

COURT FILE NUMBER

1808-00144

COURT

COURT OF QUEEN'S BENCH
OF ALBERTA

JUDICIAL CENTRE

MEDICINE HAT

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SOCIETY, KOINONIA CHRISTIAN SCHOOL-RED DEER
SOCIETY, COVENANT CANADIAN REFORMED SCHOOL
SOCIETY, LACOMBE CHRISTIAN SCHOOL SOCIETY,
PROVIDENCE CHRISTIAN SCHOOL SOCIETY, PONOKA
CHRISTIAN SCHOOL SOCIETY, LIVING WATERS
CHRISTIAN ACADEMY, NEWELL CHRISTIAN SCHOOL
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SOCIETY, THE RIMBEY CHRISTIAN SCHOOL SOCIETY,
LIVING TRUTH CHRISTIAN SCHOOL SOCIETY,
LIGHTHOUSE CHRISTIAN SCHOOL SOCIETY, PARENTS
FOR CHOICE IN EDUCATION, and ASSOCIATION OF
CHRISTIAN SCHOOLS INTERNATIONAL- WESTERN
CANADA

RESPONDENT

HER MAJESTY THE QUEEN IN RIGHT OF ALBERTA

INTERVENORS

CALGARY SEXUAL HEALTH CENTRE and
ASSOCIATION FOR REFORMED POLITICAL ACTION

DOCUMENT

AFFIDAVIT OF WALT HEYER

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AFFIDAVIT OF WALT HEYER

Sworn on June 27, 2019

I, WALT HEYER of Surprise, ARIZONA, SWEAR AND SAY THAT:

1. I have personal knowledge of the matters and facts hereinafter deposed to by me, except where same are stated to be based upon information and belief, in which case I believe them to be true.
2. The perspective I provide in this affidavit has been informed by the following:
 - my personal experience of having persistent gender identity disorder (now called gender dysphoria¹) from age 4 until age 50, a period of 46 years;
 - my experience of having my gender distress treated with cross-sex hormones, sex reassignment surgery, and presenting as a transgender woman for 8 years, which failed to alleviate my psychological suffering, but rather exacerbated it, while inflicting permanent physical damage on me and causing me to be severely depressed and suicidal;
 - my subsequent diagnosis and treatment of an underlying condition of dissociative disorder, which after extensive psychotherapy, was successfully resolved, and thereafter experiencing permanent resolution of my gender identity disorder;
 - my focused scientific and medical study of transgenderism, gender dysphoria and underlying disorders, including at the University of California, Santa Cruz, where I completed the two (2) year course requirements certificate program in psychology, pharmacology and alcohol and drug recovery;
 - my work as an employed counselor for 5 years, author for 13 years and public speaker for 5 years, focusing on transgenderism and the frequent misdiagnosis of gender dysphoria and their relationship to underlying comorbid disorders, having written 6 books on the subject and in excess of 50 published articles; and
 - my 9 years of mentoring and supporting hundreds of individuals who, like myself, have experienced gender distress, identified as transgender, and want to detransition.

¹ In 2013, Gender Identity Disorder (GID) was replaced with Gender Dysphoria (GD) in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), but the treatment protocols remained the same.

On account of these experiences, I have been considered a leading voice and expert regarding people who undergo transition and later regret it.

3. I swear this affidavit to provide the Court with perspective concerning the effects of promoting transitioning to a different sex, including by cross-sex hormones and sex-reassignment surgery, as treatment for gender dysphoria, and the importance of diagnosing and treating any underlying or contributing disorders or conditions.

Personal Experience with Gender Distress and Transgenderism

4. I was born as a biological male in 1940. Starting in 1944, for reasons that were unknown to me until much later in life, I began to experience a persistent desire to be female and to cross-dress at four years of age. As a young child, my grandmother encouraged me to wear dresses during our secret times of playing dress-up at her house. I enjoyed how it felt pretending to be a girl, and how my grandmother fawned over me when I did so. My grandmother even made me a purple evening dress to wear during our secret play times. Her excitement of seeing me in the hand-made dress was affirmation to me that I should have been born a girl, and further strengthened the desire to become a girl.
5. From this point forward, the persistent and unrelenting desire to be a girl never relinquished, not even for a day. It was at this time that I started dreaming as if I was already a girl. In one of my most memorable dreams, I was a girl in my purple evening dress walking alongside a tall man strolling down the sidewalk. When I was in this state of fantasy, everything seemed perfect; I was a beautiful feminine girl to not only myself, but also to all those I had created within my fantasy.
6. My dad's adopted teenage brother found out about the dress and began to tease me, which escalated into repeated sexual abuse before I was 10 years old.
7. Later, in my early teenage years, I secretly adopted the name of Crystal inside my head in an attempt to satisfy, what I perceived to be, my innate sense of being a female. I told no one about my fantasy female name.
8. Throughout my high school years, I enjoyed participating in typical boy activities: playing football, joining the car club and dating girls. Like many transgendered individuals, I have always known that I was not gay. Transgenderism for me was not an issue of sexual attraction, but rather a burning desire to express my femininity to the world. I sincerely believed that I was born in the wrong body and that having

female genitalia would alleviate the conflict between my innate sex and my emotional and psychological feelings.

9. Although the intense desire to be female never went away, I lived my adolescent life as a boy on the outside, and as the girl in the purple dress on the inside. Keeping this desire secret only added to my anticipation that perhaps one day, I would actually be a girl.

Marriage and Early Career

10. Despite my struggles with identity, I got engaged and told my fiancée about my early childhood experiences and the still-present desire to cross-dress. Undaunted, she married me in 1962 and by 1968 we had two kids. While I had hoped that having a wife and family would help me settle into my innate male identity, every day that I saw my male body I was reminded of my continual inner conflict and the desire to remove myself from my male body intensified.
11. While my personal life was in a state of confusion, my career started to mature, and after some specialized education in drafting and drawing of electronic circuit boards, I became an associate design engineer on the Apollo Space Missions program, working in the area of cryogenics as part of a team that prepared specifications for NASA. Later, in the automotive manufacturing business, I quickly worked my way up to the executive level. Despite my career's remarkable success at a relatively early age, the desire to cross-dress and change genders remained present, each and every day.
12. On weekly business trips away from home, I indulged in cross-dressing.

Transitioning Process

13. In my thirties, I started to hear about individuals who were surgically changing their genitalia in an attempt to satisfy their identity conflict. These individuals shared a persistent desire to be the opposite gender, and as a result, had been diagnosed with gender identity disorder (now called gender dysphoria). In addition to hearing of these individuals, I learned, from the cross-dressing bars I frequented, of a doctor who would administer cross-sex hormone therapy to individuals diagnosed with gender identity disorder.
14. In hopes of fulfilling my childhood dream of becoming a girl, I scheduled an appointment with the leading expert, Dr. Paul Walker, Ph.D., to determine whether I

had gender identity disorder. Dr. Walker was the distinguished chairperson and one of the original authors of the Harry Benjamin International Standards of Care, the same standards published today by the successor organization, World Professional Association for Transgender Health (WPATH).

15. Unfortunately, I believe that WPATH prioritizes promoting transgenderism over protecting its patients' wellbeing and as a result, has failed to set sound standards for diagnosing co-existing psychiatric and psychological disorders that lead to transition regret and the shockingly high suicide rates among transgender individuals.
16. Dr. Walker diagnosed me with gender identity disorder and recommended I undergo hormone therapy and sex reassignment surgery. In response to Dr. Walker's diagnosis and recommendation, I began taking cross-sex hormones which gave a calming effect and relief from anxiety. I scheduled the surgery without telling my wife and traveled to the hospital 1300 miles away. But at the last pre-operation meeting with the surgeon, I panicked and backed out. I returned home, told my wife the truth, and dedicated myself to making our marriage work. But strong feelings of gender distress persisted. After two years of receiving cross-sex hormone therapy, I met with Dr. Walker again, and he persisted in his recommendation that I undergo sex-reassignment surgery in order to treat my continued gender identity disorder.
17. Based upon Dr. Walker's promotion of sex reassignment surgery, I believed that I would finally have resolution to my life-long desire of becoming female, and I scheduled the sex reassignment surgery for April 1983. Notwithstanding my wife filing for divorce because of my decision, I went ahead with the surgery by Dr. Stanley Biber, who performed over 5,000 sex reassignment surgeries during his career.²

Life as a Female

18. Male to female reassignment surgery consists of removing the testicles while retaining the penis, but surgically inverting the penis into a pouch resembling a vagina. No female genitalia is ever used in the procedure. In addition to undergoing sex reassignment surgery, I changed my name from Walt Heyer to Laura Jensen and legally became female.

² <https://coloradoencyclopedia.org/article/dr-stanley-biber>

19. I lived nearly 8 years as a transgender female in California. While my initial reaction to my sex change surgery was positive, within three years after my surgery, my inner distress and conflict re-emerged. I became extremely anxious and depressed despite realizing my persistent desire of being a female through sex-reassignment surgery. I was suicidal.
20. In a state of desperation, I consulted a psychologist. The psychologist, a specialist in gender dysphoria, told me that adapting to my Laura identity could take several more years. At this time, I was switching between calling myself Laura and Walt every few days. I was even more confused than I had been before my transition, and yet, all I was told by the professionals was “give it time.”
21. Now that I had sadly discovered that transitioning genders did nothing to resolve my persistent mental suffering resulting from my grandmother’s affirming me as a girl and my uncle’s abuse of me sexually, there was no one was there to help me. I had received so much support and encouragement from the medical professionals to transition, but when it came to coping with the resulting consequences, I was all alone.
22. Prior to my reassignment surgery, there was always an assumed reason as to why I felt the way I did: I was a female trapped in a male body. Knowing that one day I could transition gave me a hope that the inner struggles I was facing would one day end. After my surgery, not only was I still struggling with my identity, but now I was living in a body that had been irrevocably altered.
23. As a result of my desire to find resolution to my personal struggle with mental health and self-acceptance, beginning in 1987, I enrolled at the University of California Santa Cruz and studied psychology and pharmacology, pursuing a state counseling certificate. During this time, I interned as a counselor to drug dependent individuals in San Jose, California, recording over 2500 hours of supervised counseling experience.
24. Following my internship in San Jose, I interned at Santa Monica Hospital near Los Angeles, California in the lockdown psychiatric unit. As part of my daily work, I accompanied a staff psychiatrist on patient rounds.

My Journey Back

25. After a time, the staff psychiatrist asked me about my childhood experiences. Based on what I told him and his observations of my behavior, he suggested that I might have a

previously undiagnosed and untreated disorder. At his suggestion, I met with a psychologist who assessed whether or not I had a co-existing disorder, and if so, what it was.

26. Seeking this counselling was a turning point for me. I was taken aback when I learned from the psychologist that people, like me, who had changed genders could have additional undiagnosed and untreated disorders such as depression, anxiety, bipolar disorder, obsessive-compulsive disorder, dissociative disorder, schizophrenia and body dysmorphic disorder, to mention a few. The inner conflict I had been experiencing my whole life was likely due to a previously undiagnosed disorder, not because I was born the wrong gender.
27. With this newfound knowledge, I went headlong into psychotherapy with four different counselors over approximately a two-year period. Through this psychotherapy I learned that being affirmed as a girl at a young age and being sexually abused by my uncle were most likely contributing factors to my dissociative disorder. I also learned that I was not alone: dissociative disorders, it has been reported, can be present in nearly 30% of all transgender individuals. See Colizzi, M., et al., *Dissociative symptoms in individuals with gender dysphoria: Is the elevated prevalence real?* *Psychiatry Research* (2015), available at <http://dx.doi.org/10.1016/j.psychres.2014.12.045> and attached as **Exhibit “A”** to this Affidavit.
28. The Sidran Institute, which works to help people understand and cope with traumatic stress and dissociative disorders, describes the cause of dissociative disorders this way: “Dissociative Disorders are now understood to be fairly common effects of severe trauma in early childhood. The most common cause is extreme, repeated physical, sexual, and/or emotional abuse.” See “What is a dissociative disorder?”, attached as **Exhibit “B”** to this Affidavit, available at <https://www.sidran.org/wp-content/uploads/2018/11/What-is-a-dissociative-disorder.pdf>. Dissociative disorders are a survival method, a way to cope.
29. Typically, an individual suffering with dissociative disorder dissociates, or detaches, from who he or she really is and attempts to become someone else who does not feel the pain of the past. In my case, I detached from Walt and became Laura at the time of my

reassignment surgery. To heal, I would need psychological treatment to work through the pain that Walt experienced so that Walt would no longer need to hide in the persona of Laura.

30. The gut-wrenching moment for me came when my psychologist told me that I faced a significant psychological and physical hurdle to re-integrating the identities because of the treatment I had undergone—hormone therapy and sex reassignment surgery—which refashioned my male body to look like a female named Laura. Not only had my transition failed to help my gender distress, it *added* to the difficulty of healing from the co-existing dissociative disorder.
31. Because Dr. Walker only focused his attention and diagnosis on gender identity disorder (albeit a correct diagnosis), he failed to take the necessary step of exploring the existence of other co-existing disorders that might also be causing my inner conflict. Dissociative disorder can mimic gender dysphoria and as a result, is often overlooked and undiagnosed. Now that a psychiatrist had taken the time to discover my co-existing disorder, it became apparent that my dissociative disorder should have been treated prior to any hormone treatment or gender reassignment surgery. Dr. Walker had taken a “shoot first, questions later” approach to my apparent gender identity disorder, rather than carefully considering the possible underlying or contributing psychological disorders.
32. I felt as though the life that I had been promised prior to my transition was a lie. Sex reassignment surgery had only complicated the treatment for my dissociative disorder.
33. Realizing that not only had transitioning been unsuccessful in resolving my psychological suffering, it had only complicated and hindered my healing. I lost any hope of living a happy life. In 1983 and 1986, I attempted suicide to avoid the pain and grief that was now my life. I would rather have been dead than live with the consequences of my reassignment surgery. Statistics show that 10 to 15 years after surgical reassignment, the suicide rate of those who had undergone sex-reassignment surgery rose to 20 times that of comparable peers. See Dhejne C, Lichtenstein P, Boman M, Johansson ALV, Langstrom N, et al. (2011) *Long-Term Follow-Up of Transsexual Persons Undergoing Sex Reassignment Surgery: Cohort Study in Sweden*. PLoS ONE 6(2): e16885. doi:10.1371/journal.pone.0016885 (“Dhejne Study”), available at

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0016885> and attached as **Exhibit “C”** to this Affidavit.

34. Fortunately for me, neither suicide attempt was successful. Subsequent to the last attempt, I reached out for further help and support I needed to recover from both the mental and physical trauma that I had been subjected to. It took a long time, and restoration was extremely difficult. I was in counseling for years, sometimes meeting every day, but finally I received effective treatment of my gender distress and the co-existing dissociative disorder through psychotherapy.
35. Once my dissociative disorder and deep-rooted childhood pain that had led to it were recognized and appropriately treated, my gender distress disappeared. It was only after treating the dissociative disorder that I achieved the serenity and happiness I had always dreamed of. In 1996, at the age of 55, I was finally free from the desire to live as a woman and changed my legal documents back to Walt, my biologically correct male sex. I still have scars on my chest, reminders of the gender detour that cost me 13 years of my life. I am on a hormone regimen to try to regulate a system that is permanently altered.

Common Experience of Sex Change Regret

36. Following my de-transition, I became the Director of Care/Counseling Ministries in Indian Wells, California at a church of over 3,000 regular attendees. I served in that position for three and a half years.
37. In 2009 I launched a website³ to reach out to those who regret having undergone sex reassignment surgery, in order to support them in experiencing their physical and mental wellbeing and restoring their innate sex. Over 350,000 people from 180 countries visited my website in the 2015 calendar year alone.
38. I have authored six books⁴ and been interviewed for television, radio and print media around the world.

