Current Sexual Health Reports (2023) 15:113–123
https://doi.org/10.1007/s11930-023-00358-x

Current Concerns About Gender-Affirming Therapy in Adolescents

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Accepted: 29 March 2023 / Published online: 14 April 2023
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Abstract

Purpose of Review Results of long-term studies of adult transgender populations failed to demonstrate convincing improvements in mental health, and some studies suggest that there are treatment-associated harms. The purpose of this review is to clarify concerns about the rapid proliferation of hormonal and surgical care for the record numbers of youth declaring transgender identities and seeking gender reassignment procedures.

Recent Findings Systematic reviews of evidence conducted by public health authorities in Finland, Sweden, and England concluded that the risk/benefit ratio of youth gender transition ranges from unknown to unfavorable. As a result, there has been a shift from "gender-affirmative care," which prioritizes access to medical interventions, to a more conservative approach that addresses psychiatric comorbidities and psychotherapeutically explores the developmental etiology of the trans identity. Debate about the safety and efficacy of "gender-affirming care" in the USA is only recently emerging.

Summary The question, "Do the benefits of youth gender transitions outweigh the risks of harm?" remains unanswered because of a paucity of follow-up data. The conclusions of the systematic reviews of evidence for adolescents are consistent with long-term adult studies, which failed to show credible improvements in mental health and suggested a pattern of treatment-associated harms. Three recent papers examined the studies that underpin the practice of youth gender transition and found the research to be deeply flawed. Evidence does not support the notion that "affirmative care" of today's adolescents is net beneficial. Questions about how to best care for the rapidly growing numbers of gender-dysphoric youth generated an intensity of divisiveness within and outside of medicine rarely seen with other clinical uncertainties. Because the future well-being of young patients and their families is at stake, the field must stop relying on social justice arguments and return to the time-honored principles of evidence-based medicine.

Keywords Transgender · Gender dysphoria · Gender incongruence · Puberty blockers · Gender-affirming care · The Dutch protocol

Introduction

The fundamental basis for concern about "gender-affirming" interventions for adolescents, and socially transitioned children who will soon be adolescents, is how they will fare in the ensuing decades [1•]. There are significant knowledge gaps about the balance of benefits and harms as patients live their lives.

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Medicine has provided treatments for transgender-identified adolescents for over 25 years [2–6]. These treatments emerged in the late 1980s to early 1990s in large part in response to the suboptimal outcomes of transitioned adults, with the hope that early gender transition may improve outcomes [3]. Despite claims of the lifesaving nature of gender transition for adults, none of the many studies convincingly demonstrated enduring psychological benefits. The longest-term studies, with the strongest methodologies, reported markedly increased morbidity and mortality and a persistently high risk of post-transition suicide among transitioned adults [7, 8••, 9].

The lack of credible evidence of benefits of gender transition has come into focus for today's transgender-identified youth, whose numbers have sharply increased. The presentation of gender dysphoria has markedly changed in recent years [10]: the sex ratio of youth presenting in medical settings has

reversed from primarily male to primarily female [11], with the preponderance of youth whose transgender identity emerged for the first time in adolescence and in the context of significant pre-existing mental illness and neurocognitive disorders [12]. These changes began to manifest around 2006 but became pronounced around 2014–2015 [13]. Nonetheless, many clinicians and policymakers promulgate that science long ago established the benefits of gender transition for these adolescents [14–18].

There has never been a dispute about whether medical and surgical interventions can feminize or masculinize secondary and some primary sex characteristics. For children and adolescents, the debate is not whether such transformations are possible, but "at what age can youth meaningfully consent," "upon fulfilling which criteria," and perhaps most importantly, "just because we can – should we?" [1•]. Such questions have provoked an intensity of divisiveness within and outside of medicine rarely seen with other clinical uncertainties [18–22]. This passion reflects decidedly different prioritization of *scientific evidence*, *medical ethics*, and *social values*. We elaborate on each below.

