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Law, Policy, and Physiology as Determinants of Fairness for Transgender Athletes

Sharon A. West-Sell, PhD, ATC, John Mark Van Ness, PhD, and Margaret E. Ciccolella, EdD, JD
Department of Health and Exercise Science, University of the Pacific, Stockton, CA

Abstract: Fairness in sport competition is often dictated through law and policy. The development of policy arises from not only an understanding of physiology and the potential consequences that can result from unfair competitive practices, but also the desire to be culturally and socially sensitive. This manuscript provides a brief historical review of legal policies concerning transgender sport participation and examines the physiological evidence and current practices for fair competition. Critical to the specific issue of transgender participation in sport is the distinction between gender and sex.

INTRODUCTION

Law and physiology are primary determinants of both opportunities and physical ability to participate in sport. For decades, we have struggled with fairness in providing sex-based athletic opportunities relying on law and policy for guidance. Court cases and relevant policies mix scientific evidence and cultural sentiment in determining the scope and extent of our fairness. The participation of transgender athletes in sport is directly relevant to these considerations.

In the 1970s, Renee Richards, a transgender woman, sued the United States Tennis Association (USTA) for alleged sex discrimination when she was not allowed to play in the U.S. Open as a female. The case focused upon

competitive fairness and physiology but failed to explicitly define sex in ruling that Richards was legally a female. During that same period, Title IX was changing the educational landscape for girls and women by explicitly prohibiting sex-based discrimination in educational programs, including athletics. “Sex” is the operative term at the heart of this legislation. Yet, Title IX does not define sex.

Recent Title IX policy and law conflict on definitions of sex. A conflation of sex and gender is explicit in the rulings of some Title IX cases addressing sex-based discrimination to transgender students. The failure to distinguish “sex” and “gender” has resulted in inconsistent rulings for transgender students (1,2).

This article takes the perspective that gender is a cultural construct that largely describes self-identity while sex is a biological construct that traditionally refers to reproductive and anatomical differences between males and females. See GG v. Gloucester School Board (1) pp. 721-722 for a discussion of definitions of sex using standardized dictionaries from different decades. It will explore law that prohibits sex-based discrimination relevant to transgender opportunities in sport. It will also consider irrevocable physical attributes associated with the biology of sex that are often ignored or confused in legal decisions. Finally, this article will address unintended consequences of our law or policies when science is not fully integrated into a decision about competitive opportunities.

LAW

Early transgender law and policy in professional sport dueled in 1977 when Renee Richards, a physician and transsexual[1] woman in her early 40s, sued the USTA to compete as a woman in the U.S. Open. Sex discrimination under New York Human Rights Law was the primary basis for the suit (3).

Immediately after filing her lawsuit, the USTA initiated a new genetic testing policy that required Richards to pass a sex chromatin test (Barr Test) in order to compete as a woman. The issue of genetically based advantages for a transsexual woman in sport competing with women was a central issue. The USTA argued the need for the test in order to prevent competitive unfairness stating that Richards’ had, for example, advantages associated with her physical development as a man, e.g., height and strength. Medical testimony on behalf of Richards declared that surgical reassignment and hormonal

[1]At the time of her lawsuit, Richards was characterized as a “transsexual”. The court defined transsexual as an “individual anatomically of one sex who firmly believes he belongs to the other sex. This belief is so strong that the transsexual is obsessed with the desire to have his body, appearance and social status altered to conform to that of his "rightful gender”. Richards v. USTA (1977), pp. 267,269, 270-271. Richards is now characterized as a transgender woman (Bazelon, 2012). It is beyond the scope of this paper to address the distinctions, but transgender is the more commonly used term today.

therapy caused her to resemble a hysterectomized/ovariectomized woman anatomically and to meet female norms regarding weight, height, and physique. Billie Jean King, who played doubles with Richards, testified that Richards did "not enjoy physical superiority or strength so as to have an advantage over women competitors in the sport of tennis" (Id. at pp. 268-271) (3).

