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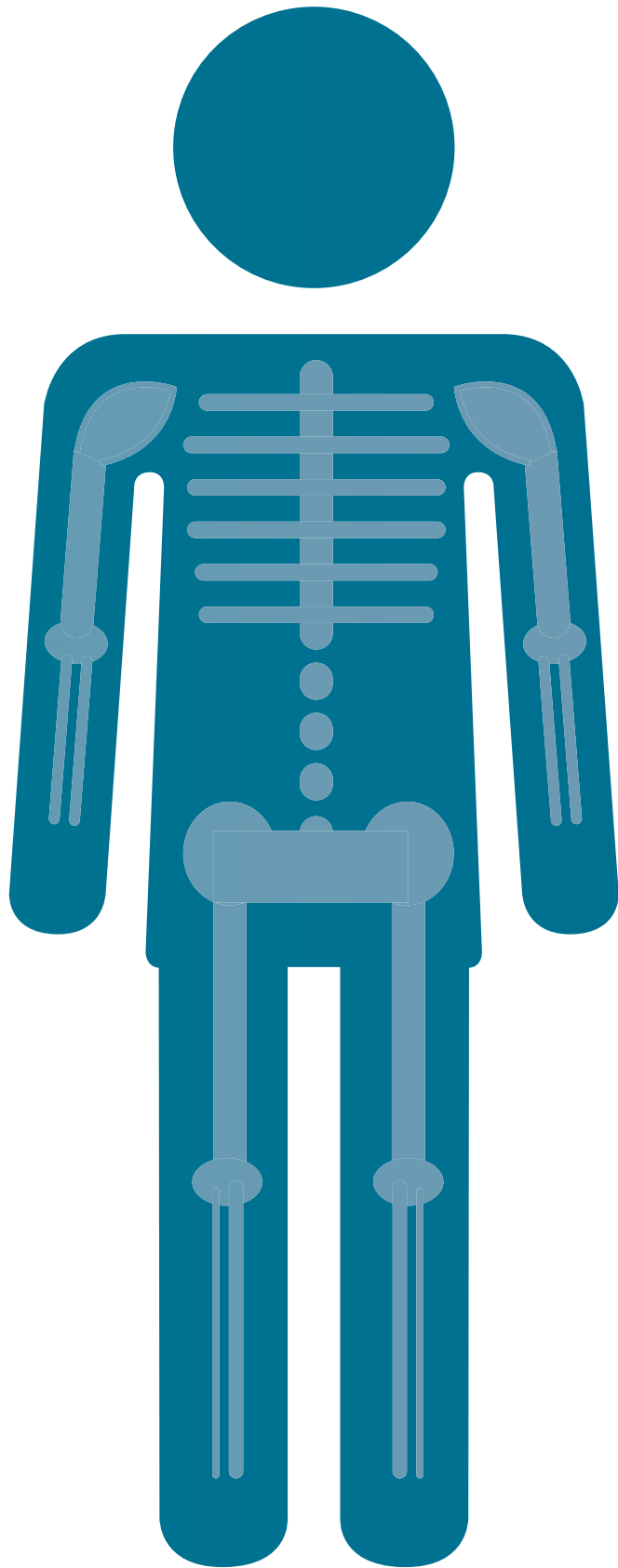
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Chapter 2

The Amsterdam Cohort of Gender Dysphoria study (1972-2015): trends in prevalence, treatment, and regrets

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Abstract

Background: Over the past decade, the number of people referred to gender identity clinics have increased rapidly. This raises several questions, especially concerning the frequency of performing gender affirming treatments with irreversible effects, and regret of such interventions.

Aim: To study the current prevalence of gender dysphoria, how frequently gender affirming treatments are performed, and the number of people experiencing regret of this treatment.

Methods: The medical files of all people who attended our gender identity clinic from 1972 to 2015 were reviewed retrospectively.

Outcomes: The (change in) number of people that applied for transgender healthcare, percentage of people starting with gender affirming hormonal treatment (HT), the estimated prevalence of trans people receiving gender affirming treatment, the percentage of people who underwent gonadectomy, and the percentage of people who regretted gonadectomy, specified for each year separately.

