

Transgenders in Sports: When Physiology and Equality are Incongruous

Anilendu Pramanik¹, Akshita Goel^{1,*}, Rajatmani Tripathi¹

¹ MINISTRY OF YOUTH AFFAIRS AND SPORTS- Guru Nanak Dev University-Department of Sports Sciences and Medicine, Amritsar, Punjab-143005, India.

* Corresponding Author Email: akshgoel1411@gmail.com

Received: 11-12-2021; Revised: 21-12-2021; Published: 22-12-2021

Abstract

INTRODUCTION: It's critical to understand evolving connotations' sexual identity, as well as what they entail in sports. Acknowledge how sexuality can have role in determining level of competence required to participate in sports. There should be no irrational classifications based on gender or sexuality. With passing years, already cisgendered world of sports has afforded female athletes' equitable opportunities. This transformation in perspective has resulted in an increase in proportion of transgender athletes in long run. This review examines current stance regarding transsexuals and the discrimination they face, whether blatant or stealth, as well as how breakthroughs are rapidly evolving to construct a better realm for equal opportunity in sports to everyone. **MATERIALS AND METHODS:** An electronic literature search of studies published between August 2018 and August 2021 was completed. - Inclusion criteria: (1) article published between January 2010 and August 2021; (2) human subjects; (3) published in English; (4) including participants relating to transgenders. **RESULTS:** 14 studies meeting inclusion criteria were considered for qualitative syntheses. **DISCUSSION:** In sports, unfair treatment and barriers have an effect on physical activity level and overall health of transgenders. Adverse experiences in sporting competitions due to restrictions in policies, with no major evidence-based policy making practices as far as transgender inclusion is reported. Discrimination against transgender individuals at various levels leads to negative impact on their sports participation. More research is needed in order to formulate upgraded and more evidence-based guidelines, that aid in maintaining the balance between equality and ethics of sports participation.

Key words: Transgenders, Sports Physiology, Sports, Equality, Fairness.

1. Introduction

In respectable profession like sports, unjustified differentiation on the grounds of sex or orientation shouldn't be observed. With time, the historically male-dominated sports world has become more egalitarian, affording female participants equivalent opportunities on field.

Through period, the proportion of transsexual competitors has attributed to the growth of this shift in outlook. (Chanda & Singh, 2021) When it comes to sexual expression and sports, there are still substantial inequities all across the world. There are impediments between gender identification and sport that make participation in sports more challenging for

certain segments of the population. Gender marginalization is a concept that applies to a multitude of locations and originates as soon as in middle and high school. (Joy, 2020) In today's society, open and equitable depiction in the media is supposed to ensure that everyone in our societal structure is given equal opportunities. Male-To-Female athletes are more adversely perceived in the media stories, text, and photographs presented. MTF athletes are commonly referred to by their birth names with erroneous pronoun language, and before and after conversion comparison photographs are published, both of which are in contravention of standards. (Adams, 2020) The participation of elite transwomen competitors in the women's division has sparked a wave of media interest in recent years. The precarious balance between transwomen's inclusion based on "a fundamental human right for everyone to be recognized in the gender in which they identify" and fairness in contexts of how much of a potential advantage an elite transwomen athlete has over elite cis-women athletes is the subject of constructive discussion. Further below lies the conundrum: while it is unquestionably necessary to include transwomen in all segments of the population, notably elite sport, impartiality is also paramount to the legitimacy of elite sports. (No Title, n.d.)

Individuals who do not recognize as cisgender or heterosexual face a significant burden in the sports world due to the sheer male-dominated hegemony. Regardless of the fact that sport has long been acknowledged as a great tool for teaching fairness, equality, and good conduct, the portrayal of transgender "difficulties" by sports regulatory authorities and the sports media has cast aspersions on this ideal. (Tishev, 2019) Trans individuals face a multitude of barriers and transphobic hostility, according to several reports. It is established that gender revelation has a deleterious effect on trans people's engagement in sports, most probably linked