³ sexchangeregret.com

⁴ *A Transgender's Faith* – Walt Heyer's autobiography

Paper Genders – the history of failed attempts to resolve psychiatric or psychological disorders with surgery

Gender Lies and Suicide – the tragedy of transgender suicide, with personal stories and research data

Perfected with Love –Walt Heyer's story giving insight into showing God's love to a transgender person

Kid Dakota and the Secret at Grandma's House – a novel based on Walt Heyer's life

39. My experience with transitioning and the pain and regret it caused is not unique. I don't count the number of people who contact me. But if I were to estimate, I'd say since 2015, I have informally mentored and assisted 300-500 transgendered individuals who regret transitioning from male to female or female to male. They initiate our interaction by sending an email requesting assistance to my email address which is publicly available on my website. Through back-and-forth email exchanges and sometimes through phone or Skype conversations, they describe how their gender dysphoria started and why they wish to go back, or detransition. I suggest ways to find the legal and psychological resources they need to proceed with detransition. Most of the people who contact me for advice on how to undo their sex change report having been abused or suffered some other trauma or loss as a child. I encourage those who have gender dysphoria who contact me to seek psychological and psychiatric assessment for other disorders that are also present, which is the case in a majority of those who desire to change genders. See à Campo, Nijman, Merckelbach, et al, *Psychiatric Comorbidity of Gender Identity Disorders: A Survey Among Dutch Psychiatrists*, Am J Psychiatry 2003; 160:1332–1336, available at <http://ajp.psychiatryonline.org>, and attached to this Affidavit as **Exhibit "D"**.
40. Some who write to me are clearly in deep distress, feeling the weight of a huge mistake. One Sunday, on Father's Day, I received an email from a man, an airline captain, who was ready to commit suicide. He had undergone gender reassignment surgery three years prior and realized it was the biggest mistake of his life and now he wanted to end it all. After several hundred emails, phone contact and getting him into counseling, thankfully he is still alive, working through his struggles and wanting to return to his innate gender after reassignment surgery.
41. Another man, a physician, wrote me expressing his regret with gender reassignment:
- How naïve and stupid was I despite being a well-trained physician with nearly two million in the bank. My gender story was the same as most. I felt trapped in the wrong body and thought of little else since age seven. I wanted to be a girl... If I could only go back to the day before my surgery in March of 2005 -- I would run from that surgeon's knife. I have lived and worked as a surgically altered man trying to play the part of a woman for six years... My attempt at being a member of the softer gender was

Trans Life Survivors – a portrayal of the human toll inflicted by experts who push gender transition on those who do not need it

not working, and I had become no more than a caricature and source of amusement for others. Now I was trapped—I was truly a person in the wrong body... I am now trying to correct this wrong, and for the first time I have the love and support of a wonderful loving human being. She has done much to educate me about women and who and what they truly are. Chromosomes do matter, and undeniable birth gender should not be altered.

42. Another email I received also evidence how transitioning has damaged lives. This man's story of transition started in his teens. When this man's childhood trauma was treated appropriately, his transgender feelings faded. Tragically, he lost ten years of his life and the ability to biologically father children, because of an overzealous recommendation to transition.

I transitioned to female beginning in my late teens and changed my name in my early 20s, over ten years ago. But it wasn't right for me; I feel only discontent now in the female role. I was told that my transgender feelings were permanent, immutable, physically deep-seated in my brain and could NEVER change, and that the only way I would ever find peace was to become female. The problem is, I don't have those feelings anymore. When I began seeing a psychologist a few years ago to help overcome some childhood trauma issues, my depression and anxiety began to wane but so did my transgender feelings. So two years ago I began contemplating going back to my birth gender, and it feels right to do so. I have no doubts--I want to be male!

I did have orchiectomy [the removal of one or both testicles], and that happened before my male puberty had completed, so I have a bit of facial hair which I never bothered to get electrolysis or laser for, and so the one blessing about all this is that with male hormone treatment I can still resume my male puberty where it was interrupted and grow a full beard and deep voice like I would have had if transgender feelings hadn't intruded upon my childhood. My breasts are difficult to hide though, so I'll need surgery to get rid of them. And saddest of all, I can never have children, which I pray God will give me the strength to withstand that sadness.

43. From my experience and what I have learned from the hundreds of others who have shared their experiences with me, the consequence of providing cross-gender hormones and sex reassignment surgery is creating a world where so many individuals unnecessarily live a life full of regret.

44. To the best of my ability, I continue to seek to encourage and support anyone who is struggling for healing after experiencing the devastating consequences of the false view that hormones and sex reassignment would resolve their gender incongruity. Through my media appearances and books, I try to share my story of hope to encourage individuals to find lasting relief from the psychological and physical suffering caused by their gender dysphoria and the frequently accompanying disorders and real wholeness in their innate gender identity.

View of Gender Dysphoria Promoted in Alberta

45. In regard to the treating of gender dysphoria, little has changed from the days I sought out Dr. Walker in 1981. The majority of gender dysphoria specialists continue to urge individuals to undergo hormone therapy and gender reassignment surgery while disregarding the possibility that a coexisting psychological disorder could be the primary cause driving the desire to change genders.
46. I have seen much despair and regret over the years from hormone therapy and reassignment surgeries. Almost all of those who write to me say that their wish to de-transition comes anywhere from three weeks to fifteen years after sex reassignment surgery. Some of the common themes are:
- Feeling that their gender specialists failed to consider co-existing disorders and rushed them into cross-sex hormones and sex reassignment surgery;
 - Existence of some traumatic event or events in their childhood, such as physical or sexual abuse, like I had;
 - A desire to get their original body back, but realizing some changes, such as genital surgery and dependence on artificial hormones, cannot be undone.
47. Hormones are incredibly powerful drugs and taking them can alter how one looks, thinks, feels and even behaves. Hormone therapy lures the person into desiring sex reassignment surgery. Hormones and surgery have been known to offer a temporary reprieve, but not a long-term solution. If hormones and reassignment surgery were a lifetime solution there would be no regret, no unhappiness and drastically fewer transgender persons like myself attempting suicide.
48. Increasingly, there has been a marked focus on promoting gender transition to younger and younger people.

49. The materials filed with the Court in this case indicate that school clubs and activities, including specifically Gay-Straight Alliances, are actively promoting to students the same views that were promoted to me by Dr. Walker. This includes the view that gender is not binary, but is merely a social construct: see Affidavit of Hilary Mutch, Exhibits C, G, and I [pdf pages 24, 41, 44 and 67; Affidavit of Theresa Ng at paragraphs 21-24, 26-27, Exhibits G, H, J and K; Affidavit of Donald Stacey, at paragraph 10(iii); Affidavit of FR at paragraphs 19-21, Exhibit A [PDF pp 17, 20]. Further, the Affidavits of AA, PT, and JP, indicate that persons involved in these groups and activities actively promoted the kind of treatment that jeopardized my mental and physical health, and indeed my life. Of serious concern is the fact that there appears to have been little if any consideration about the impact that other pre-existing, underlying or accompanying mental health challenges may be having on these children. Rather, it appears that misinformed persons, without appropriate medical and psychological training or understanding, are using these clubs and activities to steer to vulnerable young people to embark on the same course of treatment that nearly cost me my life, without resolving my mental suffering.
50. To tell a child he or she can select a gender is factually a lie. It is a false hope. Such a suggestion plants the notion inside the minds of young people that the essence of who they are is wrong. They are not someone to be loved or embraced but eradicated. Affirming someone as the opposite gender reinforces the deep discomfort already undermining his or her identity.
51. When the transitioning using cross-sex hormones and sex reassignment surgery was promoted to me as a solution to my gender identity disorder, I leapt at the promise that this would resolve the persistent suffering I had experienced. Even though I was an adult in my early 40s, I thought resolving the psychological anguish I was experiencing outweighed any concerns about the possible risks and harms of transitioning. Once I heard of the possibility of transitioning physiologically and physically to a female, it was a consuming thought until I had received the treatments and surgeries.
52. To see that these same views are being promoted to vulnerable school children who may be experiencing gender dysphoria causes me great concern for how they will be negatively affected. My concerns are magnified by the fact that those promoting these

views are not providing these children with accurate knowledge of the serious risks that hormone therapy and sex change surgery pose to their psychological and physical health, or the fact that these therapies do not provide a lasting remedy to their mental anguish or suffering.

53. In this context to prohibit notification of parents that this kind of information is being promoted to their children in groups or activities exacerbates the risk of harm to these children, who without the ability to engage in a rational and objective consideration of potential risks of transitioning are now deprived of the necessary support of those with the primary responsibility help them make such considerations and determinations.
54. Through my own journey, and now in providing hope and support over the last nine years to hundreds of individuals who have suffered with gender dysphoria and regret their sex change, the involvement and support of family, especially the parents who know the child best, is essential to uncovering the onset of the child's gender dysphoria, that is, the events that caused the child's desire to abandon who they are and attempt to change to someone they can never truly be. The input of the parents is often essential to saving the child's life and helping them to find lasting healing and resolution of their gender dysphoria, a much preferred outcome than merely relieving a teenager's transient feelings with permanent sex change solutions.
55. Here is an example from a recent email exchange with the mother of a 14-year-old girl. The girl's father and older step-brother had emotionally and physically abused her and her mother before her mother got a divorce five years ago and moved away. As the mother opened a dialogue with her daughter about the girl's transgender feelings, the mother learned the girl's feelings started with participation in an online group. Mom gave this new information to her daughter's psychologist who confirmed that social media was exerting a strong influence on the girl's identifying as a boy, but also warned the mother there was nothing she could do. I suggested the mother find a quiet time to talk to her daughter and share how the abuse affected her and that she was concerned that abuse also hurt her daughter. Two days later, the mother replied:

I thought you may want to know how things are with my daughter.

We talked a lot and cried yesterday, and it came out that she wants to cancel the past, that she feels to be unworthy because of what happened.

So yes, she has nothing to do with transgender stuff, she thought it could be a way to escape from things she suffered from and so she needs help to digest that.

56. Hormone therapy and sex reassignment surgery were not the answer to my gender identity disorder. When children in schools are taught that these treatments are the solution to their inner conflicts, they are being taught a lie that could leave them, like me, in a state of utter despair. The fact that children are being taught these lies without their parent's knowledge fails to properly take into consideration the child's best interest, and the life-long consequences that the child will have to endure.

Conclusion

57. After living with gender dysphoria for over 70 years, I am convinced that people are not born with it. We believe we are trapped in the wrong body, but it is due to emotional, psychological and/or psychiatric problems that have not been diagnosed or treated properly. Hormones and surgery are not the solution for these issues.


58. Thankfully, my gender distress, transgenderism, and the ineffective and damaging experience of receiving hormone therapy and sex-reassignment surgery did not define my entire life. After finally gaining more understanding of gender dysphoria and receiving treatment of my underlying psychological disorder, by the age of 55, I finally felt whole living as a man at peace with my body and my male gender. I have remarried and have enjoyed over 20 years with my loving wife.

59. It is my desire to help those who suffer with gender dysphoria, including the dire consequences of hormone therapy and sex-reassignment surgery, find resolution of their suffering, serenity and wholeness. Further, I desire to equip individuals with knowledge and understanding they need to avoid the damaging consequences of hormone and sex change surgery that I experienced.

60. I swear this Affidavit bona fide and for no improper purpose.

SWORN BEFORE ME at Surprise, Arizona in the)
State of Arizona, this 21 day of June, 2019.)



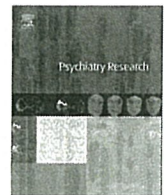

WALT HEYER



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Dissociative symptoms in individuals with gender dysphoria: Is the elevated prevalence real?

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State of ARIZONA County of MARICOPA
 Subscribed and sworn before me on 6/27/2019
 (Date)

(Notary Signature)

This is Exhibit "A" to the Affidavit of Walt Meyer.

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Transsexualism

Gender dysphoria

Gender reaffirming treatment

Dissociative symptoms

Childhood trauma

Body uneasiness

ABSTRACT

This study evaluated dissociative symptomatology, childhood trauma and body uneasiness in 118 individuals with gender dysphoria, also evaluating dissociative symptoms in follow-up assessments after sex reassignment procedures were performed. We used both clinical interviews (Dissociative Disorders Interview Schedule) and self-reported scales (Dissociative Experiences Scale). A dissociative disorder of any kind seemed to be greatly prevalent (29.6%). Moreover, individuals with gender dysphoria had a high prevalence of lifetime major depressive episode (45.8%), suicide attempts (21.2%) and childhood trauma (45.8%), and all these conditions were more frequent in patients who fulfilled diagnostic criteria for any kind of dissociative disorder. Finally, when treated, patients reported lower dissociative symptoms. Results confirmed previous research about distress in gender dysphoria and improved mental health due to sex reassignment procedures. However, it resulted to be difficult to ascertain dissociation in the context of gender dysphoria, because of the similarities between the two conditions and the possible limited application of clinical instruments which do not provide an adequate differential diagnosis. Therefore, because the body uneasiness is common to dissociative experiences and gender dysphoria, the question is whether dissociation is to be seen not as an expression of pathological dissociative experiences but as a genuine feature of gender dysphoria.

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1. Introduction

In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), people whose gender at birth is contrary to the one they identify with are diagnosed with gender dysphoria (GD). This diagnosis is a revision of DSM-IV criteria for Gender Identity Disorder (APA, 2000) and is intended to better characterize the experiences and discomfort of GD patients (www.dsm5.org). Most of the countries involved in the care of persons with GD have accepted the standards of care (SOC) developed by the World Professional Association for Transgender Health (WPATH) which are based on a somatic and psychiatric assessment before the initiation of a hormone-surgical treatment (Coleman et al., 2012). The psychiatric evaluation consists of verifying the following main criteria: to accurately diagnose the gender dysphoria (DSM criteria fulfilled); to verify the persistence of the request; to diagnose/treat any comorbid psychiatric conditions. It is important to note that gender nonconformity is not in itself a mental disorder. The critical element of gender dysphoria is the presence of clinically significant distress associated with the

condition (Gómez-Gil et al., 2009; Colizzi et al., 2013). In accordance with the WPATH SOC (Coleman et al., 2012), the two major goals of cross-sex hormonal therapy are as follows: (1) to reduce endogenous hormone levels and, thereby, the secondary sex characteristics of the individual's biological (genetic) sex and assigned gender; and (2) to replace endogenous sex hormone levels with those of the reassigned sex by using the principles of hormone replacement treatment of hypogonadal patients (Hembree et al., 2009). Sex reassignment surgery is often the last and the most considered step in the treatment process for GD. For many patients, relief from GD cannot be achieved without modification of their primary and/or secondary sex characteristics to establish greater congruence with their gender identity (Coleman et al., 2012).

The origins of gender dysphoria are still largely unclear (Cohen-Kettenis and Gooren, 1999). Various studies investigated concurrent psychopathology in GD, with contradictory findings. Some research reported a high prevalence of psychiatric comorbidity, including affective disorders, anxiety disorders, substance-related disorders and personality disorders (à Campo et al., 2003; Hepp et al., 2005; Heylens et al., 2014). Moreover, in some cases also a high prevalence of psychotic disorders (à Campo et al., 2003; Hepp et al., 2005), dissociative disorders (à Campo et al., 2003) and somatoform disorders (Hepp et al., 2005) was reported. Instead, other studies indicated that the majority of GD patients had no

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psychiatric comorbidity (Hoshiai et al., 2010; Gómez-Gil et al., 2012; Fisher et al., 2013; Colizzi et al., 2014). Among these studies showing a low level of psychopathology, affective disorders, anxiety disorders and adjustment disorders were the most common comorbidities (Hoshiai et al., 2010; Gómez-Gil et al., 2012; Fisher et al., 2013; Colizzi et al., 2014).

Attention has been repeatedly drawn in the scientific literature to clinical similarities between GD experiences and dissociative disorders (Coons, 1984; Putnam, 1989; Modestin and Ebner, 1995; Steinberg, 1995). Patients with dissociative identity disorder (DID) frequently experience disturbances in their sexual identity, and many patients with DID have sexually oriented changes in alter-personalities, so that special significance is to be attributed to this disorder with respect to the differential diagnosis of GD. In the last decades a number of case reports of GD patients with features of a DID draw attention to this problem (Lief et al., 1962; Money and Primrose, 1968; Weitzmann et al., 1970; Money, 1974). However, only two studies have recently investigated the occurrence of dissociative symptoms in GD patients by disorder-specific assessment instruments, reporting higher dissociative symptoms than control subjects (Kersting et al., 2003; Shiah et al., 2004). Moreover, in the first study of 41 GD patients who performed a self-reported scale about dissociative symptoms only six patients were also evaluated by a clinical interview (Kersting et al., 2003). Instead the second research studied only a small group of 18 Male to Female (MtF) subjects by self-reported evaluations (Shiah et al., 2004).