Results: A total of 6,793 people (4,432 birth-assigned males, 2,361 birth-assigned females) visited our gender identity clinic between 1972 and 2015. The number of people assessed per year increased 20-fold from 34 people in 1980 to 686 people in 2015. The estimated prevalence in the Netherlands in 2015 is 1:2,800 for men (trans women) and 1:5,200 for women (trans men). The percentage of people who started with HT within 5 years after the first visit decreased over time, with almost 90% in 1980 to 65% in 2010. The percentage of people who underwent gonadectomy within 5 years after starting HT remained stable over time (74.7% of the trans women and 83.8% of the trans men). Only 0.6% of the trans women and 0.3% of the trans men who underwent gonadectomy were identified as experiencing regret.

Clinical Implications: Because the transgender population is growing, a larger availability of transgender healthcare is needed. Other healthcare providers should familiarize themselves with transgender healthcare, as hormonal treatment may influence diseases and interact with medication. As not all people apply for the classical treatment approach, special attention should be given to those who choose less common forms of treatment.

Strengths & Limitations: This study was performed in the largest Dutch gender identity clinic, treating over 95% of the transgender population in the Netherlands. Due to the retrospective design, some data may be missing.

Conclusion: The number of people with gender identity issues seeking professional help increased dramatically in the last decade(s). The percentage of people who regretted gonadectomy remained low and did not show a tendency to increase.

Introduction

Gender Dysphoria (GD) refers to the distress related to a marked incongruence between one's assigned sex at birth and the experienced gender later in life.⁽¹⁾ In this study, we define trans women as birth-assigned males, and trans men as birth-assigned females, who may receive medical treatment to adapt their physical characteristics to their experienced gender. This treatment may include puberty suppression (PS), gender affirming hormonal treatment (HT), and gender affirming surgery (GAS).

It is widely observed that the transgender population is growing and broadening.^(2,3) This increase in the transgender population raises several questions, especially concerning the frequency of performing gender affirming treatments with irreversible effects, and regret of such interventions.

There are no reliable estimations of the current prevalence of trans people who actually have received gender affirming treatment (including HT), as most recent studies are based on questionnaires^(4,5) or data about GAS only.^(6,7) In most countries transgender care is performed by multiple healthcare providers (e.g. university clinics or general practitioners), which makes it difficult to provide these numbers. In contrast, in the Netherlands, over 95% of the transgender population have received treatment in only one center – the gender identity clinic at the VU University medical center (VUmc) in Amsterdam, the Netherlands, currently known as the Center of Expertise on Gender Dysphoria.⁽⁸⁻¹⁰⁾ This center started treating adults in 1972. Since 1987, children and adolescents were seen by a mental health specialist in the Utrecht University Medical Center, the Netherlands. After considered eligible, they could receive medical treatment in the VUmc, which consisted of PS (usually by gonadotropin-releasing hormone [GnRH] analogues), later followed by HT (see Kreukels & Cohen-Kettenis for the treatment protocol for adolescents diagnosed with GD⁽¹¹⁾). After 2002, the Utrecht clinic stopped seeing adolescents and the diagnostics were performed in the VUmc. Adult people are referred to a psychologist or psychiatrist for the diagnostic phase after an initial screening. The people diagnosed with GD can start with HT if they are considered eligible. HT consists of testosterone in trans men, and oestrogens, often combined with anti-androgens, in trans women. In the first year of HT, check-ups are performed every three months. After a minimum of 12 months of HT, GAS can be performed, including mastectomy and hysterectomy with oophorectomy in trans men, and breast augmentation and vaginoplasty (including orchiectomy) in trans women. After gonadectomy (oophorectomy or orchiectomy), people are usually seen every one to two years for a clinical follow-up.

In the current study we have included the complete population seen at the gender identity clinic of the VUmc between 1972 and December 2015 to assess the current prevalence of trans people who received medical treatment, the frequency of specific medical treatments performed, and the numbers of people who received

hormonal treatment in line with their sex assigned at birth because they regretted gonadectomy.