Very little in the case addressed issues of "gender" or self-identity, instead the case focused upon traditional notions of physical differences between men and women. The arguments, evidence, and analysis examined whether Richards had an unfair competitive advantage based upon genetics. Sex was implied but not explicitly defined. In the end, the New York Supreme Court ruled in favor of Richards finding "overwhelming medical evidence" that she was female. The court held that the requirement to pass a Barr Test was "grossly unfair, discriminatory, inequitable, and violative under the Human Rights Law of [New York]." The Court's stated reasoning was that the test should not be the sole criterion for determining sex (Id. at pp. 272-273) (3).

Richards went on to achieve international prominence in tennis with women's ranking of 19th in 1979, success she did not realize as a male. Decades later, Richards acknowledged the contribution of genetics to her success as a female athlete stating, "I know if I'd had surgery at the age of 22, and then at 24 went on the tour, no genetic woman in the world would have been able to come close to me" (4).

During the same decade as the Richard's case, Title IX of the Education Amendments of 1972 was being legislated and regulated. Title IX prohibits sex-based discrimination in educational programs (including sport) and facilities for schools receiving financial assistance (5,6). It provides an exception for sex-segregated facilities such as locker rooms, restrooms, and showers (7).

In 2016, the Title IX rights of transgender students were explicitly at issue when the Office of Civil Rights (OCR) issued a Dear Colleague Letter (DCL), prohibiting discrimination based on a student's gender identity and transgender status.[2] It required schools to allow transgender students access to sex segregated facilities consistent with their gender identity, including locker rooms and rest rooms. The letter also required schools to treat students consistent with their gender identity even when a student's education records indicated a different sex (8).

[2]The Office of Civil Rights (OCR) as an agency under the Department of Justice and the Department of Education jointly issue "Dear Colleague" letters to educational institutions that offer policy and compliance guidelines for Title IX. These interpretations of Title IX are persuasive but not binding on the courts. Auer v. U.S., 117 S.Ct. 905 (1997). Also, see Texas v. United States (2016), a case that did not follow OCR policy at the time it was decided.

A caveat for athletics existed that allowed consideration of "medical" issues. The policy statement explicitly addressed competitive fairness and physical safety by stating no prohibition of "age-appropriate, tailored requirements based on sound, current, and research-based medical knowledge" relevant to the "impact of the students' participation on the competitive fairness or physical safety of the sport" (8).

GG v. Gloucester School Board (2016) relied heavily on OCR's 2016 policy. The court ruled that Title IX requires schools to provide transgender students access to restrooms congruent with their gender identity (p. 715, 723). Legislative silence on how schools should determine whether a transgender is male or female and conflicting definitions of sex that include morphological, physiological and behavioral considerations were persuasive to the court (pp. 720; 721-722). While this case examined access to restrooms, the ruling blurred distinctions between sex and gender identity and had ramifications for transgender athletes in educational programs (1).

Texas v. United States (2016), also an access case, declined to follow OCR and Gloucester. The court ruled that the plain meaning of sex as used in Title IX regulation when it was enacted referred to biological and anatomical differences between male and female students as determined at their birth (pp. 832-833). In an apparent reference to definitions that conflate sex and gender, the court stated that "A definition that confuses instead of clarifies is unpersuasive" (2).

In 2017, a new DCL rolled back its 2016 protections to transgender students. It reversed the use of sex-segregated facilities based on gender identity and criticized the 2016 policy for giving rise to "significant litigation regarding school restrooms and locker rooms" (9). Texas v. United States (2016) was specifically referenced. The roll back was silent on the issue of athletics, arguably leaving in place consideration of fairness and safety provided by the 2016 DCL. It should be noted that as a result of the rollback, the Supreme Court send GG v. Gloucester back to the Fourth Circuit Court of Appeals to be reconsidered in light of the revisions to the guidelines (10).