Disagreement About the Scientific Evidence

While several European countries recognized deficiencies in the evidence supporting the highly medicalized "gender-affirming" approach to treating gender-dysphoric youth [1•, 33••, 34••, 35, 36], in North America, the narrative that "gender-affirmative care has been scientifically proven" has been remarkably resilient [23••]. Its justification rests on several key assumptions misrepresented as proven facts [15, 24]:

1. The emergence of a trans identity is the result of reaching a higher level of self-awareness.
2. Whether the trans-identity emerges in very young children, older children, teens, or mature adults, it is authentic and will be lifelong.
3. All gender identity variations are biologically determined and inherently healthy.
4. The frequently co-occurring psychiatric symptoms are a direct result of gender incongruence (the so-called "minority distress" model).
5. The only way to relieve, or prevent, psychiatric problems is to alter the body at the earliest signs of puberty.
6. Psychological evaluations and attempts to address psychiatric comorbidities should only be used to support transition.
7. Attempts to resolve gender dysphoria with psychotherapy range from ineffective to harmful.
8. Gender-dysphoric youth must have unquestioning social, hormonal, and surgical support for their current gender identities and desired physical appearance.
9. All individual embodiment goals, even those that do not occur in nature, must be fulfilled to the full extent technically possible.
10. Science has proven the benefits of early gender transition, and low rates of regret and detransition further validate the practice.

These unproven or disproven assumptions [24] have created a narrative that has misled physicians, parents, and patients to conclude that meeting a young gender dysphoric individual's desired body modification goals provides the only chance for a full, successful, happy life. It has positioned invasive medical interventions for children and adolescents as a civil right, rather than as medical interventions.

The most fundamental of these assumptions are that a teenager's *transgender identity, once expressed, is permanent*; that it will cause *lifelong suffering* if no medical interventions are offered; and that "gender-affirming" *interventions are safe and effective* at improving short-term and long-term psychological outcomes. All three premises are deeply flawed, as we explain below.

Identity Development in Teenagers Is Far from Complete

Answering the question, "Who am I?" is the primary "developmental task" of adolescence [25]. Children and adolescents are too young to assume their current gender identity is permanent. Adults should know that young people's sexual orientations and gender identities fluctuate as they gain more life experiences [26].

Among the many facets of identity, the development of sexual orientation is particularly relevant as gay, lesbian, and bisexual individuals often have extended periods of suffering from gender dysphoria in their younger years [27]. The current overall crisis in mental health among youth and especially girls [28] may introduce further complexity into the identity development process. As many as 70% or more of youth who present with gender identity concerns for the first time in adolescence had psychiatric diagnoses prior to presenting with gender dysphoria [29]. The strong connection between a trans identity in adolescence and the presence of neurocognitive diagnoses [29, 30] deserves additional consideration, as individuals on the autism spectrum are often gender nonconforming. These factors may play a role in the emergence of a transgender identity as a maladaptive mechanism for understanding their distress.

The natural arc of adolescence is the eventual resolution of identity confusion and consolidation of a healthy, multifaceted identity. Problematically, every stage of "gender-affirming" care disrupts the natural course of identity development.

Goals Have Shifted from Reducing Suffering to Achieving Personal "Embodiment Goals"

For decades, gender specialists told the public that gender/sex incongruence created such suffering that these interventions are often "lifesaving." In 2022, the justification for these interventions changed. WPATH "Standards of Care 8" explicitly instructed providers to rely on the "Gender Incongruence" ICD-11 diagnosis [31], which does not require the presence of distress [32].

This recommendation came with an extensive list of medical procedures that WAPTH deems medically necessary for nonbinary patients, including the construction of a neovagina while retaining penis and testicles, and "nonbinary mastectomies" that preserve some of the female breast tissue but resize and reposition the nipple and areola to make the breast appear more masculine. Procedures ranging from "flat front" obliteration of sex organs for those with a eunuch gender identity, to uterine transplantation for male-to-female individuals wishing to pursue childbearing, are also listed as medically necessary [31, p. 136].