Material and methods

Study design and patient selection

After approval of the local ethics committee, a retrospective medical record review was performed to identify all people seen in our gender identity clinic from 1972 until December 2015. Data were collected from the Hospital Registries of the VUmc. The total study population was defined by selecting people who had been diagnosed with one of the following International Classification of Diseases (ICD) diagnoses: 302.5 (transsexualism), 302.6 (gender identity disorder not otherwise specified), or 302.85 (gender identity disorder in adolescent or adult) for the 9th edition, or F64 (gender identity disorders) for the 10th edition.⁽¹²⁾ In addition, the administrative employees of our gender identity clinic registered everyone who was referred to our gender identity clinic since the early seventies. People reported on this list were included in the study population as well. Some people of this study population have been described in earlier studies.^(9,13-18) People were excluded from the study if they had been registered at our gender identity clinic but had actually never visited the clinic, or if they had presented themselves with other complaints than gender identity issues. Due to the retrospective design and the large study population, necessity for informed consent was waived by our local ethics committee.

Hospital Registries

The Hospital Registries stores clinical data obtained during regular patient care performed in our center, including medical diagnoses (since 1985), medication prescriptions (since 2000), surgical interventions (since 2006), laboratory test results (since 2004), radiology results (since 1993), and visit dates (since 2007). The first visit was defined as the first appointment with the psychologist, psychiatrist, pediatrician, endocrinologist, or gynecologist for gender identity related healthcare.

Clinical data collection

Not all data were available from the Hospital Registries, particularly older data or surgeries performed in other centers were missing. In order to generate the most reliable results, the medical records of all people who were reported as study population were checked. All people were classified as trans women or trans men (based on the sex assigned at birth), and date of birth and death were noted. The following categories were included: the individual was in diagnostic stage, the individual did not start with HT, or the individual was on HT. A start with HT was defined as the first date gender

affirming hormones were prescribed by a physician in our gender identity clinic after a confirmed GD diagnosis, irrespective of previous gender affirming hormone use. Of the people who started HT, baseline and follow-up data, including first visit, medical history, medication use, prior gender affirming hormone use, start date and type of PS and HT, and date of gonadectomy were collected. Some people regretted the interventions they had undergone. Trans women who started testosterone treatment after vaginoplasty or trans men who started estrogen treatment after oophorectomy and expressed regret were categorized as those who experienced regret. Reasons for regret as reported in their medical records were noted. Dates were set to the first of the month and personal identification data were removed from the research database.

Statistical analysis

The total number of people visiting the clinic each year and their median age were reported separately for trans women and trans men, and were stratified for age at the first visit: children <12 years, adolescents between 12 and 18 years, and adults ≥ 18 years. The percentage of people who started with HT within five years after the first visit was reported for each year. The prevalence was calculated for people aged ≥ 12 years, ≥ 16 years, 12 to 18 years, 18 to 30 years, 30 to 50 years, and ≥ 50 years, by using the total number of people in these age groups who received medical treatment in our center until 2015, excluding deceased people. The total population of these age groups in the Netherlands in 2015 were provided by the Central Bureau of Statistics (CBS) of the Netherlands. The percentage of people who underwent gonadectomy within five years after start with HT was reported. For calculation of the total percentage of the study population who had undergone gonadectomy, only people of 18 years and older who used HT for at least 1.5 years were included, as these were requirements for surgery. People who regretted their medical transition are reported as a percentage of the total population of trans women and trans men that underwent gonadectomy. In adults, time between first visit and start with HT or gonadectomy, if applicable, are expressed as median days with inter quartile range (IQR). Total follow-up time was calculated for every individual who started with HT and was expressed as years between the first visit and last visit. Prevalence with 95% confidence interval (CI) were calculated using OpenEpi.⁽¹⁹⁾ All other analyses were performed using STATA Statistical Software (Statacorp, College Station, Texas, USA), version 13.1.

