

Society and Infant Genital Reassignment Surgery: Past, Present, and Future

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INTRODUCTION

Due to the lack of understanding of Disorders of Sexual Development (DSD), they can be a stigmatizing and traumatic diagnosis for many. Often, physicians fail to understand the psychological ramifications of a DSD diagnosis for both the patient, and the patient's family. Additionally, society struggles to accept those with a DSD diagnosis, as they do not fit into the ingrained sex binary. The sex binary is expressed in everything from public restrooms to bureaucratic forms. DSD conditions raise complex issues including medicalization, parental acceptance, self-identity, and the production and dissemination of knowledge. DSD, previously known as intersex conditions or hermaphroditism, are defined as a reproductive, genital, or chromosomal condition that deviates from the traditional definitions of male and female and occurs in up to 1:300 live births.¹

While the management of DSD has become more patient-centered than ever before, there remains significant stigmatization of DSD patients, perpetuated not only by society, but also by the biomedical establishment. The most controversial aspect of DSD care is infant genital reassignment surgery, in which physicians surgically alter the external and/or internal genitalia to conform to society's definitions of female and male genitalia. This surgery is medically unnecessary in the vast majority of cases because it is done for cosmetic reasons or to allow for penetrative intercourse.² This article will examine how views about DSD have shifted through history due to the moralism of the biomedical establishment, social movements, and rising academic theories, as well as question the high rates of infant genital reassignment surgery.

Age of the Gonads

Hermaphrodites and intersex individuals have a long documented history, beginning with the etymology of the word hermaphrodites. Greek myth states that Hermes and Aphrodite had a child together but could not decide on its gender. They finally elected to make the child half boy and half girl to ensure that Hermaphrodites was the true amalgamation of both parents. While antiquity held more malleable and geographically variable perceptions of gender, in the seventeenth century, physicians began to advocate for a stronger division between male and female.³ In the Renaissance, physicians gained more prominence in society, replacing priests

Guest Editor's Note: Finally, our PLME (and AMS students) are all highly engaged in scientific inquiry. PLMEs are not "just" into the liberal arts. Over 60% concentrate in the sciences and pursue honors in their field. Many are part of research groups and publish with Brown and other faculty. Included are the following research papers, again, not peer reviewed but submitted by the student in hopes of having their work published.

as the sole authorities of the anatomy and genitals; they became fascinated by the study of unusual anatomy – what they dubbed “monstrous” births – and named their new field teratology. Medicine entered into what Alice Dreger calls the “Age of the Gonads” where physicians, empowered by their newly invented microscope, examined gonads and genital tissue.⁴ Based on their slides, physicians decided the sex of the child. Factors such as the new field of pathology, a greater understanding of embryonic development, and the theory of evolution (which emphasized reproduction) ingrained the genitals' importance as the sex-determining factor.

Age of Conversion

In the middle of the 20th century, the emergence of Freudian theories of gender and sexuality shaped the experiences of those with DSD. Advancements in medicine allowed for a better understanding of embryonic physiology and improvements in surgical procedures made genital reconstruction and reassignment possible. These advancements, combined with the repressive social order, made infant genital reassignment the standard procedure. John Money's psychosocial gender identity theory established conversion-based DSD care, which lasted through the end of the 20th century.⁵ This century was consequently dubbed the “Age of Conversion.”⁶ This theory states that children are malleable at infancy and will conform to any assigned gender, as long as sex assignment surgery is done swiftly after delivery and parents keep details about their child's sex a secret. Because of the intense stigmatization of those affected, biomedicine operated on the axiom that children should never know they were different from their peers.⁷ This secrecy is a reflection of the general societal repression at this time and likely stems from the sexually repressive nature of American society in the 1950s and the societal taboos regarding sexual intercourse and the sexual organs.

In the 1960s, the sexual revolution generated conversation about sexuality and the sexual organs.⁸ Knowledge from the feminist and LGBT+ movements began to alleviate the heavy tone of moralism adopted in the 1950s. In turn, these movements increased discussion concerning sexual terms and anatomy, allowing the public to better understand their gonads. As society began to embrace the importance of sex, surgeons similarly began putting money, time, and research into preserving sexual nerves during surgery. Despite this

progress, treatment of DSD individuals, however, remained based on “fixing” anatomical deviations and not preserving sexual feelings.⁹

In the wake of the sexual revolution, feminist theories examining DSD, then called intersex, emerged in the 1980s and 1990s. One of the most influential voices was Anne Fausto-Sterling, who began to call for an expansion of the gender binary to include different types of DSD, proposing five sexes instead of two. Ultimately, she argued for the elimination of genders entirely and rejects the convention that a boy must have penis large enough to achieve penetrative intercourse to be considered male.¹⁰ This assertion directly contradicts the biomedical standard that one’s genitals determine one’s gender. By the close of the 20th century, feminist and queer theories had begun to lift the curtain around DSD and intersex advocates had established their own theories rejecting normative gender categories.