Although achieving body modification goals can be very satisfying to patients, clinicians should not confuse it with improved functioning in relational, sexual, educational, substance dependence, and vocational aspects of life—the domains of mental health. Nor can it be claimed to be "lifesaving."

Medical and Surgical Gender Transition Has Not Resulted in Credible Mental Health Improvements

Despite the promise that gender transition is key to ameliorating the suffering of gender-dysphoric youth, systematic reviews of evidence failed to find trustworthy evidence of such improvements. The well-known National Institute for Health and Care Excellence (NICE) reviews, commissioned by the NHS, the UK's health authority, evaluated the first two stages of medical gender transition for youth: puberty blockers and cross-sex hormones [33••, 34••]. In both reviews, the studies that reported positive findings were found to be unreliable due to poor methodology.

In the case of puberty blockers, the reviews found no evidence of improvements in key areas of mental health:

> "The results of the studies that reported impact on the critical outcomes of gender dysphoria and mental health (depression, anger and anxiety), and the important outcomes of body image and psychosocial impact (global and psychosocial functioning), in children and adolescents with gender dysphoria are of very low certainty using modified GRADE. They suggest little change with GnRH analogues from baseline to follow-up. Studies that found differences in outcomes could represent changes that are either of questionable clinical value, or the studies themselves are not reliable and changes could be due to confounding, bias or chance" [33••, p. 13].

For cross-sex hormones, the review found that improvements in mental health were *highly uncertain* and had to be carefully weighed against the risks of hormonal interventions [34••]. Having conducted their own systematic review of evidence [35], the Swedish health authority came to the even starker conclusion that for most adolescents, the risks of hormones outweigh the benefits [87••]. The Finnish health authority, and the Florida health authority, came to similar conclusions after their own systematic reviews/overviews of systematic reviews [36, 37••].

Since the practice of gender-transitioning youth did not begin to be widely scaled until about 2015, the existing systematic reviews of evidence for young people are limited by very short-term follow-up. Therefore, it is informative to look at studies that followed lifelong trajectories of individuals who medically transitioned decades ago, although they represent a different demographic group (most transitioned when they were older). Unfortunately, these long-term data do not show that hormonal and surgical transitions result in lasting mental health improvements in transgender-identified individuals, and some evidence even suggests the possibility of treatment-associated harms [7, 40•].

A well-known 30-year Swedish follow-up study compared medically transitioned individuals to cisgender age-matched peers on key measures of morbidity and mortality [7]. The study found sharply elevated rates of suicide among transitioned adults (19 times higher than controls overall, and 40 times higher for female-to-male individuals [7, Table S1]) and significantly elevated all-cause morbidity and mortality, with survival curves between transitioned adults and their cisgender matched controls markedly diverging at the 10-year mark and beyond.

A more recent long-term Swedish study also failed to find that either hormones [39••] or surgery [8••, 40•] improved long-term mental health outcomes of gender dysphoric adults. Originally, the surgical outcomes showed some promise [39••]; however, the methodology was found to be deeply flawed [8••], and upon reanalysis of the surgery data, it emerged that not only did those who refrained from surgery fare no worse, but they also had half as many serious suicidal attempts [40•]. This difference did not reach the threshold of statistical significance, but the apparent doubling in serious suicide attempts among surgically transitioned individuals, as compared to gender-dysphoric controls who did not have surgery, is clinically meaningful and problematic.

Yet another long-term Dutch follow-up of transitioned individuals concluded that "suicide death risk is higher in trans people than in the general population" and that suicide deaths occurred during every stage of transitioning"—from those who were still in the evaluation phase, to those who underwent complete gender transition [41, p. 486].

Two recent US-based publications highlighted high rates of mental health problems, including depression, anxiety, substance abuse disorder, suicidality, cardiovascular disease, obesity, cancer, and sexually transmitted infections such as HIV, HPV, syphilis, and hepatitis C in community samples of adults who identify as transgender [42, 43]. Although community samples can suffer from extensive methodological problems [44], there is little debate about the high burden of physical and mental health illness in this population. The explanations offered for these health disparities focus on minority stress, discrimination, and barriers to obtaining health care including fear of mistreatment in health facilities [42, 43]. Conspicuously absent from the discussion is the possibility that the mental health of some trans persons may be intrinsically compromised.