Results

First visit

In total, 6,793 people had presented themselves for gender affirming treatment, with more trans women (65.2%) than trans men (34.8%) (Table 1). The number of people attending the gender identity clinic increased over time, while the median age of adults at the time of their first visit decreased, as shown in Figure 1. The median age at first visit is lower for adult trans men (25 years, IQR 21 – 35 years) than adult trans women (33 years, IQR 25 – 42 years). While historically more trans women than trans men presented themselves for treatment, in 2015 more trans men than trans women applied for treatment. This change in sex ratio is mainly due to the increase in adolescent trans boys, as the ratio of trans women:trans men in adults remained stable over time.

Table 1. Treatment patterns of the total study population, stratified for age groups, and for trans women and trans men.

	Trans women	Trans men	Total	Ratio trans women: trans men
Total number people (% of total)	4,432 (65.2%)	2,361 (34.8%)	6,793 (100%)	1.9:1
- Adults ≥18 years	3,809	1,624	5,433	2.3:1
• Age, yr (median, IQR; max)	33 (25 – 42; 81)	25 (21 – 35; 73)	31 (23 – 41; 81)	
• % start HT	68.9	72.9	69.9	
• % gonadectomy	75.3	83.8	77.7	
- Adolescents 12-18 years	330	482	812	0.7:1
• Age, yr (median, IQR)	16 (15 – 17)	16 (15 – 17)	16 (15 – 17)	
• % start PS	28.7	50.8	41.0	
◇ % who stopped PS	4.1	0.7	1.9	
• % start HT without PS *	33.9	30.8	32.2	
• % gonadectomy	79.5	77.2	78.2	
- Children <12 years	293	255	548	1.1:1
• Age, yr (median, IQR)	8 (7 – 10)	9 (8 – 11)	9 (7 – 10)	
• % start PS	33.6	49.1	40.3	
Regret	0.6% (n=11)	0.3% (n=3)	0.5% (n=14)	2.0:1

Percentage start with puberty suppression (PS): only in people after reaching the age of eligibility (usually 12 years or older). Percentage start gender affirming hormonal treatment (HT): only in people aged 16 years or older. Percentage gonadectomy (orchiectomy in trans women and oophorectomy in trans men): only in people treated with cross-sex hormones for at least 1.5 years and 18 years or older. People with regret: only in people after gonadectomy. Age is defined as age at first visit in the VU University medical center (VUmc), Amsterdam. Between 1987 and 2002, children and adolescents were first seen in Utrecht University Medical Center and were only seen in the VUmc if they could start with medical treatment. * After diagnostic phase too old (≥18 years) to start with PS, could start directly with HT. Abbreviations: yr = years, IQR = inter quartile range, max = maximum.

Table 2. Description of the adult study population for every 5-years cohort

	Number first visit	% start HT	Age start HT	% Use HT past	% gonadectomy
Trans women					
≥18 years					
1972-1979	119	89.9	33 (26 – 40)	16.8	79.4
1980-1984	189	88.4	33 (25 – 40)	12.6	71.9
1985-1989	319	75.9	31 (25 – 39)	15.3	76.5
1990-1994	392	65.8	30 (25 – 41)	20.5	76.7
1995-1999	522	65.5	34 (27 – 41)	26.6	78.7
2000-2004	605	56.0	38 (30 – 45)	29.2	67.3
2005-2009	476	61.6	39 (29 – 47)	22.9	68.6
2010-2014	926 (138*)	60.9*	32 (23 – 42)*	29.8*	na
Trans men					
≥18 years					
1972-1979	30	96.7	24 (21 – 30)	10.3	72.4
1980-1984	69	84.1	24 (21 – 32)	3.5	82.8
1985-1989	105	84.8	24 (21 – 30)	1.1	79.8
1990-1994	142	69.0	27 (21 – 33)	7.1	88.8
1995-1999	177	65.0	29 (24 – 37)	7.0	88.7
2000-2004	207	63.3	32 (26 – 39)	5.3	87.0
2005-2009	185	63.8	29 (23 – 37)	3.4	81.4
2010-2014	518 (70*)	71.4*	24 (21 – 37)*	0*	na

Age is reported as median with interquartile range (IQR). Percentage of people starting with gender affirming hormonal treatment (HT) are people who started HT within 5 years after the first visit. Percentage of people who underwent gonadectomy are people who had this procedure within 5 years after start of HT. *Only in people who had their first visit 5 years before 31 December 2015 (n=138 for trans women, n=70 for trans men).