to a desire to avoid prejudiced confrontations and rejection in these areas. (Pereira-García et al., 2021) Individuals who identify as transgender have inconsistencies between the gender given to them at birth and their gender identity/experienced gender. The premise of competitive sport is fair and equitable, and because of considerations regarding transgender people's perceived overwhelming advantage, the conundrum of whether transgender people should be allowed to compete in consonance with their gender identity has been lifted and fiercely disputed among sport organizations, among competitors, and among spectators. Androgenic hormones (primarily testosterone) are assumed to provide an athletic advantage in competitive sports. As a result of its high intrinsic testosterone levels, transsexual females are believed to have an advantage in sports. Notwithstanding being treated with testosterone if they choose to medically transition using cross-sex hormones, transgender males are not regarded to have an athletic advantage. However, there has been a dearth of research that has looked specifically at how androgenic hormone levels are correlated to athleticism in both cisgender and transgender people. To make things simpler for transgender athletes to compete, the International Olympic Committee (IOC) stated in 2004 that they would be allowed to compete in all future Olympic games if they have concluded their medical transition. (Jones et al., 2017) Transgender people encounter prejudice, discrimination and face self-stigma since they are cognizant of biases and various forms of bigotry levelled at them. The International Olympic Committee (IOC) modified its standards on transgender athletes' participation in 2015. The new rules cut the time it takes for a transgender woman to be in the "typical female range" of testosterone suppression and estrogen medication from two to one year. The most significant alteration was the elimination of the need for a full lower surgery, which

included internal and external genital modification. (Cunningham et al., 2018)

Many sports regulating bodies have proceeded under the presumption that sex is constant and binary, culminating in a hostile atmosphere for transgender athletes. (Love, 2017) Although there have been recent debates surrounding transgender women in sports, transgender participation in sports has a much medieval history. (Riseman, 2021) To break stereotypical views about the transgender community, Society today needs to be informed about the third gender. This will provide an amenable educational environment for transgenders to pursue higher education and entering the workforce with dignity, which will be socially acceptable and economically beneficial, resulting in a better social standing in normal society. The biological differences between males and females are being used to establish sports participation criteria, as males have a physiological edge in strength and endurance due to testosterone exposure. The quandary for sports regulating organizations is identifying which category transgender athletes should be entitled to engage in so that competition equality is maintained while transgender athletes are offered equal opportunity. As according IOC recommendations from 2015, testosterone levels in female athletes should be less than 10nmol/L for the preceding 12 months. Timothy Roberts et al. conducted a study to examine the effects of gender affirming hormones in transgender military personnel and reported that transwomen undergoing gender transition via hormone therapy preserved their athletic superiority over cis-women even after 12 months of treatment. As a consequence, regulating bodies such as the IOC and IAAF face a daunting task in upholding the delicate balance between justice and equality in sports when it comes to transwomen's participation in women's sports. More research is clearly required in order to develop updated and evidence-based guidelines that aid in striking the

balance between equality and sports participation ethics. (Roberts et al., 2021)

As a nutshell, the objective of this review was to highlight the current predicament in respects to transgenders and the unfairness they endure, either overtly or covertly, and its implications on sport, as well as how developments are expanding over time to shape a new sphere for equal opportunity in sports for all. The essential goal of the paper was to review continually advancing meanings of sex, sexuality and gender; and what they mean for the universe of sports.

2. Materials and Methods

Ethical Statement: As this review was compiled of already ethically approved studies, no ethical clearance was needed, moreover it is just qualitative synthesis, not involving any human or animal subjects.

Information Sources- The searched databases included PubMed, Google Scholar and Medline.

Search Strategy- A literature search was developed by the primary author. An electronic literature search of studies published between August 2018 and August 2021 was completed. Studies published before 2018 were not included in this search to maintain recency. Keywords used were "transgender", "sports", "quality", "fairness".

Bibliographies of full texts were surveyed for additional pertinent studies through manual search of the citations. This was done to minimize the possibility of overlooking any studies missed in the computerized database searches. Limits were applied to English language and dates.

Eligibility Criteria- Inclusion criteria: (1) article of any genre published between August 2018 and August 2021; (2) human subjects; (3) being available in English; (4) including a population or sub-population of participants relating to transgenders; (5) Due to the paucity of tools and guidelines

that address the specific needs of a pediatric population, only studies with participants that were the equivalent of at least 6 human years old were included. (6) have outcome of interest.

Exclusion criteria- (1) Any article published before January 2010, (2) Not including human subjects, (3) Not being available in English

Selection Process- Once studies were identified, 2 independent reviewers examined each article's title and abstract to determine whether the article met the inclusion criteria. If the reviewers disagreed, a third reviewer made the determination and then was confirmed for eligibility and relevance. At least 1 reviewer examined reference lists of accepted articles to identify any studies that were not retrieved through the literature search.