The position that poor mental health problems are either merely co-occurring with, or a direct result of the experience of "gender incongruence"—with no acknowledgement of the possibility of reverse causation —is reinforced in the WPATH "Standards of Care 8" Assessment section for adults, which states that uncontrolled mental health problems should only rarely impede the provision of hormones and surgery [31, p. 37]. While the adolescent chapter acknowledges the difficulties of working with adolescents who have psychiatric illnesses, the focus is on controlling problems just enough to ensure that young patients can provide valid consent to gender reassignment, participate in postoperative care, and adhere to ongoing hormone treatment [31]. The predominance of pre-existing mental health problems prior to the onset of gender dysphoria in youth [29], and the implications for the future durability of a transgender identity as youth mature, is not considered. In 2022, two prominent gender specialists expressed concern that trans-identifying adolescents are too quickly diagnosed and rushed to irreversible body-modifying interventions [45, 46].

Collision of Ethical Principles

When treating transgender-identified adolescents, clinicians invariably confront three ethical principles—above all, do no harm (nonmaleficence); act in the patient's best interests (beneficence); and respect of patient autonomy [47]. These principles uncomfortably collide in the minds of many clinicians. There seems to be no simple resolution.

To avoid *harm*, clinicians conceptualize the specific physiologic, medical, social, and psychological dangers that parents and patients need to understand, attempt to avoid, or accept. Here are examples from each danger category associated with medical gender transition: sexual dysfunction and infertility [49, 50]; shortened lifespan due to increased medical morbidity [7, 51]; difficulties in romantic partnerships [52, 53]; substance abuse and addiction [54]. Advocates of the medical transition of youth point to the harms of "doing nothing" to stop natural puberty, which subjects youth to distress and necessitates more invasive procedures later in life to "undo" the irreversible effects of puberty on the body [55]. Unlike the risks of transition-associated harms which have been demonstrated, avoidance of *future harms* by undergoing a medical transition in adolescence remains at best an unproven theory. Blocking puberty at Tanner stage 2 not only removes the possibility of fertility preservation [15], but also greatly complicates future genital surgeries due to insufficient tissue [56]. The death of one of the 70 youths in the famous "Dutch study" [5] due to complications from genital surgery was likely a direct consequence of early puberty blockade [57•].

To ensure *beneficence*, clinicians need to understand the benefits of gender transition, when they appear, and the extent to which they endure over time. Initially, a high level of satisfaction is expected as desired changes such as softened skin or, conversely, facial hair appear [58••]. Surgery can further improve appearance and satisfaction, although its rate of complications is significant [59, 60], and it does not clearly improve mental health [7, 8••]. However, at some point, the interventions reach their limit. While the face, chest, and/or genitals can be surgically altered, overall skeletal size or hand size will continue to appear incongruent, and dysphoria may persist [61].

To respect patient *autonomy*, clinicians need to determine when an adolescent has the cognitive maturational capacity and life experience to consent to potentially irreversible medical and surgical interventions. However, because of the maturational capacities of children or young adolescents, it is the parents who are actually exercising the autonomy. This can be seen in families in which parents support transition and those who do not. As soon as parents consent to the first stage of gender transition, a child's future medical transition trajectory is virtually assured [62•, 63•]. While children "assent" to the interventions, recent research about the capacity of adolescents to make decisions related to future reproductive function is not reassuring [64].

Clash of Value Systems

Absent certainty about the optimal treatment of the high number of youth currently presenting with gender dysphoria [23••], decisions are made based on core values.

Those who insist that a young person has the right to receive any medical intervention they desire now, and the right to regret that intervention later, privilege *autonomy* above all else. The "patient autonomy" argument is compromised by the very young age of the many affected patients, and a common tendency among gender-affirming providers to exaggerate the benefits of the practice, while downplaying the risks and uncertainties [1•, 20].