Prevalence and treatment

At the end of 2015, a total of 3,838 trans people aged 16 years or older had received medical treatment and were not deceased. As the total population of people aged 16 years or older in the Netherlands in 2015 was 13,870,426 people, the prevalence is 27.7 per 100,000 people (95%CI 26.8 – 28.6), or 1:3,600 people. Stratification for trans women and trans men leads to a prevalence of 36.4 (95%CI 35.0 – 37.8) per 100,000 people (or 1:2,800 people) for men (trans women), and 19.3 (95%CI 18.3 – 20.3) per 100,000 people (or 1:5,200 people) for women (trans men). Calculation of prevalence numbers of people aged 12 years or older and specific age groups are shown in Table 3.

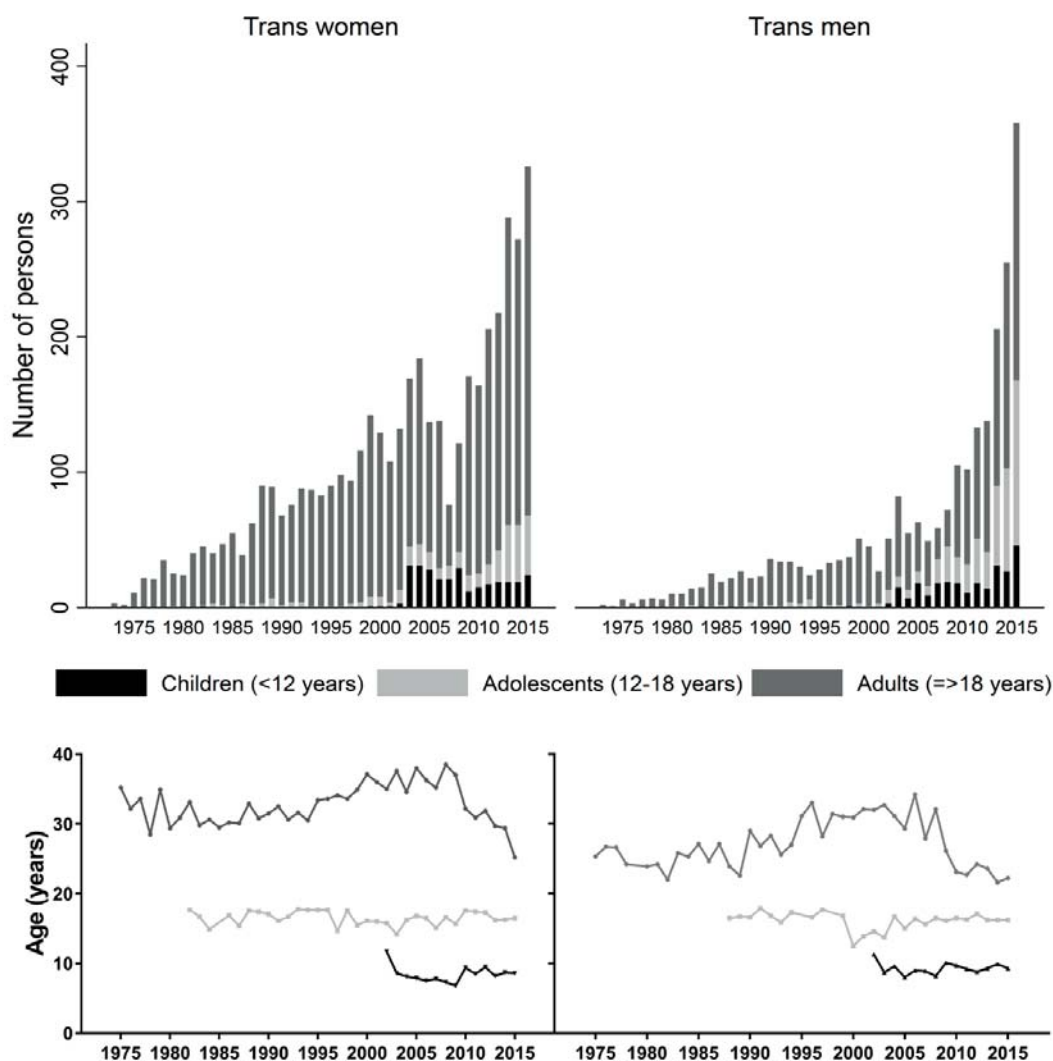


Figure 1.

Number of people with median age for each year, stratified for trans women and trans men, and stratified for children (<12 years), adolescents (12-18 years), and adults (≥ 18 years). Age is defined as age at first visit in the VU University medical center (VUmc), Amsterdam. Between 1987 and 2002, children and adolescents were first seen in Utrecht University Medical Center and were only seen in the VUmc if they could start with medical treatment.

The percentage of adult people who started with HT within 5 years after the first visit decreased over time, while the percentage of people who underwent gonadectomy within 5 years after start HT remained stable (Figure 2). Of the total study population treated with HT for at least 1.5 years and aged 18 years or older, 75.6% of the trans women ($n=1,742$) and 82.4% of the trans men ($n=885$) underwent gonadectomy. The median time between first visit and start of HT for adults was 327 days (IQR 36 to 570 days), and between first visit and gonadectomy 1029 days (IQR 679 to 1465 days). The median follow-up time for people treated with HT was 6.4 years (range 0.4 to 41.6 years).