In the past few decades follow-up studies have shown an undeniable beneficial effect of sex reassignment surgery on GD patients' subjective well-being. In contrast, the role of the cross-sex hormonal treatment in the well-being of GD patients has been the subject of very little investigation (Murad et al., 2011; Coleman et al., 2012). A meta-analysis identified only five studies that specifically examined the impact of hormonal therapy on GD patients' well-being, focusing on transformation satisfaction, psychological profile, cognitive function and emotional repercussions (Murad et al., 2011). More recently other studies revealed that hormonal therapy is positively associated with quality of life (Gorin-Labat et al., 2012; Mormans et al., 2012) and mental health (Gómez-Gil et al., 2012; Colizzi et al., 2014). Instead, no research has previously investigated the possible effects of hormone therapy as well as sex reassignment surgery on dissociative symptoms in gender dysphoria.

To our knowledge, GD patients' dissociative disorders comorbidity (qualitative data) and self-reported dissociative symptoms (quantitative data) in the same large sample have not been previously evaluated. Similarly, differences in dissociative symptoms related to hormonal treatment and sex reassignment surgery in a longitudinal study have not been previously reported.

As part of a larger research on psychobiological and mental distress in GD patients attending a Gender Identity Unit (Colizzi et al., 2013, 2014), using diagnostic clinical interviews and self-reported scales, the aims of this study were to assess the following: (1) dissociative disorders/symptoms; (2) other dissociative disorder related conditions, including childhood trauma history (abuse and neglect) and body image related distress; (3) dissociative symptoms in follow-up assessments after the beginning of the cross-sex hormone treatment and after sex reassignment surgery. On the basis of our clinical experience and of previous studies, we hypothesized a high rate of dissociative symptomatology, dissociative disorder related conditions and childhood trauma in GD individuals. Moreover, we suggested a higher prevalence of dissociative disorder related conditions, trauma and body image related distress in GD patients who fulfill diagnostic criteria for a dissociative disorder. Finally, we suggested a significant reduction of

dissociative symptoms in GD patients after the beginning of hormonal treatment as well as after sex reassignment surgery.

2. Methods

2.1. Study design and sample

This study incorporated a longitudinal design and was conducted at the Gender Identity Unit of the Bari University Psychiatric Department. A consecutive series of 118 patients was evaluated for gender dysphoria from 2008 to 2012. The inclusion/exclusion criteria have been described previously (Colizzi et al., 2014); they were verified during a period of about 24 weeks (enrolment period). The study was proposed to each consecutive eligible subject by the care team during a routine visit. All the 118 individuals (82 MtF; 36 Female to Male, FtM) agreed to voluntarily participate in the study and provided written informed consent.

All the patients in this study received hormonal therapy after the enrollment period. Hormonal treatment for MtF patients consisted of transdermal estradiol gel (1.84 ± 0.49 mg/day), in association with oral cyproterone acetate (100 mg/day). The androgen administration schedule in FtM patients consisted of testosterone administered as intramuscular injections of a testosterone esters depot (250 mg every 26.31 ± 2.68 days).

While the entire sample of this study received hormone therapy, only 22 subjects (19%) received also sex reassignment surgery [16 MtF (20%), six FtM (17%)]. The relatively small numbers of patients who underwent sex reassignment surgery was prevalently due to (1) limited number of surgical units providing these surgical services at the Bari University. Other less common reasons for not receiving sex reassignment surgery included (2) specialist medical/psychological report not yet completed ($N=23$, 19%); (3) patient's refusal of surgical treatment ($N=16$, 14%); (4) waiting for legal authorization ($N=11$, 9%); (5) contraindication to surgery ($N=1$, 1%). Of the 16 MtF patients, all individuals received additive mastoplasty while 69% ($N=11$) received also vaginoplasty surgery. Of the six FtM patients, all individuals received reductive mastoplasty while only 33% ($N=2$) received also phalloplasty surgery.

Only nine GD patients (8%) [seven MtF (9%) and two FtM (6%)] passed in their desired gender role without hormonal treatment; all the other GD patients required hormonal treatment before undertaking gender role reassignment. During the study period all the individuals underwent a "real-life experience", living full time and continually in the desired gender role, including dressing and interacting socially as the desired gender. The unit has adopted the standards of care guidelines of the WPATH (Coleman et al., 2012).

The following data were collected: age, gender identity (MtF, FtM), education level (years of study), partnership status (not single/single), living arrangement (partner or parents/alone), employment status (no/yes) and sexual orientation (same biological sex: MtF patients androphilic, FtM patients gynephilic; opposite biological sex: MtF patients gynephilic, FtM patients androphilic).

2.2. Clinical assessment instruments

2.2.1. Dissociative Disorders Interview Schedule (DDIS)

In order to investigate dissociative disorders in the sample, we used the DDIS schedule. The DDIS is a structured interview consisting of 132 items which investigate dissociative disorders/symptoms, other related conditions, previous/current psychopharmacological treatments, suicide attempts and childhood trauma history (Ross et al., 1989). The DDIS has an overall inter-rater reliability of 0.68 (κ), a sensitivity of 90% and a specificity of 100% for the diagnosis of dissociative identity disorder (Ross et al., 1989; Saxe et al., 1993). The DDIS was performed during the enrollment period.

2.2.2. Body Uneasiness Test (BUT)

In order to investigate body image related distress, we used the Body Uneasiness Test (BUT). The BUT is a self-administered questionnaire specifically designed to explore several areas in clinical and non-clinical populations: body shape and/or weight dissatisfaction, avoidance, compulsive control behaviors, feelings of detachment and estrangement toward one's own body, and specific worries about particular body parts, shapes or functions (Cuzzolaro et al., 2006). The BUT consists of two parts. BUT-A consists of 34 items scored on a six-point Likert-type scale (from 0 to 5); the scores are combined in a Global Severity Index and in five subscales: weight phobia, body image concerns, avoidance, compulsive self-monitoring, and depersonalization. BUT-B has 37 items that look at specific worries about particular body parts or functions; the number of items from BUT-B with scores of 1 or higher is summed in a global measure, the Positive Symptoms Total, to indicate overall dislike of body parts. Higher scores indicated greater body uneasiness. The levels of Cronbach's alpha coefficients range between 0.64 and 0.89 (Cuzzolaro et al., 2006), therefore, internal consistency of BUT appears to be good (Thomson et al., 1990). The BUT was performed during the enrollment period.

2.2.3. Dissociative Experiences Scale (DES)

In order to investigate dissociative symptoms in the sample, we used the DES scale. The Dissociative Experiences Scale (DES) is a 28-item self-report measure of psychological dissociation (Bernstein and Putnam, 1986). It is not a diagnostic tool but serves as a screening device for chronic dissociative disorders, with possible scores ranging from 0 to 100. The instrument has three subscales: amnesic dissociation, depersonalization/derealization and absorption/imaginative involvement. Another subset of eight DES items forms the taxon subscale, which is thought to be especially sensitive to pathological dissociation (Waller et al., 1996). Waller and colleagues have proposed a procedure to derive Bayesian taxon membership probabilities from these eight items (Waller and Ross, 1997). These probabilities reflect the chance that individuals belong to the pathological dissociative taxon. Consistently with previous studies (Giesbrecht et al., 2007), we used two different cut-offs to create dichotomous measures of taxon-membership versus nontaxon-membership. Specifically, GD patients with taxon probabilities above 0.50 were assigned to the taxon-50 class (liberal cut-off) and GD patients with a taxon probability exceeding 0.90 were assigned to the taxon-90 class (stringent cut-off). The DES scale has adequate split-half reliability and test-retest reliability, as well as good convergent and discriminant validity (Bernstein and Putnam, 1983). The Italian translation (Schimmenti et al., unpublished data) of the DES showed good internal consistency, good test-retest reliability, and good convergent validity in a mixed clinical and non-clinical sample. This self-reported questionnaire was performed after the enrollment period, when the GD patients received the eligibility for the cross-sex hormonal treatment (baseline), after about 12 months (53.41 weeks \pm 19.13 days) of hormone therapy (HT follow-up), and about 2 years (23.81 months \pm 13.18 months) after sex reassignment surgery (SRS follow-up).

2.3. Statistical analysis

All analyses were conducted using STATA 10 (Stata Corp., USA). The difference of the proportion of MtF and FtM patients among partnership status, living arrangement, employment status, sexual orientation and DDIS dissociative disorder status as well as the difference of the proportion of GD patients with and without a Dissociative Disorder among DDIS dissociative disorder related conditions and childhood trauma history were evaluated using the chi-square (or Fisher's Exact test for 2 \times 2 tables). Also the difference of the proportion of the GD patients and the general population among the DDIS dissociative disorder status was evaluated using the chi-square. The comparison of age and level of education between MtF and FtM patients as well as the comparison of DES scores, DDIS features associated with Dissociative identity disorder and BUT body image related distress between GD patients with and without a Dissociative Disorder were performed using independent t-tests. Also the comparison of DES scores between GD patients and the general population was performed using independent t-test. The comparison of DES scores between untreated (baseline) and treated GD patients (HT and SRS follow-up) was performed using dependent/independent t-tests and McNemar's tests. Finally, GD patients' DES scores were also calculated excluding the item on the gender related sense of strangeness, as in Giesbrecht et al., 2007. The obtained

baseline GD patients' DES scores were compared to the general population's DES scores using independent t-tests. The significance level was set at $p < 0.05$.

2.4. Ethics

All the patients gave their informed consent to participate in the study, which had been approved by the Ethical Committee of the Medical Faculty, University of Bari (983/CE), in agreement with the Declaration of Helsinki.

3. Results

3.1. Sociodemographic information

Age, level of education, partnership status, living arrangement, employment status and sexual orientation of the 118 GD patients included in this study were reported in Table 1. MtF and FtM did not show differences between their sociodemographic characteristics (Table 1; all $p > 0.1$). There were no differences in sociodemographic characteristics between GD patients who received only hormonal treatment ($n=96$) and GD patients who received also sex reassignment surgery ($n=22$; all $p > 0.1$).

3.2. Prevalence of dissociative disorders

The lifetime prevalence of dissociative disorders among GD patients was 29.6% ($n=35$). Dissociative disorder not otherwise specified (DDNOS) was the most prevalent type of dissociative disorder. Instead, DID, the most complex dissociative disorder, was relatively rare (Table 1). There were no significant differences in sociodemographic variables between GD patients with and without a dissociative disorder (all $p > 0.1$). Moreover, there were no significant differences in the lifetime prevalence of dissociative disorders between MtF and FtM patients (all $p > 0.1$; Table 2). Finally, the DDIS dissociative disorder rate in GD individuals was higher than that obtained among a general population ($n=502$) with the same methodology (12.2%; $\chi^2=22.4$, $p < 0.001$) by Ross et al., 1991).

Table 1
Gender dysphoria patients' sociodemographic characteristics.

	GD patients $n=118$ M (S.D.)	MtF patients $n=82$ (69.5%) M (S.D.)	FtM patients $n=36$ (30.5%) M (S.D.)	P t test
Age	30.23 (8.85)	30.41 (9.77)	29.81 (6.39)	> 0.01
Level of education (years of study)	10.45 (3.68)	10.26 (3.72)	10.89 (3.62)	> 0.01
	n (%)	n (%)	n (%)	χ^2
Partnership status				
Single	39 (33%)	26 (32%)	13 (36%)	> 0.01
Not single	79 (67%)	56 (68%)	23 (64%)	> 0.01
Living arrangement				
With parents/partner	91 (77%)	64 (78%)	27 (75%)	> 0.01
Alone	27 (23%)	18 (22%)	9 (25%)	> 0.01
Employment status				
Employed	78 (66%)	53 (65%)	25 (69%)	> 0.01
Not employed	40 (34%)	29 (35%)	11 (31%)	> 0.01
Sexual orientation				
Same biological sex	107 (91%)	76 (93%)	31 (86%)	> 0.01
Opposite biological sex	11 (9%)	6 (7%)	5 (14%)	> 0.01

GD, gender dysphoria; MtF, Male to Female; FtM, Female to Male; opposite biological sex: MtF patients gynephilic, FtM patients androphilic.

* Same biological sex: MtF patients androphilic, FtM patients gynephilic.

Table 2

Prevalence of dissociative disorders evaluated with DDIS in Gender Dysphoria patients and statistical comparisons with Chi-square.

Type of dissociative disorder	GD patients n=118 n (%)	MtF patients n=82 n (%)	FtM patients n=36 n (%)	χ^2	P
Dissociative disorder not otherwise specified (DDNOS)	19 (16.1)	15 (18.3)	4 (11.1)		0.42
DDNOS with two or more distinct personality states	6 (5.1)	5 (6.1)	1 (2.8)		0.67
DDNOS with indirect cues for personality states	4 (3.4)	3 (3.7)	1 (2.8)	^a	1
Derealization without depersonalization	8 (6.8)	6 (7.3)	2 (5.5)	^a	1
Dissociation due to coercive persuasion	0 (0)	0 (0)	0 (0)		1
Dissociative Trance Disorder	1 (0.8)	1 (1.2)	0 (0)		1
Dissociative amnesia	11 (9.3)	8 (9.8)	3 (8.3)		1
Depersonalization disorder	4 (3.4)	3 (3.7)	1 (2.8)		1
Dissociative identity disorder (DID)	1 (0.8)	1 (1.2)	0 (0)		1
Dissociative fugue	0 (0)	0 (0)	0 (0)		1
Total	35 (29.6)	27 (33)	8 (22.2)	1.37	0.24

DDIS, Dissociative Disorders Interview Schedule; GD, gender dysphoria; MtF, Male to Female; FtM, Female to Male.

^a Fisher's exact test.

3.3. Dissociative disorder related conditions, childhood trauma history and body image related distress

Of the 118 GD patients included in this study, 54 individuals (45.8%) received a lifetime major depressive episode diagnosis based on the DDIS interview. Somatization disorder was the most common dissociative disorder related condition (17.8%). Instead, substance abuse was relatively rare (1.7%). More than one out of five patients reported suicide attempts (21.2%, $n=25$). In addition, 31 patients (26.3%) reported a previous psychopharmacological treatment. Instead, only 17 patients (14.4%) reported a current psychopharmacological treatment (Table 3). Except for substance abuse, the prevalence of these conditions among the group with a dissociative disorder was significantly higher than for the remaining research participants (Table 3).

Furthermore, a large part of the GD group reported childhood trauma (abuse and/or neglect, 45.8%). Physical and emotional neglect had the highest average prevalence, followed by emotional and physical abuse (Table 4). Except for nutrition and medical care, participants with a dissociative disorder reported all types of childhood trauma more frequently than the remaining GD patients (Table 4).

Finally, participants with a dissociative disorder reported higher scores for all the DDIS features associated with dissociative identity disorder, compared with participants with no history of dissociative disorder (DID; Table 5). Similarly, GD patients with a dissociative disorder reported higher body image related distress for all the BUT areas, with the exception of the compulsive self-monitoring, which only tended to be significantly higher (Table 5).

3.4. Dissociative symptoms scores in GD patients according to the dissociative disorder status and before (baseline) and after sex reassignment procedures (cross-sex hormonal treatment and sex reassignment surgery follow-up)

Participants with a dissociative disorder reported significantly higher scores for the DES total and subscales scores compared to the remaining GD patients (Table 5). Moreover, the prevalence of DES dissociative symptoms at baseline ($n=118$, $M=13.54$, $S.D.=10.78$) was significantly higher than that found in a general population with the same methodology ($n=1055$, $M=10.8$, $S.D.=10.2$; $t=2.75$, $p=0.006$) by Ross and colleagues (1990). However, considering the prevalence of pathological dissociation, based on the DES taxon subscale and related taxon membership probabilities, a relatively low proportion of GD patients reported a score symptomatic of pathological dissociation (>0.50 ; 11%, $N=13$). The prevalence of pathological dissociation was even lower applying a stringent cut-off (>0.90 ; 5%, $N=6$; Table 6).

Table 3

Dissociative disorder related conditions evaluated with DDIS in Gender Dysphoria patients according to the dissociative disorder status and statistical comparisons with Chi-square.