Those who advocate for sharply curbing the practice of medical interventions in gender-diverse minors because they view the practice as a major source of iatrogenic harm, privilege the principle of *non-maleficence*.

The two positions on the issue of youth gender transition also distinctly clash over the value of *beneficence*. Each side claims they are pursuing beneficence, but sharply disagree on the solution: one side insists that the most benefit is derived by undergoing a transition as early in puberty as possible to achieve the best possible cosmetic outcomes, while the other asserts that achieving cognitive maturity, emotional stability, and obtaining life experiences (including sexual experiences) prior to making the decision to undergo irreversible transition will provide the most long-term benefit for affected individuals.

Significance of Regret and Detransition

Proponents of gender-transitioning youth insist the benefits of the practice are self-evident even if systematic reviews of evidence cannot detect them. To support their view, they quote exceedingly low regret rates of less than 1–2% [65, 66]. This implies that 98–99% of transitioned individuals are happily situated throughout their lives. This conclusion is inaccurate, for three reasons.

First, follow-up studies exploring regret and quality of life suffer from very high rates (20–60%) of loss to follow-up [67], which means the most adversely affected, including dissatisfied, sick, or deceased patients, may be lost to follow-up at a disproportionately high rate. *Second*, these rates were obtained from individuals transitioning under much different circumstances than the ones found today. They were mature adults who passed rigorous psychological screenings, which today are viewed as "discriminatory gatekeeping."

Third, and perhaps most important, is the question of how these studies defined regret. Each study's methodology differed, but generally speaking, regret has been traditionally defined very narrowly as a request for legal document change or a return to the same clinic that facilitated the original transition to start medical detransition. Even when these criteria were met, not every study would consider someone who wanted to reverse their transition as a regretter. For example, Keira Bell, arguably the most famous young adult regretter, whose case led the UK to reevaluate their approach to gender dysphoric youth, would not have been counted as a regretter in frequently-cited "low regret" studies [65]. This is because the studies required regretters to have had their gonads removed, while the only surgery Keira received was a double mastectomy.

Regret

Regret is a common, if not universal, human experience. Individuals who underwent medical transition are no exception. Regret does not preclude benefits, which typically appear first. The "honeymoon period" can last from several months to several years [68], with adverse effects emerging 8–10 years following transition [65, 69] among mature adult transitioners. Among the more recently transitioning cohorts comprised primarily of youth, there appears to be a shorter time to regret and a subsequent desire to detransition, around 3–6 years on average, with longer time to regret and detransition among biological males [70•, 71].

There are many contributing factors to regret. Many teens consenting to gender reassignment lack sexual experiences [72] and few anticipate wanting to have children in the future [64]. Later, as sexual dysfunction because of hormones, surgery, or anxiety about physical intimacy becomes a recurrent experience, regret appears. Reproductive regret can be significant, as was evident in the data presented at WPATH Symposium [73, 74••].

Strained intrafamilial bonds, inability to find a stable relationship, the experience of discrimination, need for ongoing medical care, substance use to quell anxiety and depression—matters that they may have been warned about—begin to create waves of regret. Some eventually express regret over not having had a chance to explore their concerns in psychotherapy before they transitioned [70•, 71].

There must be a hierarchy of intensity of regret related to the situations patients ultimately find themselves in. The most extreme form of regret is post-transition suicide and suicide attempts. Individuals who undergo medical detransition to restore the body to its pre-transitioned state are also high on this hierarchy. Lower on this hierarchy are those who regret their transitions but due to the irreversible changes to their bodies' anatomy and function, adaptively choose to make the best of their lives without detransitioning. Regret and acceptance can co-exist.

Detransition

Physicians providing gender transition of youth claim that they have never met a detransitioned patient. This is not

surprising: recent research with detransitioners indicated that three-quarters do not return to the treating providers to tell them about detransition [70•].