Other agencies such as the International Olympic Committee (IOC) and the National Collegiate Athletic Association (NCAA) have transgender policies that attempt to maintain fairness in competition. Both agencies recognize sex as a physiological construct in their regulations. For example, the NCAA will not allow a transgender woman to compete against other women until completing one year of testosterone suppression treatment while the IOC does not allow a transgender woman to compete against other women until testosterone levels are below 10 nmol/L for at least 12 months (11,12). Neither the NCAA or IOC places restrictions on a transgender man who wants to compete

against other men once they begin taking hormone therapy and neither agency defines sex as a matter of policy (11,12).

From a legal and policy perspective, a ruling from the Supreme Court would likely settle disparate rulings and U.S. policies on sex and transgender participation. Competitive fairness and physical safety are important issues that rely upon an understanding of the physiology of sex. A basic understanding of the physiology of sex is essential to resolve the competing interests of science and culture.

PHYSIOLOGY

Biomedically, human male and female sex is binary and determined by the presence or absence of a Y chromosome. At the level of the chromosome, hormones, gametes and genitalia, sex is nearly exclusively dimorphic and results in two distinct phenotypes. It is often stated that millions of people are intersex (13), when in fact the phenomenon is rather rare. But the existence of cases where sex is not clearly dimorphic makes this a challenging area to explore (14), especially given the history of sexual assignment by physicians soon after birth and policy makers hesitance to exclude transsexual athletes.

The construct of gender, in contrast to sex, is socially-derived and may be independent of chromosomal distinction. During gender reassignment, the phenotype may be surgically changed, and the hormonal environment pharmacologically changed to facilitate adoption of appearance with the desired gender. In these cases, the genitalia may not match the individuals desire, or ambiguous genitalia can confound clear determination of sex. The result may be a mismatch between the desired external appearance and associated chromosomal pairing. However, sexual distinction that is defined by appearance, by surgical alteration, or with hormone therapy, may not completely diminish enduring physiological changes associated with the sex hormones, particularly androgens. These sexually dimorphic changes begin very early in life and can result in physical advantages for athletic competition, particularly for muscularity and bone density, mechanical advantage or stature (13).

From a physiological standpoint, a transgender female athlete is one that has undergone pharmacological intervention with feminizing hormone therapy (i.e., androgen blockers plus estrogen) and has reached hormone levels of cisgender females (i.e., birth assigned female and remains female). It has been suggested that once a transgender female athlete reaches cisgender hormone levels, they no longer have a performance advantage over their cisgender female competitors. In fact, Gooren (2008) demonstrated significant reductions in muscle cross sectional area, insulin-like growth factor (IGF-1), and hemoglobin in transgender females after 1-year of hormone therapy (15). However, while hemoglobin and IGF-1 levels reached cisgender female levels,

muscle mass remained significantly greater in the transgender females compared to cisgender females (15). It has also been demonstrated that the training response of skeletal muscle is, in part, dictated by the number of myonuclei as well as hormone exposure (17). However, it is unknown whether the associated atrophy induced by feminizing hormone therapy impacts the number of myonuclei. If not, there will be a residual biologic advantage for the transgender female athlete. As an example, Laurel Hubbard's (18) successes competing as a transgender woman in weightlifting demonstrate this potential residual biologic advantage she gained while living as a man. Hubbard competed in international weight lifting competitions as a man until the age 35 and then went on to win international weightlifting titles as a woman.

In addition to muscle mass differences, the anabolic effects of testosterone exposure during puberty leads to greater stature as well as greater length, diameter, and thickness of bones in men (16,19), which are not reversed after hormone therapy (15,16). Collectively, these irreversible anatomical and biological features seen in hormonally treated transgender female athletes may offer significant performance advantages (e.g., greater contractile forces and biomechanical advantages) to those individuals and should be a relevant consideration in maintaining fairness in sport.