Table 3. Prevalence numbers, specified for different age groups

	Total population		Male sex assigned at birth (trans women)		Female sex assigned at birth (trans men)	
	per 100,000	1 per	per 100,000	1 per	per 100,000	1 per
≥12 years	26.9 (26.1-27.8)	3,700	34.8 (33.5-36.2)	2,900	19.3 (18.3-20.3)	5,200
≥16 years	27.7 (26.8–28.6)	3,600	36.4 (35.0-37.8)	2,800	19.3 (18.3-20.3)	5,200
12-18 years	16.0 (13.9-18.4)	6,300	11.1 (8.8-14.1)	9,000	21.0 (17.7-25.1)	4,800
18-30 years	35.7 (33.5-38.2)	2,800	30.3 (27.4-33.4)	3,300	41.4 (37.9-45.1)	2,400
30-50 years	30.5 (29.0-32.2)	3,300	40.1 (37.6-42.8)	2,500	21.0 (19.2-23.0)	4,800
≥50 years	23.0 (21.9-24.2)	4,300	37.6 (35.5-39.8)	2,700	9.7 (8.7-10.8)	10,300

Data are shown as numbers with 95% confidence intervals.

Of the adolescents, 41.0% started with PS, while only 1.9% of these adolescents stopped with PS and did not start with HT (Table 1). 32.2% of the adolescents started directly with HT, as they were too old (≥18 years) to first start with PS after the diagnostic phase.

Regret

Regret was identified in 0.6% of the trans women and 0.3% of the trans men who underwent gonadectomy. The characteristics of these people are summarized in Table 3. Their ages at start of HT ranges from 25 to 54 years of age, and they expressed their regrets between 46 and 271 months after initiation of HT. Reasons for regret were divided into social regret, true regret, or feeling non-binary. Trans women who were classified as having social regret still identified themselves as women, but reported reasons as ‘ignored by surroundings’ or ‘the loss of relatives is a large sacrifice’ to life in the male role again. People who were classified as having true regret reported that they had thought gender affirming treatment was a ‘solution’ for, for example, homosexuality or personal acceptance, but, in retrospect, regretted the diagnosis and treatment.