	Overall study group n=118 n (%)	GD patients with a DD n=35 n (%)	GD patients without a DD n=83 n (%)	χ^2	P
Lifetime MDE	54 (45.8%)	26 (74.3%)	28 (33.7%)	16.31	<0.001
Somatization disorder	21 (17.8%)	10 (28.6%)	11 (13.3%)	3.95	0.047
Substance abuse	2 (1.7%)	1 (2.9%)	1 (1.2%)		0.51
Suicide attempt	25 (21.2%)	12 (34.3%)	13 (15.7%)	5.11	0.024
Previous PP treatment	31 (26.3%)	16 (45.7%)	15 (18.1%)	9.71	0.002
Current PP treatment	17 (14.4%)	9 (25.7%)	8 (9.6%)	5.16	0.023

DDIS, dissociative disorders Interview Schedule; GD, Gender dysphoria; DD, dissociative disorder; MDE, major depressive episode PP, psychopharmacological.

^a Fisher's exact test.

When treated with cross-sex hormonal treatment (HT follow-up) GD patients reported significant lower depersonalization/derealization ($p < 0.001$), absorption/imaginative involvement ($p=0.027$) and DES total score ($p < 0.001$) than at baseline (Table 6). Even if the DES taxon score was significantly lower in hormone treated GD individuals ($p=0.04$), cross-sex hormonal treatment did not significantly reduce the proportion of individuals with a taxon membership probability symptomatic of pathological dissociation (all $p > 0.1$, Table 6). A similar pattern was found in GD patients after sex reassignment surgery: at SRS follow-up, GD patients reported significant lower depersonalization/derealization ($p=0.001$) and DES total score ($p=0.048$) than at baseline (Table 6), while DES taxon score and taxon membership probabilities were not influenced by sex reassignment surgery (all $p > 0.1$). Instead, there were no significant differences in GD patients' DES scores between HT and SRS follow-up. Moreover, the prevalence of DES dissociative symptoms at HT follow-up ($n=118$, $M=8.70$, $S.D.=9.47$) was significantly lower than that found in the general population (Ross et al. 1990; $t=2.14$, $p=0.03$). Instead, the prevalence of DES dissociative symptoms at SRS follow-up ($n=22$, $M=8.87$, $S.D.=5.02$) was not significantly different from that found in the general population (Ross et al. 1990; $t=0.88$, $p=0.38$).

Furthermore, calculating the baseline DES depersonalization/derealization subscale score without the item "Some people sometimes have the experience of feeling that their body does not belong to them" leads to a reduction of more than 30%

Table 4

Prevalence of childhood trauma history evaluated with DDIS in Gender Dysphoria patients according to the dissociative disorder status and statistical comparisons with Chi-square.

	Overall study group n=118 n (%)	GD patients with a DD n=35 n (%)	GD patients without a DD n=83 n (%)	χ^2	p
Neglect (emotional and/or physical)	48 (40.1%)	22 (62.9%)	26 (31.3%)	10.14	0.001
Emotional neglect	28 (23.7%)	13 (37.1%)	15 (18.1%)	4.95	0.026
Physical neglect	34 (28.8%)	16 (45.7%)	18 (21.7%)	6.93	0.008
Early cessation of education	31 (26.3%)	15 (42.9%)	16 (19.3%)	7.07	0.008
Deficient nutrition	6 (5.1%)	4 (11.4%)	2 (2.4%)		0.063
Deficient medical care	7 (5.9%)	3 (8.6%)	4 (4.8%)		0.42
Deficient security	8 (6.8%)	5 (14.3%)	3 (3.6%)		0.049
Economic restriction	7 (5.9%)	5 (14.3%)	2 (2.4%)		0.024
Emotional abuse	23 (19.5%)	11 (31.4%)	12 (14.5%)	4.52	0.033
Physical abuse	19 (16.1%)	10 (28.6%)	9 (10.8%)	6.16	0.013
Sexual abuse	11 (9.3%)	7 (20.0%)	4 (4.8%)		0.015
Any abuse or neglect	54 (45.8%)	25 (71.4%)	29 (34.9%)	13.21	< 0.001

DDIS, Dissociative Disorders Interview Schedule; GD, gender dysphoria; DD, dissociative disorder;

^a Fisher's exact test.

Table 5

Means and standard deviations of dissociative symptoms (DES items), features associated with Dissociative identity disorder (DDIS items) and body image related distress (BUT items) among gender dysphoria patients according to the dissociative disorder status and statistical comparisons with independent t test.

	Overall study group n=118 M (S.D.)	GD patients with a DD n=35 M (S.D.)	GD patients without a DD n=83 M (S.D.)	t test	P
DES symptoms					
Amnesia	4.62 (4.35)	5.97 (4.85)	4.06 (4.01)	2.22	0.028
Depersonalization/derealization	19.05 (13.03)	27.66 (14.74)	15.42 (10.35)	5.14	< 0.001
Absorption/imaginative involvement	16.63 (13.72)	22.11 (16.95)	13.83 (10.64)	3.21	0.002
DES Total Score	13.54 (10.78)	19.69 (13.69)	10.95 (8.08)	4.31	< 0.001
DDIS symptoms (possible range)					
Somatic complaints (0–36)	7.7 (5.5)	10.3 (6.8)	6.6 (4.5)	3.48	< 0.001
Secondary features of DID (0–16)	2.0 (2.2)	3.6 (3.1)	1.3 (1.2)	5.83	< 0.001
Schneiderian symptoms (0–11)	1.1 (2.3)	2.8 (3.3)	0.4 (1.1)	5.92	< 0.001
BPD criteria (1–8)	1.6 (2.2)	2.6 (3.2)	1.2 (1.4)	3.32	0.001
Extrasensory perceptions (0–16)	0.5 (1.1)	0.9 (1.6)	0.3 (0.8)	2.71	0.008
BUT areas (possible range)					
Global Severity Index (0–5)	2.4 (1.4)	2.8 (1.3)	2.1 (1.4)	2.55	0.01
Positive symptoms total (0–37)	17.9 (10.5)	21.1 (12.3)	16.5 (9.4)	2.2	0.03
Weight phobia (0–5)	2.4 (1.2)	3.0 (1.1)	2.2 (1.2)	3.75	< 0.001
Body image concerns (0–5)	3.2 (1.7)	3.8 (1.2)	2.9 (1.8)	2.53	0.01
Avoidance (0–5)	2.1 (1.4)	2.5 (1.4)	1.9 (1.3)	2.09	0.04
Compulsive self-monitoring (0–5)	1.8 (1.5)	2.2 (1.6)	1.6 (1.4)	1.81	0.07
Depersonalization (0–5)	2.9 (1.6)	3.7 (1.4)	2.6 (1.6)	3.4	0.001

DES, Dissociative Experiences Scale; DDIS, dissociative disorders Interview Schedule; BUT, Body Uneasiness Test; GD, gender dysphoria; DD, dissociative disorder; DID, Dissociative identity disorder; BPD, Borderline Personality Disorder.

($M=12.72$, $S.D.=11.18$). In addition, calculating the baseline DES total score without this item ($M=11.58$, $S.D.=9.32$), the difference in the dissociative symptoms between non-hormone treated GD patients and the general population (Ross et al., 1990) was no more significant ($t=0.79$, $p=0.43$). Finally, there were no significant differences in all the study variables between MtF and FtM GD patients, both at baseline and follow-up (all $p > 0.1$). In the same way there were no significant differences in the study variables according to the sexual orientation neither between patients who passed in their desired gender role without hormonal treatment and all the other GD patients, both at baseline and follow-up (all $p > 0.1$).

4. Discussion

This study reported for the first time a large and systematic investigation of the prevalence of dissociative disorders, dissociative

disorder related conditions, childhood trauma history and body image related distress in gender dysphoria, also investigating the role of cross-sex hormonal treatment as well as sex reassignment surgery in GD patients' dissociative symptoms. Although a previous evaluation in the same sample did not indicate a high prevalence of current major psychiatric disorders (14.4%) based on SCID-I interviews (Colizzi et al., 2014), nearly one out of three patients fulfills diagnostic criteria for a dissociative disorder (29.6%) based on DDIS interviews. The DDIS dissociative disorder rates as well as the prevalence of DES dissociative symptoms at baseline are higher than that obtained among a general population with the same clinical assessments (Ross et al., 1990; Ross, 1991). Moreover, GD patients have a high prevalence of lifetime major depressive episode (45.8%), suicide attempts (21.2%) and childhood trauma (abuse and/or neglect, 45.8%). In addition, compared to the group without a dissociative disorder, patients with a dissociative disorder report more frequent dissociative symptoms, lifetime

Table 6

Means, standard deviations and prevalence of dissociative symptoms measured with DES in Gender Dysphoria patients before (baseline) and after cross-sex hormonal treatment (HT follow-up) and sex reassignment surgery (SRS follow-up), and statistical comparisons with dependent/independent *t* test and McNemar's test.

GD patients	Baseline	HT follow-up	SRS follow-up	Statistics	
	n=118 M (S.D.)	n=118 M (S.D.)	n=22 M (S.D.)	<i>t</i> test	<i>P</i>
DES Score	13.54 (10.78)	8.70 (9.47)	8.87 (5.02)	^a 3.66; ^b 1.99; ^c 0.08	< 0.001; ^b 0.048; ^c 0.93
MtF	13.98 (10.55)	9.08 (9.52)	9.13 (5.36)	^a 3.12; ^b 1.79; ^c 0.02	^a 0.002; ^b 0.077; ^c 0.98
FtM	12.55 (11.37)	7.84 (9.41)	8.18 (4.36)	^a 1.92; ^b 0.92; ^c 0.09	^a 0.059; ^b 0.36; ^c 0.93
DES-A	4.62 (4.35)	4.04 (3.74)	4.14 (2.19)	^a 1.1; ^b 0.51; ^c 0.11	^a 0.27; ^b 0.61; ^c 0.91
MtF	4.93 (4.99)	4.29 (4.13)	4.31 (2.36)	^a 0.89; ^b 0.48; ^c 0.02	^a 0.38; ^b 0.63; ^c 0.99
FtM	3.92 (2.22)	3.47 (2.60)	3.67 (1.75)	^a 0.78; ^b 0.26; ^c 0.18	^a 0.44; ^b 0.80; ^c 0.86
DES-D	19.05 (13.03)	9.31 (10.64)	9.66 (4.49)	^a 6.29; ^b 3.33; ^c 0.15	^a < 0.001; ^b 0.001; ^c 0.88
MtF	19.49 (13.67)	9.54 (10.98)	9.88 (4.83)	^a 5.14; ^b 2.77; ^c 0.12	< 0.001; ^b 0.007; ^c 0.90
FtM	18.04 (11.58)	8.8 (9.93)	9.09 (3.76)	^a 3.63; ^b 1.86; ^c 0.07	< 0.001; ^b 0.07; ^c 0.94
DES-AI	16.63 (13.72)	12.91 (11.87)	12.46 (6.45)	^a 2.23; ^b 1.39; ^c 0.17	^a 0.027; ^b 0.17; ^c 0.86
MtF	17.35 (14.10)	13.44 (12.37)	13.16 (6.87)	^a 1.88; ^b 1.16; ^c 0.09	^a 0.06; ^b 0.25; ^c 0.93
FtM	15.00 (12.87)	11.69 (10.71)	10.60 (5.22)	^a 1.19; ^b 0.82; ^c 0.24	^a 0.24; ^b 0.42; ^c 0.81
Taxon	13.89 (9.13)	11.54 (8.19)	12.01 (5.89)	^a 2.07; ^b 0.93; ^c 0.26	^a 0.04; ^b 0.35; ^c 0.80
MtF	14.21 (9.16)	11.95 (8.52)	12.22 (6.29)	^a 1.64; ^b 0.83; ^c 0.12	^a 0.10; ^b 0.41; ^c 0.90
FtM	13.15 (9.14)	10.61 (7.43)	11.43 (5.13)	^a 1.29; ^b 0.44; ^c 0.26	^a 0.20; ^b 0.67; ^c 0.80
TMP	0.13 (0.29)	0.09 (0.26)	0.11 (0.28)	^a 1.09; ^b 0.26; ^c 0.35	^a 0.28; ^b 0.79; ^c 0.72
MtF	0.14 (0.30)	0.10 (0.27)	0.11 (0.29)	^a 0.98; ^b 0.34; ^c 0.20	^a 0.33; ^b 0.73; ^c 0.83
FtM	0.12 (0.29)	0.09 (0.25)	0.12 (0.29)	^a 0.49; ^b 0.05; ^c 0.33	^a 0.63; ^b 0.96; ^c 0.74
	N (%)	N (%)	N (%)	χ^2	χ^2
TMP > 0.50	13 (11)	8 (7)	1 (5)	^a 0.0; ^b 0.0; ^c 0.0	^a 0.36; ^b 0.70; ^c 1
MtF	10 (12)	6 (7)	1 (6)	^a 0.0; ^b 0.0; ^c 0.0	^a 0.43; ^b 0.69; ^c 1
FtM	3 (8)	2 (6)	0 (0)	^a 0.0; ^b 0.0; ^c 0.0	^a 1; ^b 1; ^c 1
TMP > 0.90	6 (5)	5 (4)	1 (5)	^a 0.0; ^b 0.0; ^c 0.0	^a 1; ^b 1; ^c 1
MtF	4 (5)	3 (4)	1 (6)	^a 0.0; ^b 0.0; ^c 0.0	^a 1; ^b 1; ^c 0.52
FtM	2 (6)	2 (6)	0 (0)	^a 0.0; ^b 0.0; ^c 0.0	^a 1; ^b 1; ^c 1

GD, gender dysphoria; MtF, Male to Female; FtM, Female to Male; HT, hormonal treatment; SRS, sex reassignment surgery; DES, Dissociative Experiences Scale; DES-A, amnesic dissociation; DES-D, depersonalization/derealization; DES-AI, absorption imaginative involvement; TMP, taxon membership probability.

^a Comparison between baseline and HT follow-up.

^b Comparison between baseline and SRS follow-up.

^c Comparison between HT follow-up and SRS follow-up.

^d Fisher's exact test.

major depressive disorder, somatization disorder, previous/current psychiatric treatment, suicide attempts, childhood trauma and body image related distress. This result seems to suggest that individuals with increased psychosocial distress are more prone to express dissociative symptoms in the context of their GD. These findings are similar to those of other studies that have documented a wide overlap among conversion disorder and dissociative disorders and among childhood trauma, dysthymic disorder, major depression, and somatization disorder (Saxe et al., 1994; Hudziak et al., 1995; Şar et al., 2004; 2007). Moreover, our results extend previous findings on body related distress in GD patients (Fisher et al., 2014), indicating that dissociative disorder comorbidity is associated to increased body uneasiness among GD patients. Finally, the prospective study indicates that sex reassignment procedures are associated with reduced dissociative symptoms.

Dissociative disorder not otherwise specified (DDNOS) is the most frequent dissociative diagnosis in the present study (16.1%), consistently with previous observations in clinical settings (Ross et al., 1991; Şar et al., 2004), non-clinical samples (Şar et al., 2007) and GD patients (Kersting et al., 2003). However, because NOS disorders in DSM-IV should be atypical and uncommon, the large number of DDNOS diagnoses in the present study points to a major weakness of the DSM-IV diagnostic criteria. The elevated prevalence of DDNOS diagnosis in this study was based primarily on the answering of those items concerning the sense of living in a different body or feeling disconnected from parts of their body and insecurity with respect to identity. In fact, DDNOS include one or

more personality states bearing the concept of having a body differing from the biological gender. In individual cases the DDNOS symptoms and GD may be similarly expressed, making the differential diagnosis more difficult. Instead, in DID the disturbance of the gender identity is expressed in a global manner, rather than just gender (Putnam, 1989). Consistently, except for one patient, no further relevant dissociative symptoms were recorded that would justify the diagnosis of a DID. Interestingly enough, considering only DDIS DID diagnosis ($n=1$, 0.8%), the prevalence of the most complex form of dissociative disorder overlaps with that found in our previous study which detected only one case of DID using the SCID-I (Colizzi et al., 2014). It should be added that calculating the baseline DES total score without the item on the gender related sense of strangeness, the prevalence of dissociative symptoms among GD individuals is definitely lower, consistent with the previous study by Kersting et al. (2003). Moreover, the DES total score without this item is only slightly increased and not significantly different compared to the general population (Ross et al., 1990). In summary, because the unease with the biological sex and the aversion to the corresponding sex-specific body forms belong by definition to the GD diagnosis (APA, 2000), the question arising is whether the dissociation is to be seen in this case not as an expression of a pathological dissociative experience but rather as a genuine feature of the GD. This interpretation is supported by several findings: firstly, the dissociative experience was less intense in GD patients after the beginning of the hormonal treatment and remained steadily lower

after sex reassignment surgery; secondly, applying the DES taxon subscale stringent cut-off, the prevalence of pathological dissociation was relatively rare and not reduced by hormone therapy, suggesting that only a small proportion of GD patients really suffers from pathological dissociation ($N=6$, 5%). Anyway, the application of additional and/or exclusion criteria could lead to a more precise ascertainment of the wish for a change of sex to differentiate whether it is a genuine expression of GD or whether there are indications of heterosexual self-states that merely resemble the GD.

