*. 2020. Available from: <https://www.thehindu.com/education/its-not-that-queer/article30542>
48. Desai V. Making healthcare queer-friendly. *Healthcare Executive*. 2021. Available from: <https://www.healthcareexecutive.in/blog/healthcare-queer-friendly>
49. Shetty D. How to treat queer patients. *VICE*. 2018 Available from: <https://www.vice.com/en/article/xwmn-zq/how-to-treat-queer-patients>