Table 4. Characteristics of people with regret

Case	Type	Year start HT	Age start HT	Year of gonadectomy	Time after HT	Time after gonadectomy	Reversal surgery	Reason regret
1	M-F-M	1978	31 yr	1979	± 153 mo	± 130 mo	None	Social acceptance
2	M-F-M	1982	25 yr	1984	± 54 mo	± 27 mo	Mastectomy	Social acceptance
3	M-F-M	1986	47 yr	1988	± 216 mo	± 197 mo	Mastectomy	Social acceptance
4	M-F-M	1988	33 yr	1990	± 186 mo	± 167 mo	None	True regret
5	M-F-M	1988	38 yr	1990	± 70 mo	± 44 mo	Mastectomy	Social acceptance
6	M-F-M	1991	41 yr	1993	± 67 mo	± 49 mo	Mastectomy, vaginectomy, phalloplasty	Social acceptance
7	M-F-M	1991	38 yr	1995	± 271 mo	± 225 mo	Mastectomy	True regret
8	M-F-M	1993	30 yr	1994	± 79 mo	± 61 mo	None	Feels non-binary
9	M-F-M	1996	33 yr	1997	± 90 mo	± 73 mo	Mastectomy, phalloplasty	True regret
10	M-F-M	1997	43 yr	1999	± 46 mo	± 27 mo	Mastectomy	True regret
11	M-F-M	2004	54 yr	2007	± 130 mo	± 92 mo	Mastectomy, vaginectomy	True regret
12	F-M-F	1987	25 yr	1990	± 91 mo	± 50 mo	Breast augmentation, remove testicular implants	True regret
13	F-M-F	1990	34 yr	1993	± 102 mo	± 74 mo	Remove testicular implants	Feels non-binary
14	F-M-F	1993	31 yr	1997	± 258 mo	± 212 mo	None	True regret

Abbreviations: HT = gender affirming hormonal treatment; M-F-M = male-to-female-to-male; F-M-F = female-to-male-to-female; yr = years, mo = months

Discussion

The aim of this study was to generate a data set of all the individuals whom have presented to our clinic for gender affirming care from 1972 to 2015. We found that the number of people with gender identity issues who seek professional help increased dramatically in the last decade(s), and that the median age of adults at presentation decreased. The ratio of trans women:trans men remained stable over the years for adults, while in adolescents the population of trans boys increased relatively more than the population of trans girls. Currently, more trans boys than trans girls are seen. This phenomenon has also been described by Aitken et al.⁽¹⁷⁾ The age at first visit was higher for adult trans women than trans men. The percentage of adult people starting with HT within five years after the first visit decreased over time, while the percentage of people who underwent gonadectomy within five years after starting HT remained stable. Of the total population treated with HT, 77.8% underwent a gonadectomy. Only a very small percentage of people who underwent gonadectomy regretted their decision, expressed as start of hormonal treatment in line with their sex assigned at birth.