3. Results

All the studies meeting criteria were considered for qualitative syntheses only. 14 studies met the inclusion criteria.

4. Discussion

A. Gender based discrimination:

In sports, the unfair treatment and barriers have an effect on physical activity level and overall health of transgender individuals. These barriers may include discrimination or competition threat. Gender based discrimination, in simple forms begins with discrimination between men and women, but it takes a more complex form between cisgender and transgender individuals. Exclusion from sports based on gender identities is unethical, and can negatively affect the person's health. It is in the hands of major sporting bodies and corporations, that they make sports a more inclusive field, and set an example for other fields in the process. (Joy, 2020)

Transition is the process during which a transgender person changes their gender expression to the gender by which

they identify. Transition can involve many different practices; starting from little changes in the way of dressing, styling their hair and also involving medical and surgical procedures which bring about significant and often irreversible changes. Some people also prefer changing their name and pronouns to be consistent with their gender identity. Participation of transgender athletes in sports is influenced by the idea of CIS normativity and traditional structures of gender binarism. (Pereira-García et al., 2021)

On June 15, 2020, a court in Georgia, USA ruled that discrimination against transgenders qualified as discrimination "because of sex"; thus taking an important step towards prohibiting sex discrimination. (Gillen, 2021)

A survey conducted in London in the year 2007 found that almost half of transgender individuals had apprehensions in training at sports centres due to reservations of these centres to allow the use of changing rooms according to their identified gender. Another survey in the city, in 2006, revealed similar reservations among transgender individuals regarding using sporting facilities. Respondents recalled using disabled toilets as an alternative. A study by Halberstam in 1998 identified the issue of toilets and changing rooms among major hindrances faced by transgender individuals in public places and sporting facilities.

B. Media perception of transgender athletes:

Transgender athletes consist of a miniscule number in the population; thus, many people only know about the male-to-female and female-to-male transgenders through media coverage. The sports industry is also driven by commercial gains, which also leads to gender-based discrimination and pay gap. These problems get amplified when it comes to transgender athletes. (Adams, 2020)

This article used oral interviews and media reports to analyse the history of transwomen's participation in Australian sports since 1970s. It also focussed on public perception towards the issue of gender, sexuality and fair play in sports in relation to transgender athletes. It also took into account the life experiences of transgender sportswomen and their mechanisms of expression gender identity. In fact, gender presentation and (in)visibility of transgenders heavily influenced the acceptance rate of transgender athletes by sporting governing bodies, associations, media, their teammates and sporting community as a whole. Transgender women's presence in sports frequently led to debates on sex, gender and body. This mainly stemmed from rigid understandings and beliefs of gender binarism. It also revealed that transwomen athletes have historically faced a lot of struggles in affirming their gender identity while being part of the sporting universe. (Riseman, 2021)

Recent case of New Zealander weightlifter Laurel Hubbard's participation in Tokyo Olympic 2021 caused a backlash in certain sections of the sporting world and media. Leading to debates whether it was fair for Hubbard (who was assigned male at birth, and competed in male category during their early days) to compete with cis-women. Such reactions and backlash consolidate the findings of a study which stated, that recent growth in inclusiveness for transgender athletes is too little, and much more focussed and concrete efforts are needed to bring about irreversible and positive changes in policy as well as perception. (Love, 2017)

C. Indian Scenario

This paper puts light on the problems faced by 'third gender' individuals in India. These individuals are called by names like Hijras, Eunuchs, Kinnars etc. Despite of having a strong representation in the Hindu mythology and medieval history,

the transgender individuals face a slew of problems, arising from public perception towards them, which was formed during the years of British rule. Census of India in 2011 revealed that the literacy rate in transgender individuals was significantly lower than general population. Young transgender individuals also faced physical, sexual and emotional violence; and were subjected to discrimination and neglect in schools. The general insensitive approach of teachers, parents and society as a whole lead to negative impact on the life choices of these individuals. (Tandale et al., 2021) Inability to attain basic education and support markedly affects the life of young transgenders in India. Though the sporting world is gradually evolving and becoming more inclusive, participation of Indian transgender athletes seems like a distant thought as of now.