As DID, the most extensively studied syndrome within the spectrum of dissociative disorders, has been conceptualized as a complex posttraumatic disorder resulting from severe childhood abuse (Putnam, 1991; Ross, 1997), the high prevalence of traumatic experiences during childhood in the GD patients (45.8%) is very interesting, especially when considering the subgroup which fulfills a DDIS dissociative disorder diagnosis (71.4%). These findings suggest that abuse and neglect during childhood could have a role in dissociative disorders as well as in the development of gender identity. Consistently, previous studies have shown high rates of childhood sexual, emotional, and physical abuse among transsexuals (Pauly, 1974; Lofhstein, 1983; Devor, 1994; Kersting et al., 2003; Gehring and Knudson, 2005), although these studies did not use control groups. Only two controlled studies have indicated an association between a less warm, more emotionally distant, controlling or rejecting parent and gender-variant outcomes (Parker and Barr, 1982; Cohen-Kettenis and Ariantelli, 1990). The effects of severe childhood traumatization on gender identity need to be further investigated.

Results of this longitudinal study underline the suffering of non-treated GD patients and the probable favorable evolution of their dissociative symptoms after sex reassignment procedures. Previous studies reported a higher prevalence of dissociative disorders/symptoms in the female gender, both in clinical (Sai et al., 2000) and non-clinical samples (Sai et al., 2007). Moreover, estrogens and androgens may plausibly exert opposite and/or prevalently negative effects on mental health. Estrogens may make individuals more prone to anxiety and depression (Asscheman et al., 1989). Androgens would promote feelings of euphoria and energy (Sai et al., 1993) or stress and hostility (Song et al., 2005). Hence, one would expect to find a higher prevalence of dissociative disorders/symptoms in FtM patients than in MtF patients at enrollment and the opposite condition or a worsening in both groups due to hormonal treatment. Nevertheless, despite the limited sample power when considering the two groups separately, our study indicates that hormonal treatment reduces dissociative symptoms both in MtF and FtM patients. Therefore, as previously reported by Kuiper and Cohen-Kettenis (1988), our results could not support the hypothesis of a direct relation between the hormone therapy itself and the patients' subjective well-being (1988). GD patients face major stress in managing their gender identity (Colizzi et al., 2013) and dissociative symptoms may be considered as a reaction to the non-satisfaction connected to their incongruent image. Instead, hormone therapy induces desired changes in GD patients' body features and shape and this could translate into a better quality of life for the patient himself. In fact, thanks to the body changes obtained, GD patients have been reported to experience a reduction of self-reported distress (Gómez-Gil et al., 2012; Colizzi et al., 2013). Therefore, the change in gender role among all the hormone treated GD patients included in this study should probably influence the self-reported reduced dissociative symptoms. However, the few patients who passed in their desired gender role without hormonal treatment did not show a lower prevalence of dissociative symptoms than all the other patients, both at baseline and follow-up, suggesting that the sex reassignment procedures may reinforce the gender affirmation with a better social recognition.

Moreover, the initiation of the hormonal treatment could have a psychological meaning which per se could be fundamental in reducing distress. Future studies should more precisely examine the hormones role in the life of GD patients. Understanding these mechanisms is extremely important if one wants to grant early enough interventions to GD patients who seem to live a very distressful condition.

It could be of interest to study dissociative symptoms according to the sexual orientation, as gynephilic sexual orientation has been suggested to be quite prevalent among MtF patients (Blanchard, 1985) and also associated with increased mental distress and a different pattern of body dysphoria (Lawrence, 2010). However, in contrast to Blanchard's initial findings, we found a low proportion of MtF patients gynephilic ($n=6$, 7%). As suggested by Nieder et al. (2011), some MtF patients could believe that they are not eligible for gender reassignment if they report being attracted to females. Anyway, we did not find any significant difference in the MtF patients' dissociative symptoms according to their sexual orientation, even if data are too limited to express conclusively.

This study has some limitations that should be taken into account. The generalization of our results may be limited by the fact that, due to the substantial overlapping between DDNOS and GD manifestations (Kersting et al., 2003), the DDIS interview could not represent an appropriate instrument to ascertain dissociative disorders in GD individuals. Moreover, even if GD patients' dissociative symptoms/disorders were compared with data representative of the general population (Ross et al., 1990; Ross, 1991), our sample and the normative data were not matched for age, which might affect the average values of dissociation (Ross et al., 1990). Finally, our care pathway provides continuous psychological support to GD patients' emotional and behavioral changes that occur during the hormonal treatment. When necessary our care pathway also provides psychopharmacological treatment in order to treat and stabilize any psychiatric comorbidity before the beginning of hormone therapy (14.4% of this sample), in accordance with WPATH standards of care (Coleman et al., 2012). Finally, our clinical experience suggests that, when receiving eligibility for hormonal treatment, GD patients experience a distress reduction because of their understood discomfort. We cannot exclude a positive effect of psychological treatment and healthcare on dissociative symptoms reduction. Therefore, psychological and medical health support could partially explain our findings. We suspect that findings would likely be different if therapies were discontinued or in patients who have no possibility of being attended by a gender unit and/or of exploring their expectations with healthcare professionals.

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What is a dissociative disorder?

(Notary Signature)

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This is Exhibit "B" to the Affidavit of Walt Heyer.

Introduction

Dissociative Identity Disorder (DID) (known in the past as Multiple Personality Disorder-MPD) and other Dissociative Disorders are now understood to be fairly common effects of severe trauma in early childhood. The most common cause is extreme, repeated physical, sexual, and/or emotional abuse.

There is a great deal of overlap of symptoms and experiences among the several Dissociative Disorders, including DID. Some people who may not qualify for a specific diagnosis of a dissociative disorder may, nevertheless, have problems with dissociation. For ease of reading, we use "Dissociative Disorders" as a general term for all the diagnoses. Individuals should seek help from qualified mental health providers to answer questions about their own particular circumstances and diagnoses.

Q: Is DID the same as MPD?

In 1994, the American Psychiatric Association's manual that classifies and describes all psychiatric diagnoses changed the name from Multiple Personality Disorder (MPD) to Dissociative Identity Disorder (DID). They felt this better reflected the current professional understanding of the disorder, based on significant recent research.

Q: What Does Trauma Have to Do with DID?

Posttraumatic Stress Disorder (PTSD) is a trauma-related mental illness affecting 8% of Americans. PTSD is closely related to Dissociative Disorders. In fact, most people with a Dissociative Disorder also have PTSD. The cost of trauma disorders is extremely high to individuals, families, and society. Recent research suggests that people with trauma disorders may attempt suicide more often than people who have major depression. Research also shows that people with trauma disorders have more serious medical illnesses, substance use, and self-harming behaviors.

Q: What Is Dissociation?

Dissociation is a disconnection between a person's thoughts, memories, feelings, actions, or sense of who he or she is. This is a normal process that everyone has experienced. Examples of mild, common dissociation include daydreaming, highway hypnosis, or "getting lost" in a book or movie, all of which involve "losing touch" with awareness of one's immediate surroundings.

Q: When Is Dissociation Helpful?

During a traumatic experience such as an accident, disaster, or crime victimization, dissociation can help a person tolerate what might otherwise be too difficult to bear. In situations like these, a person may dissociate the memory of the place, circumstances, or feelings about of the overwhelming event, mentally escaping from the fear, pain, and horror. This may make it difficult to later remember the details of the experience, as reported by many disaster and accident survivors.

Q: What is a Dissociative Disorder?

Tragically, ongoing traumatic conditions such as abuse, community violence, war, or painful medical procedures are not one-time events. For people repeatedly exposed to these experiences, especially in childhood, dissociation is an extremely effective coping "skill." However, it can become a double-edged sword. It can protect them from awareness of the pain in the short-run, but a person who dissociates often may find in the long-run his or her sense of personal history and identity is affected. For some people, dissociation is so frequent it results in serious pathology, relationship difficulties, and inability to function, especially when under stress.

Q: Who Gets Dissociative Disorders?

As many as 99% of people who develop Dissociative Disorders have documented histories of repetitive, overwhelming, and often life-threatening trauma at a sensitive developmental stage of childhood (usually before the age of 9). They may also have inherited a biological predisposition for dissociation. In our culture, the most frequent cause of Dissociative Disorders is extreme physical, emotional, and sexual abuse in childhood. Survivors of other kinds of childhood trauma (such as natural disasters, invasive medical procedures, war, kidnapping, and torture) have also reacted by developing Dissociative Disorders.

Q: Is DID a Major Mental Health Problem?

Current research shows that DID may affect 1% of the general population and as many as 5-20% of people in psychiatric hospitals. The rates are even higher among sexual-abuse survivors and addicts. These statistics put Dissociative Disorders in the same category as schizophrenia, depression, and anxiety, as one of the four major mental health problems today.

Q: Does DID Affect Both Women and Men?

Most current literature shows that Dissociative Disorders are recognized primarily among women. The latest research, however, indicates that the disorders may be equally prevalent (but less frequently diagnosed) among men. Men with Dissociative Disorders are most likely to be in treatment for other mental illnesses or drug and alcohol abuse, or they may be incarcerated.

Q: How Does a Dissociative Disorder Develop?

When faced with an overwhelming situation from which there is no physical escape, a child may learn to "go away" in his or her head. Children typically use this ability as a defense against

physical and emotional pain, or fear of that pain. By dissociating, thoughts, feelings, memories, and perceptions of the trauma can be separated off in the mind. This allows the child to function normally. This often happens when no parent or trusted adult is available to stop the hurt, soothe, and care for the child at the time of traumatic crisis. The parent/caregiver may be the source of the trauma, may neglect the child's needs, may be a co-victim, or may be unaware of the situation.

Q: How Do Dissociative Disorders Help People Survive?

Dissociative Disorders are often called a self-protection or survival technique because they allow individuals to endure "hopeless" circumstances and preserve some healthy functioning. For a child who has been repeatedly physically and sexually assaulted, however, dissociation becomes a reinforced and conditioned defense.

Q: If It's a Survival Technique, What's the Down Side?

Because it is so effective, children who are very practiced at dissociating may automatically use it whenever they feel threatened—even if the anxiety-producing situation is not extreme or abusive. Even after the traumatic circumstances are long past, the left-over pattern of defensive dissociation sometimes remains into adulthood. Habitual defensive dissociation may lead to serious dysfunction in school, work, social, and daily activities.

Q: How Do the Identities of DID Develop?

Until about the age of eight or nine years, children are developmentally primed for fantasy play, such as when they create and interact with imaginary "friends." When under extreme stress, young children may call on this special ability to develop a "character" or "role" into which they can escape when feeling threatened. One therapist described this as nothing more than a little girl imagining herself on a swing in the sunshine instead of at the hands of her abuser. Repeated dissociation can result in a series of separate entities, or mental states, which may eventually take on identities of their own. These entities can become the internal "personality states" of DID. Changing between these states of consciousness is often described as "switching."

Q: Do People Actually Have "Multiple Personalities"?

Yes, and no. One of the reasons for the decision to change the disorder's name from MPD to DID is that "multiple personalities" is a misleading term. A person with DID *feels* as if she has within her two or more entities, each with its own way of thinking and remembering about herself and her life. These entities previously were often called "personalities," even though the term did not accurately reflect the common definition of the word. Other terms often used by therapists and survivors to describe these entities are: "alternate personalities," "alters," "parts," "states of consciousness," "ego states," and "identities." It is important to keep in mind that although these alternate states may feel or appear to be very different, they are all manifestations of a single, whole person.

Q: Is it Obvious when a Person Switches Personalities?

Unlike popular portrayals of dissociation in books and movies, most people with Dissociative

Disorders work hard to hide their dissociation. They can often function so well, especially under controlled circumstances, that family members, coworkers, neighbors, and others with whom they interact daily may not know that they are chronically dissociative. People with Dissociative Disorders can hold highly responsible jobs, contributing to society in a variety of professions, the arts, and public service.

Q: What Are the Symptoms of a Dissociative Disorder?

People with Dissociative Disorders may experience any of the following: depression, mood swings, suicidal thoughts or attempts, sleep disorders (insomnia, night terrors, and sleep walking), panic attacks and phobias (flashbacks, reactions to reminders of the trauma), alcohol and drug abuse, compulsions and rituals, psychotic-like symptoms, and eating disorders. In addition, individuals can experience headaches, amnesias, time loss, trances, and “out-of-body experiences.” Some people with Dissociative Disorders have a tendency toward self-persecution, self-sabotage, and even violence (both self-inflicted and outwardly directed).

Q: Why Are Dissociative Disorders Often Misdiagnosed?

Dissociative Disorders survivors often spend years living with the wrong diagnosis. They change from therapist to therapist and from medication to medication, getting treatment for symptoms but making little or no actual progress. Research shows that people with Dissociative Disorders spend an average of seven years in the mental health system before getting the correct diagnosis. This is common because the symptoms that drive a person with a Dissociative Disorder to treatment are very similar to those of many other psychiatric diagnoses.

Q: What Are Some Common Misdiagnoses?

Common misdiagnoses include attention deficit disorder (especially among children), because of difficulties in concentration and memory; bipolar disorder, because “switching” can look like rapid-cycling mood swings; schizophrenia or psychoses, because flashbacks can cause auditory and visual hallucinations; and addictions, because alcohol and drugs are frequently used to self-medicate or to numb the psychic pain.

Q: What Other Mental Health Problems Are People with DID Likely to Have?

In addition, people with Dissociative Disorders can have other diagnosable mental health problems at the same time. Typically these include depression, posttraumatic stress disorder, panic attacks, obsessive compulsive symptoms, phobias, and self-harming behavior such as cutting, eating disorders, and high-risk sexual behaviors. Although they may get expert treatment for the more common secondary issue, if the dissociative disorder is not addressed, recovery is generally short lived.

Q: Can Dissociative Disorders Be Cured?

Yes. Dissociative Disorders respond well to individual psychotherapy, or “talk therapy,” and to a range of other treatment modalities, including medications, hypnotherapy, and art or movement therapy. In fact, compared to other severe psychiatric disorders, Dissociative Disorders may carry the best prognosis, if proper treatment is undertaken and completed. The course of treatment is long-term, intensive, and painful, as it generally involves remembering

and reclaiming the dissociated traumatic experiences. Ultimately, the “alters” or “parts” can merge into a single whole “personality,” reclaiming the awareness, identity, and history previously held by the individual parts. Individuals with Dissociative Disorders have been successfully treated by therapists of all professional backgrounds, generally with special training, working in a variety of settings.

Q: Where Can I Get More Information?

Sidran Institute. At Sidran, we help people understand, recover from, and treat dissociative and traumatic stress conditions. We are a national nonprofit organization and one of the nation’s leading providers of traumatic stress education, publications, and resources. Sidran is dedicated to helping people with traumatic stress conditions, providing education and training on treating and managing traumatic stress, and informing the public on issues related to traumatic stress.

The Sidran Help Desk, staffed by Nova Southeastern University's Trauma Psychology program, provides customized resources to survivors, clinicians, family, and friends all over the world. www.Sidran.org

Long-Term Follow-Up of Transsexual Persons Undergoing Sex Reassignment Surgery: Cohort Study in Sweden

(Notary Signature)

This is Exhibit "C" to the Affidavit of Walt Meyer.

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Abstract

Context: The treatment for transsexualism is sex reassignment, including hormonal treatment and surgery aimed at making the person's body as congruent with the opposite sex as possible. There is a dearth of long term, follow-up studies after sex reassignment.

Objective: To estimate mortality, morbidity, and criminal rate after surgical sex reassignment of transsexual persons.

Design: A population-based matched cohort study.

Setting: Sweden, 1973–2003.

Participants: All 324 sex-reassigned persons (191 male-to-females, 133 female-to-males) in Sweden, 1973–2003. Random population controls (10:1) were matched by birth year and birth sex or reassigned (final) sex, respectively.