UNINTENDED CONSEQUENCES

Transgender policies have been criticized for not being evidence-based. In fact, in 2016, the IOC updated its 2004 policy with fewer restrictions to better match evidence-based rationale (20). In general, transgender policies are intended to facilitate the inclusion of transgender athletes while maintaining a fair competitive environment. Unfortunately, when science is not fully integrated into a policy decision about competitive opportunities, the potential for unintended consequences arises. Contemporary examples will be used to illustrate this potential.

Transgender female mixed martial arts (MMA) fighter, Fallon Fox caused serious and potentially career ending injuries to her opponent during a competition in 2015. Her opponent, Tamikka Brents suffered a concussion, orbit fracture, and severe scalp laceration at the hands of Fox. Although Fox had been taking feminizing hormones for years prior to the fight, Brents noted that Fox's grip was different from other female fighters she's faced and that she "never felt so overpowered" during a match (21). This example illustrates the potential risk of injury to female athletes who were born female competing against transgender female athletes who were born male and benefitted from testosterone exposure during puberty. This is particularly relevant in combat sports such as boxing, MMA, and freestyle wrestling where the competitive goal is to disable your opponent.

Recreational and amateur athletes such as those competing in high school sports may be particularly vulnerable to the potential consequences of transgender inclusive policies. In the United States, 17 states have high school policies that allow transgender athletes to compete with the gender they identify without any requirement for medical intervention. In other words, transgender females can compete against other females without undergoing feminizing hormone therapy (22). In California, a 17-year old transgender female student was permitted to compete on the girls' softball team (21). The athlete presumably benefited from testosterone exposure during puberty, but was not required to take androgen blocking hormones to compete with females. In addition to the likely performance advantages she had, it is not unreasonable to assume there was an increased risk of injury to the opponents from a batted ball. In Texas, which requires athletes to compete in their gender category assigned at birth, a transgender male wrestler was forced to continue competing in the female category despite taking testosterone during his transition process. He went on to win two consecutive Texas girl's state titles. In addition to the obvious unfair competitive environment, his opponents also faced an increased risk of injury while wrestling against an opponent taking testosterone (21).

Finally, the case of Caster Semenya illustrates the potential for excluding intersex athletes whose naturally occurring testosterone levels are higher than what is allowed for transgender females in some policies (i.e., IOC). Semenya is a world and Olympic champion middle distance runner who is suspected of being intersex. In April 2019, the Court of Arbitration for Sport (CAS) ruled that intersex athletes must reduce their natural testosterone level to within a normal female range to compete in the female category (23). This ruling will require intersex athletes like Semenya to control their testosterone levels to be eligible to compete in the female category. The CAS acknowledged that the regulations are discriminatory but that such discrimination is necessary to achieve fair competition in female athletics (23).

CONCLUSION

In 2015, Renee Richards reflected on outcomes if she had competed as a woman (following sexual reassignment) in her 20s, rather than her 40s. Declaring that "no genetic woman in the world would have been able to come close to me" is a profoundly important change of position. Richard's sentiments match closely with those of a transgender female and former US Hockey player who felt she was "biologically profiting" from previously being male, struggled with the idea that she was stronger and faster than the other female athletes, and thought she had to "hold back" to fit in with the other female athletes on her team (24).

The stakes are high. Resolution of transgender sport requires the inclusion of physiological evidence. Competitiveness fairness, and safety depend upon

scientific fact, not cultural sentiment. The heart of the matter is whether sex is an ambiguous term. Should the biological definition of sex yield to cultural constructs in laws and policies that determine athletic competition? A legal resolution based upon science is necessary to fill the void that ambiguity has created.

Address for Correspondence: Sharon West-Sell, Department of Health and Exercise Science, University of the Pacific, Stockton, CA. 95211. Phone: 209-932-3287 Email: swest@pacific.edu

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