D. Policymakers' dilemma: Equality or fairness

Men have better records as compared to women when it comes to sports. These facts are attributed to male physiology; including testosterone levels, increased muscles mass, larger lungs and heart that leads to enhanced aerobic capacity, and in turn enhances the athletics performances in male athletes. It is on this basis of physiological advantage, and to maintain fairness of competition, sports are divided into men's and women's categories. But there are people who do not identify themselves into these two categories (i.e., transgenders). The IOC guidelines state that transwomen with testosterone levels under 10nmol/L for 12 months prior to competition can participate in the women's category, without any surgical requirements. However; these recommended testosterone levels are still higher than the average levels in cis-women. Additionally, post pubertal hormone therapy does not change certain characteristics of male physiology like bone structure, heart size and lung volume. The scientific evidence that directly concerns transwomen

athletes having advantage in performance is very scant. But, if the physiology of elite male athletes is taken into account, it can be hypothesised that elite transwomen athletes (notably those who do not undergo orchiectomy) may likely have athletic advantage over the elite cis-women athletes.

Transgender individuals had adverse experiences in sporting competitions due to restrictions in policies, with no major evidence-based policy making practices as far as transgender inclusion was concerned. Most studies found in literature related to transgender participation in sports are qualitative in nature, with very scant studies focussing on physiological aspects. Generalisations based on the findings from these studies may lead to a biased perception of the transgender athletes, thus further hindering their participation in sports. These studies clearly revealed that transgender athletes faced various hurdles, including lack of gender-neutral changing rooms, lagging inclusiveness in the mindset of administrators and general negative perception while participating in physical activities and sports. These discriminatory policies affect the transgender athletes beginning at local club levels till international sporting organisations. Future studies are definitely required to further our knowledge of transgender athletes and their physiology as well as psychology. These studies will help in shaping a more inclusive and fairer field among the athletes. (Jones et al., 2017)

Testosterone based rules were introduced by the International Olympic Committee in 2016. Generally, it is believed that even after transition or hormone therapy, the transgender women athletes retain some of the physiological advantage over cis-women due to exposure to endogenous testosterone. A study by Harper revealed comparable performances in eight transgender distance runners in both male and female divisions. There is need of more such studies to improve our understanding of the athletic advantages or

disadvantages of transgender athletes. Controversy also surrounds transmen (female-to-male) athletes, as they are allowed to take exogenous testosterone injections, and can compete against cis-gender men; while cis-gender men are banned from taking exogenous testosterone. Individual case studies show that even after taking exogenous testosterone, transmen have comparable athletic prowess to their cis-gender competitors. More scientific research is needed in this area to draw a concrete understanding of the matter. (Hargie et al., 2017)

Endogenous testosterone has played spoilsport for many women athletes and their sporting careers, as higher levels render them ineligible for competition (most notable being Caster Semenya). There is no such limit for endogenous testosterone in male athletes. Available scientific evidence shows there is no relationship between endogenous testosterone levels and athletic performance in female athletes. Thus, the ineligibility based on testosterone levels in women is not entirely justifiable. There are bigger influencing factors that may influence performance, like availability of facilities, nutrition, socioeconomic status, coaching etc. These factors should also be taken into consideration while talking about fairness in sports. Similar is the case of transwomen, who are hypothesized to have athletic advantage over cis-gendered women due to exposure to endogenous testosterone. The stigma associated with transgender athletes works at both organisational as well as at individual levels, in a way affecting the decisions of sports policymakers. (Cunningham et al., 2018)

Study conducted by Timothy Roberts et al., to assess the effects of gender affirming hormones in transgender military persons showed that transwomen undergoing gender transition via hormone therapy retained their athletic advantage over cis-women even after 12 months of therapy. These advantages were most likely due to exposure to testosterone at puberty,

that conferred musculoskeletal features, which were irreversible with gender affirming hormone therapy. Thus, governing bodies like the IOC and IAAF have their hands full in order to maintain the fine line between equality and fairness in sports, when it comes to participation of transwomen in women's sports. It is clear that more research is needed in order to formulate upgraded and more evidence-based guidelines, that aid in maintaining the balance between equality and ethics of sports participation. (Roberts et al., 2021)

The meaning of sexuality and gender is constantly broadening; and it is also having an impact on sporting universe. However; much more needs to be done in order to ensure equal rights to transgender individuals. (Chanda & Singh, 2021)