Detransition has become much more visible in recent years [70•, 71, 75–83, 84••, 85]. However, it was only recently that the rates of detransition began to be quantified. According to recent UK and US data, 10–30% of recently transitioned individuals detransition a few years after they initiated transition [82, 83, 84••]. Detransition does not invariably mean regret about the original transition. Not all detransitioned individuals have expressed regret. Those who have, are often angry at themselves for their naïve adolescent certainty and disturbed about medical professionals' unconcerned compliance with their requests. A growing number of malpractice lawsuits by regretful youth [85] is likely in the future.

The Reversal of "Gender-Affirming Care"

In the last 36 months, there has been sharply increased scrutiny of the practice of youth gender transition worldwide. Systematic reviews of evidence from Europe failed to demonstrate the hoped-for meaningful improvements in youth's mental health functioning and exposed significant risks, including demonstrated risks to bone development [33••, 34••, 35, 36].

Three different studies [1•, 57•, 74••] recently shone a spotlight on the original Dutch research [4, 5], which launched the experimental practice of pediatric gender transition into mainstream medical practices shortly after its publication. The studies argued that the Dutch research failed to demonstrate any clinically significant changes in standard measures of psychological health and that the main finding of the resolution of gender dysphoria was likely invalid due to the reversal of the scale scoring between baseline and follow-up [1•, 74••]. The Dutch research also raised serious ethical questions, as nearly all the youth in the Dutch research who were transitioned and became sterile had been same-sex attracted at baseline [57•]. Overall, the researchers deemed the Dutch studies unfit for clinical or policy decision-making due to the high risk of methodological bias [1•, 74••].

Commensurate with these conclusions, in the last 3 years, three European countries—Finland, Sweden, and England—have reversed their unquestioning belief in "affirmative care" by setting new national health policies that prioritize mental health interventions as the first and often only treatment available outside of clinical research settings [86, 87••, 88].

This reckoning has also begun in France, Australia, and the US state of Florida, and most recently, Norway [89–92]. Many US state laws have been introduced to limit or ban gender transitions of youth [93]. The reluctance of the US medical societies to recognize the apparent problems with medical "gender affirmation" of youth may have contributed to the unfortunate and preventable politicization of this complex issue.

Conclusions

Fulfilling the diagnostic criteria for gender dysphoria (DSM) or gender incongruence (ICD) in children or adolescents today does not predict its persistence in the future. Doctors may be incorrect in their assumptions about the causes, persistence, and future trajectory of adolescent gender dysphoria. The rapidly rising numbers of gender dysphoric youth treated with hormones and surgeries and the delayed onset of regret mean that the scale of possible iatrogenic harm will not be known for several years.

The evidence base for gender-affirming interventions is sparce and of very low quality. While the evidence of benefits is highly uncertain, the harms to sexual and reproductive functions are certain, and many uncertainties about the long-term health effects exist. As a result, it is hard to ethically justify continuing to use hormones and surgeries as first-line "treatment" for gender dysphoric youth.

Political arguments relying on social justice, civil rights, and freedom of expression are compelling and powerful in the public arena. Few mental health professionals would argue against these vital human rights. Nonetheless, they tend to complicate clinicians' consideration of how to respond to gender dysphoric adolescents and their families.

Parents want to know, "Where is this identity coming from?" "What about my child's previous difficulties?" and critically, "Will transition give my child the best chance for a happy and fulfilling life?" Clinicians are ethically bound to honestly represent the uncertainty of the current state of knowledge, rather than asserting that body modification is the best, safest, and most effective treatment. When a concerned family seeks our counsel, they are seeking our knowledge, not our political ideation and beliefs.

Author Contribution Both authors contributed to the conception and design of this review. The first draft of the manuscript was written by Stephen Levine. Both authors contributed to its evolution. E. Abbruzzese provided the majority of the literature review. Both authors critically revised and approved the final manuscript.

Data Availability Data sharing is not applicable as no new data were generated or analyzed during this study.

Declarations

Conflict of Interest The authors declare no competing interests.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

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