Recently, the debate regarding the treatment of DSD has been elevated to a greater level of importance and physicians have begun to reconsider the ramifications of infant genital reassignment. Despite this progress, at the turn of the 21st century physicians were still promoting treatment based on the framework developed by Money in the 1950s. Until the past decade, the American Academy of Pediatricians characterized DSD as a “social emergency” to be remedied.¹¹ In 2004, based on the recommendations by the activist organization the Intersex Society of North America, physicians adopted a new multidisciplinary framework that urged caution in infant genital surgery.¹² Unfortunately, this progress, too, is deceptive. The Intersex Society of North America reports that infant gender reassignment surgery persists unabated. In Columbia University’s meta-analysis of the developments in treatment of DSD, published in April 2014, the authors support a multidisciplinary approach including a team of psychologists, social workers, and physicians. However, the paper also recommends that reassignment surgery should be preformed within the first week of life when genitals are not exclusively male or female.¹³ As this irreversible surgery continues unabated today, it seems theoretical discourse has had little effect on surgeries.

When examining the factors that have lead to today’s high level of infantile genital reassignment, many physicians insist that surgery continues in response to parent demand. Parents, upon hearing their child’s DSD diagnosis often struggle to comprehend the medical aspects of the disorder and physicians simultaneously push parents to make a swift decision regarding their child’s genitals.¹⁴ Many parents report that fear of ridicule encourage them to “normalize” their child’s genitals. However, due to the secrecy that shrouds the diagnosis and care of DSD, there exists little data regarding the effects of infant genital surgery. No significant data suggests that these surgeries are beneficial to the child; in fact, in some cases, these surgeries have been shown to cause mental anguish or even harm to the patient.¹⁵

Parents in the United States possess complete autonomy to

make decisions on behalf of their children up to age eighteen in most states. While reproductive services do not generally require parental consent, intersex surgeries and treatments do. Recently, the parental right to make decisions about the bodies of adolescents has received some scrutiny and may soon be challenged in court. The thought that parents make autonomous decisions regarding their child has been contested recently by research showing that the type of counseling parents receive substantially influences the decisions they make. One study showed that while parents believed their decision was based on personal considerations only, it was actually heavily influenced by whether their counseling was surgical or psychological.¹⁶ Given the irreversible nature of infant genital surgery, society must consider parents’ true motivations and reevaluate the way in which biomedicine communicates with parents.

Age of Acceptance

Based on the progress of DSD treatment and awareness in the past twenty years, this article asserts that society has begun the Age of Acceptance. Now that feminist theory is well established and those individuals with DSD are more vocal than ever, biomedicine must critically examine how society’s prejudices influence biomedical protocols and, more importantly, the quality of life of those with DSD. Studies suggest that societal fears of sexual perversion and deviation are the driving factor behind infant genital reassignment surgeries.^{17,18} With an alarming lack of empirical evidence supporting these surgeries and an ever-growing group protesting them, biomedicine must scrutinize their use. If society can begin to understand that one’s gender is determined by one’s psyche, not by outward appearance, society can enter the Age of Acceptance and begin to erase the notion that genitals define gender. Moreover, as scholars have accepted gender as a spectrum not a binary, so too must they accept sex as a spectrum. An expanded definition of sex will help patients with DSD be accepted in their natural bodies and no longer feel pressured into genital reassignment. Moving forward, biomedicine’s approach to DSD must be critically interrogated, and more research on the psychosocial motivators and impact of infant genital reassignment surgery is needed.

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Role of Subventricular Zone Derived Neural Precursor Cells in the Therapy of Experimental Autoimmune Encephalomyelitis

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ABSTRACT

Examining the accumulation of stem cells following transplantation can provide valuable insight on the possibilities of stem cell-based human therapies for neurodegenerative disorders, namely multiple sclerosis (MS). MS is a chronic disease that attacks the central nervous system (CNS). Symptoms may be mild, such as numbness in the limbs, or severe, such as paralysis or loss of vision. MS is currently believed to be an immune-mediated disorder caused by the patient's own immune cells gaining entry into the CNS via the impaired blood-brain barrier. This leads to demyelination and scarring in addition to other common neurological symptoms associated with autoimmune disease. The purpose of this report is to use td-Tomato transgenic mice to determine the accumulation of intravenously-injected

Green Fluorescence Protein (GFP) reporter neural precursor cells (NPC) in the CNS. Using a mouse model of MS known as Experimental Autoimmune Encephalomyelitis (EAE), the effect of NPCs in the CNS was evaluated by clinical scores, in vivo *magnetic resonance imaging* (MRI) and Xenogen imaging, and histology. This study provides support for a potential role of NPCs in the therapy of EAE and MS in humans.

KEYWORDS: stem cell use for neurodegenerative disorders; multiple sclerosis

Note: This submission only contains the research abstract. To obtain access to the full-length report, please contact me at soha_ghanian@brown.edu