5. Conclusion

The purpose of the study was to focus on the current literature on transsexual sportspersons, as well as the challenges that these athletes and sporting organizations encounter along the way of inclusiveness. We can state unequivocally that research and evidence-based policymaking are critical to making sports more equitable and ethical. There is no denying that prejudice against transgender people on a range of perspectives has a damaging influence on the ability to participate in sports. There are a few researches that suggest that transwomen who are exposed to testosterone have an athletic edge over cis-gender women, although the scope of these studies is constrained. More research is needed in this area to establish the truth and influence public perceptions of transgender athletes. Equality and inclusivity are integral parts of an ever-changing society, and major sport bodies such as the International Olympic Committee and World Athletics, amongst many others, will have to lead by example by treading forward and making sports more accessible for marginalised transgender

athletes while also ensuring complete fairness on the competitive field.

References

- Adams, D. (2020). The power and impact of framing transgender athletes in sports [Unpublished master's thesis]. The Pennsylvania State University.
- Chanda, S., Singh, A. (2021). Transsexuality right a new era of challenge at 21st century of sports. *Symbiosis Law School*, 1(1), 25-39.
- Cunningham, G.B., Buzuvis, E., & Mosier, C. (2018). Inclusive spaces and locker rooms for transgender athletes. *Kinesiology Review*, 7(4), 365–374.
<https://doi.org/10.1123/kr.2017-0062>
- Gillen, J. (2021). Striking the Balance of Fairness and Inclusion: The Future of Women's Sports After the Supreme Court's Landmark Decision in *Bostock v. Clayton County*, GA. *Jeffrey S. Moorad Sports Law Journal*, 28(2), 415-447.
- Hargie, O.D.W., Mitchell, D.H., & Somerville, I.J.A. (2017). 'People have a knack of making you feel excluded if they catch on to your difference': Transgender experiences of exclusion in sport. *International Review for the Sociology of Sport*, 52(2), 223–239.
<https://doi.org/10.1177%2F1012690215583283>
- <https://blogs.bmj.com/medical-ethics/2019/06/19/when-ideology-and-physiology-dont-align-transwomen-in-elite-womens-sport/>
- Jones, B.A., Arcelus, J., & Bouman, W.P., Haycraft, E. (2017). Sport and transgender people: a systematic review of the literature relating to sport participation and competitive sport policies. *Sports Medicine*, 47(4), 701–716.

<https://doi.org/10.1007/s40279-016-0621-y>

- Joy, C. (2020). Gender Exclusion in Sports and its Influence on Health.
- Love, A. (2017). The tenuous inclusion of transgender athletes in sport. In *Transgender athletes in competitive sport*, Routledge, 194–205.
- Pereira-García, S., Devís-Devís, J., Fuentes-Miguel, J., Sparkes, A.C., Pérez-Samaniego, V. (2021). Exploring Trans People's Narratives of Transition: Negotiation of Gendered Bodies in Physical Activity and Sport. *International Journal of Environmental Research and Public Health*, 18(18), 1-14. <https://doi.org/10.3390/ijerph18189854>
- Riseman, N. (2021). A history of transgender women in Australian Sports, 1976–2017. *Sport in History*, 1–28. <https://doi.org/10.1080/17460263.2021.1938194>
- Roberts, T. A., Smalley, J., & Ahrendt, D. (2021). Effect of gender affirming hormones on athletic performance in transwomen and transmen: implications for sporting organisations and legislators. *British Journal of Sports Medicine*, 55(11), 577–583. <http://dx.doi.org/10.1136/bjsports-2020-102329>
- Tandale, P.P., Mugale, D., & Sudhakar Rao, S. (2021). National Conference. *Aayushi International Interdisciplinary Research Journal (AIIRJ)*, 1-123.
- Tishev, T. (2019). Re-imagining sports reporting: Creating social change in the area of transgender discrimination. *Loughborough University*, 1-40.

Acknowledgements:

We would like to acknowledge Dr. Sudeshna Das for serving as the third reviewer and for her valuable suggestions. We are grateful to all the authors, participants and the supporting staff of the primary studies for such great work. Last but not the least, we would like to thank our family and friends, especially Mr. Charudatta Ahire for their constant support and motivation.

Funding

No funding was received for conducting this study.

Conflict of interest

The authors have no conflicts of interest to declare that they are relevant to the content of this article.