Main Outcome Measures: Hazard ratios (HR) with 95% confidence intervals (CI) for mortality and psychiatric morbidity were obtained with Cox regression models, which were adjusted for immigrant status and psychiatric morbidity prior to sex reassignment (adjusted HR [aHR]).

Results: The overall mortality for sex-reassigned persons was higher during follow-up (aHR 2.8; 95% CI 1.8–4.3) than for controls of the same birth sex, particularly death from suicide (aHR 19.1; 95% CI 5.8–62.9). Sex-reassigned persons also had an increased risk for suicide attempts (aHR 4.9; 95% CI 2.9–8.5) and psychiatric inpatient care (aHR 2.8; 95% CI 2.0–3.9). Comparisons with controls matched on reassigned sex yielded similar results. Female-to-males, but not male-to-females, had a higher risk for criminal convictions than their respective birth sex controls.

Conclusions: Persons with transsexualism, after sex reassignment, have considerably higher risks for mortality, suicidal behaviour, and psychiatric morbidity than the general population. Our findings suggest that sex reassignment, although alleviating gender dysphoria, may not suffice as treatment for transsexualism, and should inspire improved psychiatric and somatic care after sex reassignment for this patient group.

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Introduction

Transsexualism (ICD-10), [1] or gender identity disorder (DSM-IV), [2] is a condition in which a person's gender identity - the sense of being a man or a woman - contradicts his or her bodily sex characteristics. The individual experiences gender dysphoria and desires to live and be accepted as a member of the opposite sex.

The treatment for transsexualism includes removal of body hair, vocal training, and cross-sex hormonal treatment aimed at making the person's body as congruent with the opposite sex as possible to alleviate the gender dysphoria. Sex reassignment also involves the surgical removal of body parts to make external sexual characteristics resemble those of the opposite sex, so called sex reassignment/confirmation surgery (SRS). This is a unique

intervention not only in psychiatry but in all of medicine. The present form of sex reassignment has been practised for more than half a century and is the internationally recognized treatment to ease gender dysphoria in transsexual persons.[3,4]

Despite the long history of this treatment, however, outcome data regarding mortality and psychiatric morbidity are scant. With respect to suicide and deaths from other causes after sex reassignment, an early Swedish study followed 24 transsexual persons for an average of six years and reported one suicide.[5] A subsequent Swedish study recorded three suicides after sex reassignment surgery of 175 patients.[6] A recent Swedish follow-up study reported no suicides in 60 transsexual patients, but one death due to complications after the sex reassignment surgery.[7] A Danish study reported death by suicide in 3 out of 29 operated male-to-female transsexual persons followed for an average of six years.[8] By contrast, a Belgian study of 107 transsexual persons followed for 4–6 years found no suicides or deaths from other causes.[9] A large Dutch single-centre study (N=1,109), focusing on adverse events following hormonal treatment, compared the outcome after cross-sex hormone treatment with national Dutch standardized mortality and morbidity rates and found no increased mortality, with the exception of death from suicide and AIDS in male-to-females 25–39 years of age.[10] The same research group concluded in a recent report that treatment with cross-sex hormones seems acceptably safe, but with the reservation that solid clinical data are missing.[11] A limitation with respect to the Dutch cohort is that the proportion of patients treated with cross-sex hormones who also had surgical sex-reassignment is not accounted for.[10]

Data is inconsistent with respect to psychiatric morbidity post sex reassignment. Although many studies have reported psychiatric and psychological improvement after hormonal and/or surgical treatment,[7,12,13,14,15,16] other have reported on regrets,[17] psychiatric morbidity, and suicide attempts after SRS.[9,18] A recent systematic review and meta-analysis concluded that approximately 80% reported subjective improvement in terms of gender dysphoria, quality of life, and psychological symptoms, but also that there are studies reporting high psychiatric morbidity and suicide rates after sex reassignment.[19] The authors concluded though that the evidence base for sex reassignment “is of very low quality due to the serious methodological limitations of included studies.”

The methodological shortcomings have many reasons. First, the nature of sex reassignment precludes double blind randomized controlled studies of the result. Second, transsexualism is rare [20] and many follow-ups are hampered by small numbers of subjects.[5,8,21,22,23,24,25,26,27,28] Third, many sex reassigned persons decline to participate in follow-up studies, or relocate after surgery, resulting in high drop-out rates and consequent selection bias.[6,9,12,21,24,28,29,30] Fourth, several follow-up studies are hampered by limited follow-up periods.[7,9,21,22,26,30] Taken together, these limitations preclude solid and generalisable conclusions. A long-term population-based controlled study is one way to address these methodological shortcomings.

Here, we assessed mortality, psychiatric morbidity, and psychosocial integration expressed in criminal behaviour after sex reassignment in transsexual persons, in a total population cohort study with long-term follow-up information obtained from Swedish registers. The cohort was compared with randomly selected population controls matched for age and gender. We adjusted for premorbid differences regarding psychiatric morbidity and immigrant status. This study design sheds new light on transsexual persons' health after sex reassignment. It does not, however, address whether sex reassignment is an effective treatment or not.

Methods

National registers

The study population was identified by the linkage of several Swedish national registers, which contained a total of 13.8 million unique individuals. The Hospital Discharge Register (HDR, held by the National Board of Health and Welfare) contains discharge diagnoses, up to seven contributory diagnoses, external causes of morbidity or mortality, surgical procedure codes, and discharge date. Discharge diagnoses are coded according to the 8th (1969–1986), 9th (1987–1996), and 10th editions (1997–) of the International Classification of Diseases (ICD). The register covers virtually all psychiatric inpatient episodes in Sweden since 1973. Discharges that occurred up to 31 December 2003 were included. Surgical procedure codes could not be used for this study due to the lack of a specific code for sex reassignment surgery. The Total Population Register (TPR, held by Statistics Sweden) is comprised of data about the entire Swedish population. Through linkage with the Total Population Register it was possible to identify birth date and birth gender for all study subjects. The register is updated every year and gender information was available up to 2004/2005. The Medical Birth Register (MBR) was established in 1973 and contains birth data, including gender of the child at birth. National censuses based on mandatory self-report questionnaires completed by all adult citizens in 1960, 1970, 1980, and 1990 provided information on individuals, households, and dwellings, including gender, living area, and highest educational level. Complete migration data, including country of birth for immigrants for 1969–2003, were obtained from the TPR. In addition to educational information from the censuses, we also obtained highest educational level data for 1990 and 2000 from the Register of Education. The Cause of Death Register (CDR, Statistics Sweden) records all deaths in Sweden since 1952 and provided information on date of death and causes of death. Death events occurring up to 31 December 2003 are included in the study. The Crime Register (held by the National Council of Crime Prevention) provided information regarding crime type and date on all criminal convictions in Sweden during the period 1973–2004. Attempted and aggravated forms of all offences were also included. All crimes in Sweden are registered regardless of insanity at the time of perpetration; for example, for individuals who suffered from psychosis at the time of the offence. Moreover, conviction data include individuals who received custodial or non-custodial sentences and cases where the prosecutor decided to caution or fine without court proceedings. Finally, Sweden does not differ considerably from other members of the European Union regarding rates of violent crime and their resolution.[31]

Study population, identification of sex-reassigned persons (exposure assessment)

The study was designed as a population-based matched cohort study. We used the individual national registration number, assigned to all Swedish residents, including immigrants on arrival, as the primary key through all linkages. The registration number consists of 10 digits; the first six provide information of the birth date, whereas the ninth digit indicates the gender. In Sweden, a person presenting with gender dysphoria is referred to one of six specialised gender teams that evaluate and treat patients principally according to international consensus guidelines: Standards of Care.[3] With a medical certificate, the person applies to the National Board of Health and Welfare to receive permission for sex reassignment surgery and a change of legal sex status. A new national registration number signifying the new gender is assigned after sex reassignment surgery. The National

Board of Health and Welfare maintains a link between old and new national registration numbers, making it possible to follow individuals undergoing sex reassignment across registers and over time. Hence, sex reassignment surgery in Sweden requires (i) a transsexualism diagnosis and (ii) permission from the National Board of Health and Welfare.

A person was defined as exposed to sex reassignment surgery if two criteria were met: (i) at least one inpatient diagnosis of gender identity disorder diagnosis without concomitant psychiatric diagnoses in the Hospital Discharge Register, and (ii) at least one discrepancy between gender variables in the Medical Birth Register (from 1973 and onwards) or the National Censuses from 1960, 1970, 1980, or 1990 and the latest gender designation in the Total Population Register. The first criterion was employed to capture the hospitalization for sex reassignment surgery that serves to secure the diagnosis and provide a time point for sex reassignment surgery; the plastic surgeons namely record the reason for sex reassignment surgery, i.e., transsexualism, but not any co-occurring psychiatric morbidity. The second criterion was used to ensure that the person went through all steps in sex-reassignment and also changed sex legally.

The date of sex reassignment (start of follow-up) was defined as the first occurrence of a gender identity disorder diagnosis, without any other concomitant psychiatric disorder, in the Hospital Discharge Register after the patient changed sex status (any discordance in sex designation across the Censuses, Medical Birth, and Total Population registers). If this information was missing, we used instead the closest date in the Hospital Discharge Register on which the patient was diagnosed with gender identity disorder without concomitant psychiatric disorder prior to change in sex status. The reason for prioritizing the use of a gender identity disorder diagnosis *after* changed sex status over *before* was to avoid overestimating person-years at risk of sex-reassigned person.

Using these criteria, a total of 804 patients with gender identity disorder were identified, whereof 324 displayed a shift in the gender variable during the period 1973–2003. The 480 persons that did not shift gender variable comprise persons who either did not apply, or were not approved, for sex reassignment surgery. Moreover, the ICD 9 code 302 is a non specific code for sexual disorders. Hence, this group might also comprise persons that were hospitalized for sexual disorders other than transsexualism. Therefore, they were omitted from further analyses. Of the remaining 324 persons, 288 were identified with the gender identity diagnosis *after* and 36 *before* change of sex status. Out of the 288 persons identified *after* changed sex status, 185 could also be identified *before* change in sex status. The median time lag between the hospitalization *before* and *after* sex change for these 185 persons was 0.96 years (mean 2.2 years, SD 3.3).

Gender identity disorder was coded according to ICD-8: 302.3 (transsexualism) and 302.9 (sexual deviation NOS); ICD-9: 302 (overall code for sexual deviations and disorders, more specific codes were not available in ICD-9); and ICD-10: F64.0 (transsexualism), F64.1 (dual-role transvestism), F64.8 (other gender identity disorder), and F64.9 (gender identity disorder NOS). Other psychiatric disorders were coded as ICD-8: 290-301 and 303-315; ICD-9: 290-301 and 303-319; and ICD-10: F00-F63 as well as F65-F99.

Identification of population-based controls (unexposed group)

For each exposed person ($N = 324$), we randomly selected 10 unexposed controls. A person was defined as unexposed if there were no discrepancies in sex designation across the Censuses, Medical Birth, and Total Population registers *and* no gender

identity disorder diagnosis according to the Hospital Discharge Register. Control persons were matched by sex and birth year and had to be alive and residing in Sweden at the estimated sex reassignment date of the case person. To study possible gender-specific effects on outcomes of interest, we used two different control groups: one with the same sex as the case individual at birth (birth sex matching) and the other with the sex that the case individual had been reassigned to (final sex matching).

Outcome measures

We studied mortality, psychiatric morbidity, accidents, and crime following sex reassignment. More specifically, we investigated: (1) all-cause mortality, (2) death by definite/uncertain suicide, (3) death by cardiovascular disease, and (4) death by tumour. Morbidity included (5) any psychiatric disorder (gender identity disorders excluded), (6) alcohol/drug misuse and dependence, (7) definite/uncertain suicide attempt, and (8) accidents. Finally, we addressed court convictions for (9) any criminal offence and (10) any violent offence. Each individual could contribute with several outcomes, but only one event per outcome. Causes of death (Cause of Death Registry from 1952 and onwards) were defined according to ICD as suicide (ICD-8 and ICD-9 codes E950-E959 and E980-E989, ICD-10 codes X60-X84 and Y10-Y34); cardiovascular disease (ICD-8 codes 390-458, ICD-9 codes 390-459, ICD-10 codes I00-I99); neoplasms (ICD-8 and ICD-9 codes 140-239, ICD-10 codes C00-D48), any psychiatric disorder (gender identity disorders excluded); (ICD-8 codes 290-301 and 303-315, ICD-9 codes 290-301 and 303-319, ICD-10 codes F00-F63 and F65-F99); alcohol/drug abuse and dependence (ICD-8 codes 303-304, ICD-9 codes 303-305 (tobacco use disorder excluded), ICD-10 codes F10-F16 and F18-F19 (x5 excluded)); and accidents (ICD-8 and ICD-9 codes E800-E929, ICD-10 codes V01-X59).

Any criminal conviction during follow-up was counted; specifically, violent crime was defined as homicide and attempted homicide, aggravated assault and assault, robbery, threatening behaviour, harassment, arson, or any sexual offense.[32]

Covariates

Severe psychiatric morbidity was defined as inpatient care according to ICD-8 codes 291, 295-301, 303-304, and 307; ICD-9 codes 291-292, 295-298, 300-301, 303-305 (tobacco use disorder excluded), 307.1, 307.5, 308-309, and 311; ICD-10 codes F10-F16, F18-F25, F28-F45, F48, F50, and F60-F62. Immigrant status, defined as individuals born abroad, was obtained from the Total Population Register. All outcome/covariate variables were dichotomized (i.e., affected or unaffected) and without missing values.

Statistical analyses

Each individual contributed person-time from study entry (for exposed: date of sex reassignment; for unexposed: date of sex reassignment of matched case) until date of outcome event, death, emigration, or end of study period (31 December 2003), whichever came first. The association between exposure (sex reassignment) and outcome (mortality, morbidity, crime) was measured by hazard ratios (HR) with 95% CIs, taking follow-up time into account. HRs were estimated from Cox proportional hazard regression models, stratified on matched sets (1:10) to account for the matching by sex, age, and calendar time (birth year). We present crude HRs (though adjusted for sex and age through matching) and confounder-adjusted HRs [aHRs] for all outcomes. The two potential confounders, immigrant status (yes/no) and history of severe psychiatric morbidity (yes/no) prior to sex

reassignment, were chosen based on previous research [18,33] and different prevalence across cases and controls (Table 1).

Gender-separated analyses were performed and a Kaplan-Meier survival plot graphically illustrates the survival of the sex-reassigned cohort and matched controls (all-cause mortality) over time. The significance level was set at 0.05 (all tests were two-sided). All outcome/covariate variables were without missing values, since they are generated from register data, which are either present (affected) or missing (unaffected). The data were analysed using SAS version 9.1 (SAS Institute Inc., Cary, NC, USA).

Ethics

The data linking of national registers required for this study was approved by the IRB at Karolinska Institutet, Stockholm. All data were analyzed anonymously; therefore, informed consent for each individual was neither necessary nor possible.

Results

We identified 324 transsexual persons (exposed cohort) who underwent sex reassignment surgery and were assigned a new legal sex between 1973 and 2003. These constituted the sex-reassigned (exposed) group. Fifty-nine percent ($N = 191$) of sex-reassigned persons were male-to-females and 41% ($N = 133$) female-to-males, yielding a sex ratio of 1.4:1 (Table 1).

The average follow-up time for all-cause mortality was 11.4 (median 9.1) years. The average follow-up time for the risk of being hospitalized for any psychiatric disorder was 10.4 (median 8.1).

Characteristics prior to sex reassignment

Table 1 displays demographic characteristics of sex-reassigned and control persons prior to study entry (sex reassignment). There were no substantial differences between female-to-males and male-to-females regarding measured baseline characteristics. Immigrant status was twice as common among transsexual individuals compared to controls, living in an urban area somewhat more common, and higher education about equally prevalent. Transsexual individuals had been hospitalized for psychiatric morbidity other than gender identity disorder prior to sex reassignment about four times more often than controls. To adjust for these baseline discrepancies, hazard ratios adjusted for immigrant status and psychiatric morbidity prior to baseline are presented for all outcomes [aHRs].

Mortality

Table 2 describes the risks for selected outcomes during follow-up among sex-reassigned persons, compared to same-age controls of the same birth sex. Sex-reassigned transsexual persons of both genders had approximately a three times higher risk of all-cause mortality than controls, also after adjustment for covariates. Table 2

Table 1. Baseline characteristics among sex-reassigned subjects in Sweden ($N = 324$) and population controls matched for birth year and sex.

Characteristic at baseline	Sex-reassigned subjects ($N = 324$)	Birth-sex matched controls ($N = 3,240$)	Final-sex matched controls ($N = 3,240$)
Gender			
Female at birth, male after sex change	133 (41%)	1,330 (41%)	1,330 (41%)
Male at birth, female after sex change	191 (59%)	1,910 (59%)	1,910 (59%)
Average age at study entry [years] (SD, min-max)			
Female at birth, male after sex change	33.3 (8.7, 20–62)	33.3 (8.7, 20–62)	33.3 (8.7, 20–62)
Male at birth, female after sex change	36.3 (10.1, 21–69)	36.3 (10.1, 21–69)	36.3 (10.1, 21–69)
Both genders	35.1 (9.7, 20–69)	35.1 (9.7, 20–69)	35.1 (9.7, 20–69)
Immigrant status			
Female at birth, male after sex change	28 (21%)	118 (9%)	100 (8%)
Male at birth, female after sex change	42 (22%)	176 (9%)	164 (9%)
Both genders	70 (22%)	294 (9%)	264 (8%)
Less than 10 years of schooling prior to entry vs. 10 years or more			
Females at birth, males after sex change	49 (44%); 62 (56%)	414 (37%); 714 (63%)	407 (36%); 713 (64%)
Males at birth, females after sex change	61 (41%); 89 (59%)	665 (40%); 1,011 (60%)	595 (35%); 1,091 (65%)
All individuals with data	110 (42%); 151 (58%)	1,079 (38%); 1,725 (62%)	1,002 (36%); 1,804 (64%)
Psychiatric morbidity* prior to study entry			
Female at birth, male after sex change	22 (17%)	47 (4%)	42 (3%)
Male at birth, female after sex change	36 (19%)	76 (4%)	72 (4%)
Both genders	58 (18%)	123 (4%)	114 (4%)
Rural [vs. urban] living area prior to entry			
Female at birth, male after sex change	13 (10%)	180 (14%)	195 (15%)
Male at birth, female after sex change	20 (10%)	319 (17%)	272 (14%)
Both genders	33 (10%)	499 (15%)	467 (14%)

Note:

*Hospitalizations for gender identity disorder were not included.

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Table 2. Risk of various outcomes among sex-reassigned subjects in Sweden (N = 324) compared to population controls matched for birth year and birth sex.

	Number of events cases/controls 1973–2003	Outcome incidence rate per 1000 person-years 1973–2003 (95% CI)		Crude hazard ratio (95% CI) 1973–2003	Adjusted* hazard ratio (95% CI) 1973–2003	Adjusted* hazard ratio (95% CI) 1973–1988	Adjusted* hazard ratio (95% CI) 1989–2003
		Cases	Controls				
Any death	27/99	7.3 (5.0–10.6)	2.5 (2.0–3.0)	2.9 (1.9–4.5)	2.8 (1.8–4.3)	3.1 (1.9–5.0)	1.9 (0.7–5.0)
Death by suicide	10/5	2.7 (1.5–5.0)	0.1 (0.1–0.3)	19.1 (6.5–55.9)	19.1 (5.8–62.9)	N/A	N/A
Death by cardiovascular disease	9/42	2.4 (1.3–4.7)	1.1 (0.8–1.4)	2.6 (1.2–5.4)	2.5 (1.2–5.3)	N/A	N/A
Death by neoplasm	8/38	2.2 (1.1–4.3)	1.0 (0.7–1.3)	2.1 (1.0–4.6)	2.1 (1.0–4.6)	N/A	N/A
Any psychiatric hospitalisation‡	64/173	19.0 (14.8–24.2)	4.2 (3.6–4.9)	4.2 (3.1–5.6)	2.8 (2.0–3.9)	3.0 (1.9–4.6)	2.5 (1.4–4.2)
Substance misuse	22/78	5.9 (3.9–8.9)	1.8 (1.5–2.3)	3.0 (1.9–4.9)	1.7 (1.0–3.1)	N/A	N/A
Suicide attempt	29/44	7.9 (5.5–11.4)	1.0 (0.8–1.4)	7.6 (4.7–12.4)	4.9 (2.9–8.5)	7.9 (4.1–15.3)	2.0 (0.7–5.3)
Any accident	32/233	9.0 (6.3–12.7)	5.7 (5.0–6.5)	1.6 (1.1–2.3)	1.4 (1.0–2.1)	1.6 (1.0–2.5)	1.1 (0.5–2.2)
Any crime	60/350	18.5 (14.3–23.8)	9.0 (8.1–10.0)	1.9 (1.4–2.5)	1.3 (1.0–1.8)	1.6 (1.1–2.4)	0.9 (0.6–1.5)
Violent crime	14/61	3.6 (2.1–6.1)	1.4 (1.1–1.8)	2.7 (1.5–4.9)	1.5 (0.8–3.0)	N/A	N/A

Notes:

*Adjusted for psychiatric morbidity prior to baseline and immigrant status.

‡Hospitalisations for gender identity disorder were excluded.

N/A Not applicable due to sparse data.

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separately lists the outcomes depending on when sex reassignment was performed: during the period 1973–1988 or 1989–2003. Even though the overall mortality was increased across both time periods, it did not reach statistical significance for the period 1989–2003. The Kaplan-Meier curve (Figure 1) suggests that survival of transsexual persons started to diverge from that of matched controls after about 10 years of follow-up. The cause-specific mortality from

suicide was much higher in sex-reassigned persons, compared to matched controls. Mortality due to cardiovascular disease was moderately increased among the sex-reassigned, whereas the numerically increased risk for malignancies was borderline statistically significant. The malignancies were lung cancer (N = 3), tongue cancer (N = 1), pharyngeal cancer (N = 1), pancreas cancer (N = 1), liver cancer (N = 1), and unknown origin (N = 1).

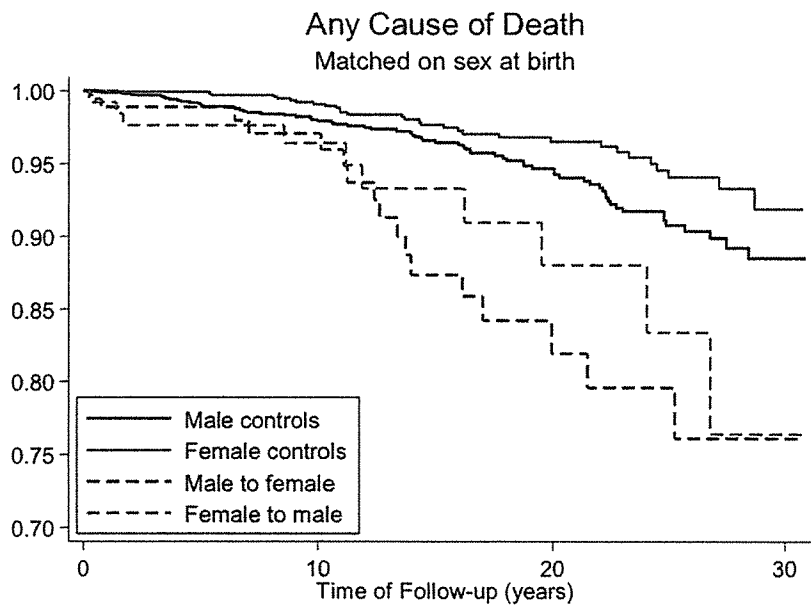


Figure 1. Death from any cause as a function of time after sex reassignment among 324 transsexual persons in Sweden (male-to-female: N = 191, female-to-male: N = 133), and population controls matched on birth year.

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Psychiatric morbidity, substance misuse, and accidents

Sex-reassigned persons had a higher risk of inpatient care for a psychiatric disorder other than gender identity disorder than controls matched on birth year and birth sex (Table 2). This held after adjustment for prior psychiatric morbidity, and was true regardless of whether sex reassignment occurred before or after 1989. In line with the increased mortality from suicide, sex-reassigned individuals were also at a higher risk for suicide attempts, though this was not statistically significant for the time period 1989–2003. The risks of being hospitalised for substance misuse or accidents were not significantly increased after adjusting for covariates (Table 2).

Crime rate

Transsexual individuals were at increased risk of being convicted for any crime or violent crime after sex reassignment (Table 2); this was, however, only significant in the group who underwent sex reassignment before 1989.

Gender differences

Comparisons of female-to-males and male-to-females, although hampered by low statistical power and associated wide confidence intervals, suggested mostly similar risks for adverse outcomes (Tables S1 and S2). However, violence against self (suicidal behaviour) and others ([violent] crime) constituted important exceptions. First, male-to-females had significantly increased risks for suicide attempts compared to both female (aHR 9.3; 95% CI 4.4–19.9) and male (aHR 10.4; 95% CI 4.9–22.1) controls. By contrast, female-to-males had significantly increased risk of suicide attempts only compared to male controls (aHR 6.8; 95% CI 2.1–21.6) but not compared to female controls (aHR 1.9; 95% CI 0.7–4.8). This suggests that male-to-females are at higher risk for suicide attempts after sex reassignment, whereas female-to-males maintain a female pattern of suicide attempts after sex reassignment (Tables S1 and S2).

Second, regarding any crime, male-to-females had a significantly increased risk for crime compared to female controls (aHR 6.6; 95% CI 4.1–10.8) but not compared to males (aHR 0.8; 95% CI 0.5–1.2). This indicates that they retained a male pattern regarding criminality. The same was true regarding violent crime. By contrast, female-to-males had higher crime rates than female controls (aHR 4.1; 95% CI 2.5–6.9) but did not differ from male controls. This indicates a shift to a male pattern regarding criminality and that sex reassignment is coupled to increased crime rate in female-to-males. The same was true regarding violent crime.

Discussion

Principal findings and comparison with previous research

We report on the first nationwide population-based, long-term follow-up of sex-reassigned transsexual persons. We compared our cohort with randomly selected population controls matched for age and gender. The most striking result was the high mortality rate in both male-to-females and female-to-males, compared to the general population. This contrasts with previous reports (with one exception[8]) that did not find an increased mortality rate after sex reassignment, or only noted an increased risk in certain subgroups.[7,9,10,11] Previous clinical studies might have been biased since people who regard their sex reassignment as a failure are more likely to be lost to follow-up. Likewise, it is cumbersome to track deceased persons in clinical follow-up studies. Hence, population-based register studies like the present are needed to improve representativity.[19,34]

The poorer outcome in the present study might also be explained by longer follow-up period (median >10 years) compared to previous studies. In support of this notion, the survival curve (Figure 1) suggests increased mortality from ten years after sex reassignment and onwards. In accordance, the overall mortality rate was only significantly increased for the group operated before 1989. However, the latter might also be explained by improved health care for transsexual persons during 1990s, along with altered societal attitudes towards persons with different gender expressions.[35]

Mortality due to cardiovascular disease was significantly increased among sex reassigned individuals, albeit these results should be interpreted with caution due to the low number of events. This contrasts, however, a Dutch follow-up study that reported no increased risk for cardiovascular events.[10,11] A recent meta-analysis concluded, however, that data on cardiovascular outcome after cross-sex steroid use are sparse, inconclusive, and of very low quality.[34]

With respect to neoplasms, prolonged hormonal treatment might increase the risk for malignancies,[36] but no previous study has tested this possibility. Our data suggested that the cause-specific risk of death from neoplasms was increased about twice (borderline statistical significance). These malignancies (see Results), however, are unlikely to be related to cross-hormonal treatment.

There might be other explanations to increased cardiovascular death and malignancies. Smoking was in one study reported in almost 50% by the male-to-females and almost 20% by female-to-males.[9] It is also possible that transsexual persons avoid the health care system due to a presumed risk of being discriminated.

Mortality from suicide was strikingly high among sex-reassigned persons, also after adjustment for prior psychiatric morbidity. In line with this, sex-reassigned persons were at increased risk for suicide attempts. Previous reports [6,8,10,11] suggest that transsexualism is a strong risk factor for suicide, also after sex reassignment, and our long-term findings support the need for continued psychiatric follow-up for persons at risk to prevent this.

Inpatient care for psychiatric disorders was significantly more common among sex-reassigned persons than among matched controls, both before and after sex reassignment. It is generally accepted that transsexuals have more psychiatric ill-health than the general population prior to the sex reassignment.[18,21,22,33] It should therefore come as no surprise that studies have found high rates of depression,[9] and low quality of life[16,25] also after sex reassignment. Notably, however, in this study the increased risk for psychiatric hospitalisation persisted even after adjusting for psychiatric hospitalisation prior to sex reassignment. This suggests that even though sex reassignment alleviates gender dysphoria, there is a need to identify and treat co-occurring psychiatric morbidity in transsexual persons not only before but also after sex reassignment.

Criminal activity, particularly violent crime, is much more common among men than women in the general population. A previous study of all applications for sex reassignment in Sweden up to 1992 found that 9.7% of male-to-female and 6.1% of female-to-male applicants had been prosecuted for a crime.[33] Crime after sex reassignment, however, has not previously been studied. In this study, male-to-female individuals had a higher risk for criminal convictions compared to female controls but not compared to male controls. This suggests that the sex reassignment procedure neither increased nor decreased the risk for criminal offending in male-to-females. By contrast, female-to-males were at a higher risk for criminal convictions compared to female controls and did not differ from male controls, which suggests increased crime proneness in female-to-males after sex reassignment.

Strengths and limitations of the study

Strengths of this study include nationwide representativity over more than 30 years, extensive follow-up time, and minimal loss to follow-up. Many previous studies suffer from low outcome ascertainment,[6,9,21,29] whereas this study has captured almost the entire population of sex-reassigned transsexual individuals in Sweden from 1973–2003. Moreover, previous outcome studies have mixed pre-operative and post-operative transsexual persons,[22,37] while we included only post-operative transsexual persons that also legally changed sex. Finally, whereas previous studies either lack a control group or use standardised mortality rates or standardised incidence rates as comparisons,[9,10,11] we selected random population controls matched by birth year, and either birth or final sex.

Given the nature of sex reassignment, a double blind randomized controlled study of the result after sex reassignment is not feasible. We therefore have to rely on other study designs. For the purpose of evaluating whether sex reassignment is an effective treatment for gender dysphoria, it is reasonable to compare reported gender dysphoria pre and post treatment. Such studies have been conducted either prospectively[7,12] or retrospectively,[5,6,9,22,25,26,29,38] and suggest that sex reassignment of transsexual persons improves quality of life and gender dysphoria. The limitation is of course that the treatment has not been assigned randomly and has not been carried out blindly.

For the purpose of evaluating the safety of sex reassignment in terms of morbidity and mortality, however, it is reasonable to compare sex reassigned persons with matched population controls. The caveat with this design is that transsexual persons before sex reassignment might differ from healthy controls (although this bias can be statistically corrected for by adjusting for baseline differences). It is therefore important to note that the current study is only informative with respect to transsexual persons health after sex reassignment; no inferences can be drawn as to the effectiveness of sex reassignment as a treatment for transsexualism. In other words, the results should not be interpreted such as sex reassignment *per se* increases morbidity and mortality. Things might have been even worse without sex reassignment. As an analogy, similar studies have found increased somatic morbidity, suicide rate, and overall mortality for patients treated for bipolar disorder and schizophrenia.[39,40] This is important information, but it does not follow that mood stabilizing treatment or antipsychotic treatment is the culprit.

Other facets to consider are first that this study reflects the outcome of psychiatric and somatic treatment for transsexualism provided in Sweden during the 1970s and 1980s. Since then, treatment has evolved with improved sex reassignment surgery, refined hormonal treatment,[11,41] and more attention to psychosocial care that might have improved the outcome. Second, transsexualism is a rare condition and Sweden is a small country (9.2 million inhabitants in 2008). Hence, despite being based on a

comparatively large national cohort and long-term follow-up, the statistical power was limited. Third, regarding psychiatric morbidity after sex reassignment, we assessed inpatient psychiatric care. Since most psychiatric care is provided in outpatient settings (for which no reliable data were available), underestimation of the *absolute* prevalences was inevitable. However, there is no reason to believe that this would change the *relative risks* for psychiatric morbidity unless sex-reassigned transsexual individuals were more likely than matched controls to be admitted to hospital for any given psychiatric condition.

Finally, to estimate start of follow-up, we prioritized using the date of a gender identity disorder diagnosis *after* changed sex status over *before* changed sex status, in order to avoid overestimating person-years at risk after sex-reassignment. This means that adverse outcomes might have been underestimated. However, given that the median time lag between the hospitalization before and after change of sex status was less than a year (see Methods), this maneuver is unlikely to have influenced the results significantly. Moreover, all deaths will be recorded regardless of this exercise and mortality hence correctly estimated.

Conclusion

This study found substantially higher rates of overall mortality, death from cardiovascular disease and suicide, suicide attempts, and psychiatric hospitalisations in sex-reassigned transsexual individuals compared to a healthy control population. This highlights that post surgical transsexuals are a risk group that need long-term psychiatric and somatic follow-up. Even though surgery and hormonal therapy alleviates gender dysphoria, it is apparently not sufficient to remedy the high rates of morbidity and mortality found among transsexual persons. Improved care for the transsexual group after the sex reassignment should therefore be considered.

Supporting Information

Table S1 Risk of various outcomes in sex-reassigned persons in Sweden compared to population controls matched for birth year and birth sex.
(DOCX)

Table S2 Risk of various outcomes in sex-reassigned persons in Sweden compared to controls matched for birth year and final sex.
(DOCX)

Author Contributions

Conceived and designed the experiments: CD PL AJ NL ML. Performed the experiments: MB AJ. Analyzed the data: CD PL MB AJ NL ML. Contributed reagents/materials/analysis tools: PL NL AJ. Wrote the paper: CD PL MB AJ NL ML.

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Psychiatric Comorbidity of Gender Identity Disorders: A Survey Among Dutch Psychiatrists

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Objective: In the Netherlands, it is considered good medical practice to offer patients with gender identity disorder the option to undergo hormonal and surgical sex reassignment therapy. A liberalization of treatment guidelines now allows for such treatment to be started at puberty or prepuberty. The question arises as to what extent gender identity disorder can be reliably distinguished from a cross-gender identification that is secondary to other psychiatric disorders.

Method: The authors sent survey questionnaires to 382 board-certified Dutch psychiatrists regarding their experiences with diagnosing and treating patients with gender identity disorder.

Results: One hundred eighty-six psychiatrists responded to the survey. These respondents reported on 584 patients with cross-gender identification. In 225 patients

(39%), gender identity disorder was regarded as the primary diagnosis. For the remaining 359 patients (61%), cross-gender identification was comorbid with other psychiatric disorders. In 270 (75%) of these 359 patients, cross-gender identification was interpreted as an epiphenomenon of other psychiatric illnesses, notably personality, mood, dissociative, and psychotic disorders.

Conclusions: These data suggest that there is little consensus, at least among Dutch psychiatrists, about diagnostic features of gender identity disorder or about the minimum age at which sex reassignment therapy is a safe option. Therapy options proposed to patients with gender identity disorder appear to depend on personal preferences of psychiatrists. These results underline the need for more specific diagnostic rules in this area.

This is Exhibit "D" to the (Am J Psychiatry 2003; 160:1332-1336)
Affidavit of Walt Heyer.

According to DSM-IV, gender identity disorder is characterized by a strong and persistent cross-gender identification and persistent discomfort with one's own sex. With an estimated worldwide lifetime prevalence of 0.001%–0.002%, gender identity disorder is rare (1). However, the prevalence of gender identity disorder appears to be higher in the Netherlands. Here, male-to-female gender identity disorder is found in about 1 per 12,000 inhabitants and female-to-male gender identity disorder is seen in 1 per 30,000 (2).

About two-thirds of the patients referred to Dutch gender clinics are given the opportunity to undergo hormonal therapy; many are also offered surgical sex reassignment therapy. In line with the liberal tradition of the Netherlands, there appears to be no serious opposition against this invasive treatment for patients with gender identity disorder. Dutch research suggests that patients with gender identity disorder generally benefit from sex reassignment therapy (3), although studies from other countries (4–6) report somewhat higher percentages of patients regretting their sex reassignment therapy (i.e., about 10%–20%).

Recently, treatment guidelines for gender identity disorder have been further liberalized in the Netherlands; the new guidelines allow patients in puberty or prepuberty to

apply for sex reassignment therapy. During the first phase of this therapy, patients receive hormones blocking their normal sexual maturation (7). At age 16, actual sex reassignment starts by administration of hormones of the desired sex (i.e., estrogens for male-to-female and androgens for female-to-male patients). Each year, about 10 youngsters receive this treatment regimen (7). However, a potential problem with lowering the age for sex reassignment procedures is that it may increase the risk of false positive diagnoses.

A case in point is schizophrenia, a condition that cannot be diagnosed with reasonable certainty until early adulthood. DSM-IV states that "delusions of belonging to the other sex" (p. 537) are rarely seen in schizophrenia, but this claim is difficult to reconcile with studies showing that about 25% of patients with schizophrenia experience cross-gender identification at some point in their life (8–11). In line with this, for a diagnosis of gender identity disorder (previously termed "transsexualism"), DSM-III required that the symptoms were "not due to another mental disorder, such as Schizophrenia" (p. 264). Later editions of DSM have dropped this exclusion criterion. However, when it comes to diagnostic criteria for other disorders involving body image (e.g., body dysmorphic disorder), DSM-IV emphasizes that concomitant psychiatric dis-

orders have to be ruled out. DSM-IV acknowledges that omission of this exclusion criterion creates the possibility that “Schizophrenia and severe Gender Identity Disorder may coexist” in the same patient but adds that such comorbidity is unlikely (p. 537).

That the diagnostic differentiation between gender identity disorder and schizophrenia might sometimes be difficult is illustrated by a patient who was referred to one of us (J.àC.) (12). For a period of 6 years, this patient had been treated with hormones in a gender reassignment center. While being scheduled for gender reassignment surgery, the patient was referred to our psychiatric facility because of a psychotic decompensation. He was diagnosed as suffering from schizophrenia of the paranoid type, and when he was given neuroleptic medication his psychotic symptoms decreased and his feelings of being a woman in a man's body disappeared. In retrospect, it appears that this patient interpreted his cross-gender confusion as part of his delusional thinking. Although he is now doing well on a regimen of antipsychotic drugs and lives in the community, he deeply regrets the hormonal treatment and suffers from its irreversible side effects (e.g., atrophy of the genitals and female breasts).

This case suggests that cross-gender delusions in patients with schizophrenia may mimic the persistent and stable cross-gender identification seen in patients with gender identity disorder. The psychiatric literature offers several anecdotal reports of cases in which cross-gender identification disappeared when patients were treated with antipsychotic medication (12–17). There are also case descriptions of patients whose cross-gender identification returned after antipsychotic medication was stopped (18). Finally, there are reports of remission of gender identity disorder in nonpsychotic, nonmedicated adult patients (19). The supporting text for the DSM-IV gender identity disorder criteria assumes that a patient with genuine gender identity disorder “feels like a member of the other sex rather than truly believes that he or she is a member of the other sex” (p. 537). In many cases, this clinical heuristic might be useful, but the example cited here suggests that it sometimes fails.

When patients with gender identity disorder suffer from severe comorbid psychopathology, it may be difficult for psychiatrists to decide which diagnosis should have a primary status. It is obvious that, in such cases, any decision has far-reaching consequences for the type of treatment selected and for the well-being of the patients involved. How often are psychiatrists confronted with cross-gender identification cases in which diagnostic complications arise? To address this issue, we assessed current opinions about comorbidity and treatment of gender identity disorder in a national sample of board-certified psychiatrists.

Method

From the records of the Dutch Psychiatric Association, we randomly selected 382 psychiatrists. In July 2000, these psychiatrists were sent an 11-item questionnaire that asked them whether they had ever treated patients who experienced cross-gender confusion (Appendix 1). When they said they had, psychiatrists were asked to specify, for each case they had treated, whether they judged gender identity disorder to be the primary diagnosis or the cross-gender confusion was interpreted and treated as secondary to other psychiatric conditions. Additionally, several questions addressing the psychiatrists' opinions about diagnosing and treating gender identity disorder were asked. The final item invited respondents to comment freely on the issue.

Results

Of the 382 psychiatrists, 186 (49%) completed and returned the questionnaire before the deadline of September 29, 2000. Respondents had been working as psychiatrists for a mean of 13.9 years (SD=7.4, range=0.5–31.0).

Experiences With Cross-Gender Confusion and Gender Identity Disorder

A large majority of the respondents (76% [N=142]) had treated cross-gender confused patients at least once. The total number of patients treated varied from 0 to 50 per psychiatrist. As anticipated, there was a modest but significant correlation between years of working experience and number of patients treated (Pearson's $r=0.15$, $N=186$, $p<0.05$). In total, the 186 respondents reported about 584 patients suffering from cross-gender confusion. When this rate is generalized to the entire population of Dutch psychiatrists, it would mean that Dutch psychiatrists are consulted every 4.5 years by a patient who experiences cross-gender confusion.

In 225 (39%) of the 584 reported cases, gender identity disorder was regarded as the primary diagnosis. For the remaining 359 patients (61%), cross-gender confusion occurred along with other psychiatric disorders, and in 270 (75%) of these 359 cases, it was interpreted as secondary to other psychiatric illnesses.

Nature of Psychiatric Comorbidity

One hundred twenty-nine psychiatrists specified psychiatric comorbidity for their patients with gender identity disorder. Comorbid personality disorders were reported by 102 (79%) of the 129 psychiatrists, major mood disorders by 34 (26%), dissociative disorders by 34 (26%), and psychotic disorders by 31 (24%).

We asked psychiatrists whether they agreed with the DSM-IV heuristic not to rule out other disorders in cases where a gender identity disorder diagnosis is considered. One hundred seventy-seven of the 186 respondents answered this question; 38 (21%) of these respondents indicated that they were not able to make up their mind about this issue. Of the 139 psychiatrists who did express an opinion, 78 (56%) considered this heuristic not to be wise.

Treatment

Of the 142 psychiatrists who had treated patients with cross-gender confusion, 40 (28%) had referred patients to specialized gender clinics for further treatment at least once. These 40 psychiatrists had referred 73 patients (range=1–15) to sex reassignment therapy facilities. The large majority of the referring psychiatrists (75% [N=30]) had referred only one patient to a gender clinic. Thus, the remaining group of 10 psychiatrists was responsible for the majority of referrals to gender clinics (i.e., 43 [59%] of the 73 referrals).

Only 95 (51%) of the 186 respondents were willing to specify an appropriate age for starting gender reassignment therapy. One psychiatrist said that gender reassignment should not be considered until the patient reaches the age of 85. After exclusion of this curious outlier, the mean recommended starting age was 18.7 years (SD=3.9, range=10–25).

Discussion

A majority of Dutch psychiatrists reported that they had encountered patients with cross-gender confusion at least once. This finding should be interpreted with caution because of limitations inherent to surveys. Although psychiatrists were randomly selected and the response rate was acceptable (49%), it may be that psychiatrists who did not have any experience with such patients were less inclined to return the questionnaire. Apart from that, we cannot rule out that the reported patient cases included duplications: some patients may have been treated by more than one of the responding psychiatrists.

In spite of these limitations, the conclusion seems warranted that at some point in their career, most Dutch psychiatrists will be consulted by a patient suffering from cross-gender confusion. Therefore, it is important that there be consensus about the diagnostic procedures and treatment options that should be considered for such patients. Our results, however, suggest that opinions differ as to the type of treatment that should be considered first in these cases. A small number of psychiatrists seem to refer such patients to specialized sex reassignment therapy centers on a regular basis, but others never seem to recommend this treatment route. It appears that the therapy options proposed to patients with gender identity disorder depend heavily on the personal preferences of psychiatrists. Thus, one respondent said he had referred 15 patients to a gender clinic, but another remarked that “the scalpel should not be used to reconcile fantasy with reality.” The view of this latter respondent corresponds to that of McHugh (20), who noted that it is hard to understand how the belief of a male patient “that he is a woman trapped in a man’s body differs from the feelings of a patient with anorexia nervosa that she is obese despite her emaciated, cachectic state. We don’t do liposuction on an-

orexics. So why amputate the genitals of these patients?” (p. 111).

Opinions also differed with regard to diagnostic routines and the minimum age for sex reassignment therapy to be a safe treatment. Almost half of the respondents were not willing to specify a minimum starting age for such treatment. The average minimum age specified by respondents who were willing to answer this question was well above the legally permissible age for this procedure in the Netherlands.

Personality, mood, dissociative, and psychotic disorders were the most often reported psychiatric conditions comorbid with gender identity disorder. In about half of the cases that were reported, cross-gender confusion was regarded as an epiphenomenon of other illnesses. Although psychiatrists probably see a self-selected group of patients with cross-gender confusion (those with psychiatric problems would be more likely to visit a psychiatrist), these results underline the need for education of general physicians about psychiatric comorbidity of cross-gender identification.

Our findings also underline the need for articulated diagnostic rules in this area. A nontrivial proportion of our respondents felt that the current DSM-IV gender identity disorder criteria are not strict enough. These respondents indicated that other psychiatric disorders that may explain the cross-gender symptoms should be ruled out before considering a diagnosis of gender identity disorder. There is evidence suggesting that persistent cross-gender identification may occur in psychotic patients. In such cases, the cross-gender confusion appears to be entirely attributable to the misperception of reality that is typical for psychotic disorders (12–18).

Our results, together with anecdotal reports about gender identity disorder misdiagnoses, indicate that it may be fruitful to consider reinstatement of an exclusion criterion that cross-gender symptoms should not be attributable to other psychiatric disorders such as schizophrenia. The current DSM criteria allow for a situation in which gender identity disorder and schizophrenia “may coexist” in a patient (DSM-IV, p. 537). One of our respondents said, “When a patient has an acute psychotic episode, I wouldn’t dare to diagnose gender identity disorder.”

The fact that psychosis is mentioned relatively often as a comorbid problem of gender identity disorder also calls for a very careful evaluation of the benefits and risks involved in lowering the starting age for sex-adjustment treatment. The more florid symptoms of psychotic disorders generally do not emerge until adolescence and early adulthood. Confusion about one’s identity, body image aberrations, and the wish to drastically change one’s appearance (e.g., references 21, 22), however, may become manifest before actual psychotic breakdown occurs, as was the case in our hormonally treated psychotic patient (12). Discussions about the proper age for starting sex reassignment therapy should take into account the far-

reaching consequences of misclassifying psychotic patients' cross-gender confusion as gender identity disorder. Thus, in order to assess reliably the nature of the expressed desire to change gender, it may be necessary to wait until early adulthood before sex reassignment ther-

apy becomes a safe option. We feel that independent committees that monitor and evaluate referrals to sex reassignment therapies would be of benefit in this area. Psychiatrists should be well represented on such committees.

APPENDIX 1. Cross-Gender Treatment Survey Questions

1. How many years have you been working as a psychiatrist? _____ years
2. In your career as a psychiatrist, how many times have you dealt with patients with cross-gender confusion? _____ times
3. For how many of these patients did you establish gender identity disorder as a primary diagnosis? _____ patients
4. For how many of these patients did you judge the cross-gender identification to be secondary to other DSM-IV diagnoses? _____ patients
5. In how many of your patients with gender identity disorder did comorbid psychiatric disorders exist? _____ patients
6. If you have experience with patients suffering from gender identity disorder in combination with comorbid psychiatric disorders, what comorbid disorders were those?
 - _____ Personality disorders
 - _____ Adjustment disorders
 - _____ Impulse control disorders
 - _____ Eating disorders
 - _____ Sexual disorders
 - _____ Dissociative disorders
 - _____ Factitious disorders
 - _____ Somatoform disorders
 - _____ Anxiety disorders
 - _____ Mood disorders
 - _____ Schizophrenia and other psychotic disorders
 - _____ Substance-related disorders
 - _____ Mental disorders due to a general medical condition
 - _____ Delirium, dementia, and amnestic and other cognitive disorders
7. Did you ever refer a patient to a gender reassignment center? _____ No (skip to question 9)
 _____ Yes, _____ times
8. Were these referred patients suffering from comorbid psychiatric disorders as mentioned in question 5? _____ No
 _____ Yes
9. According to the DSM-IV gender identity disorder criteria, psychiatric disorders such as schizophrenia do not have to be ruled out to establish a diagnosis of gender identity disorder. Do you agree with this procedure? _____ No
 _____ Not sure
 _____ Yes
10. What in your opinion is an appropriate age to start sex reassignment therapy? _____ years
11. Do you wish to comment further on this issue? _____

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