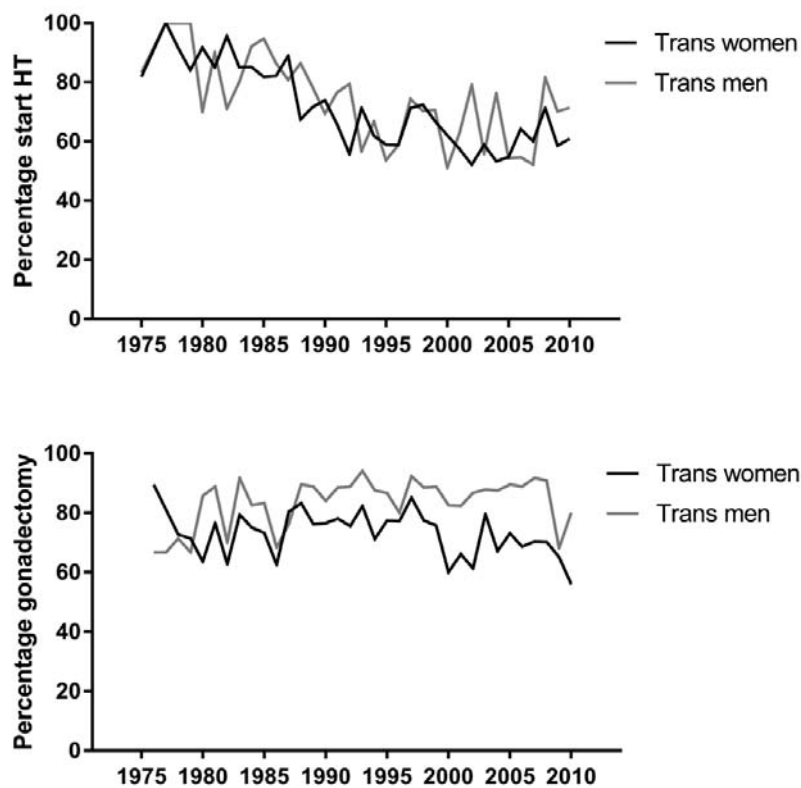


Figure 2.

Percentage of adult trans people starting with gender affirming hormonal treatment (HT, upper) within 5 years after first visit, or occurrence of gonadectomy (lower) within 5 years after start HT for each year, stratified for trans women and trans men. Year is defined as year of first visit.

An explanation for the increase in referrals may be the increased attention in society and media, which contributes not only to awareness of existence of GD and possibilities for medical treatment, but also to a higher social acceptance. In addition, information about trans identities are much more accessible via the internet within the last decade, which may lead to an earlier recognition of gender identity issues. Also, trans and gender non-binary individuals may be more willing to access care and more access to care made be available.

The increase in the prevalence of people with gender dysphoria who search for medical treatment in the Netherlands (1:11,900 trans women and 1:30,400 trans men in 1990 ⁽⁸⁾ versus 1:2,800 trans women and 1:5,200 trans men currently) suggests that the transgender population is dramatically increasing. The highest prevalence for trans women is found in the age group 30 to 50 years (1:2,500), while in trans men it is found in the age group 18 to 30 years (1:2,400). Trans people in the Netherlands seem to experience a reasonable degree of acceptance due to a tolerant social climate in contrast to many other countries.⁽²⁰⁾ For example, the medical costs are reimbursed by the medical insurance companies, and it is possible to change the legal sex status (even without gonadectomy). These points may lead to a lower threshold to seek help, making this study population useful for an adequate estimation of the current prevalence of people with gender dysphoria who wish medical treatment. Not all, but over 95% of the treated trans people are treated in our gender identity clinic. In addition, not all trans people seek medical help. Some use self-medication or go abroad for treatment. Therefore, these numbers may still be an underestimation of the real prevalence. Our data represent a population that actively had sought help in a medical setting. In 2012, a Dutch study of non-clinical people reported that 0.6% (1:167) of male sex assigned at birth and 0.2% (1:500) of female sex assigned at birth reported an incongruent gender identity with a wish for hormones or surgery.⁽²¹⁾ However, that study was a population-based study with a response rate of 20.9% which could lead to nonresponse bias. In addition, the existence of incongruent gender identities was based on self-report and no detailed assessment of GD was performed, which could both have led to higher prevalence rates.

Interestingly is the percentage of children who were referred in childhood (before the age of 12) and who started puberty suppression when the GD persisted and eligibility criteria were fulfilled. This 40% of children who start with PS is almost identical to the 39% of persistence of childhood gender dysphoria reported in an earlier Dutch study (using a smaller cohort of children).⁽²²⁾ In addition, the finding that the persistence is higher in natal girls (49.1%) compared to the natal boys (33.6%) is also in line with the observations in previous follow-up studies on the persistence of gender dysphoria in children (see for an overview Ristori & Steensma ⁽²³⁾).

Remarkably, we found a decrease over time in percentage of referred adult people who did actually start with HT. This finding might be explained by the fact that

in the past, it was harder to find information about GD and its treatment, and only people suffering from extreme types of GD managed to visit our gender identity clinic for treatment. Currently, due to media attention and the internet, it is easier to access information about our gender identity clinic, making the threshold lower to search for help. This may have led to referrals of people with milder forms of GD and people who are not sure of their feelings and just want to explore these with a psychologist. Such people may eventually not pursue HT. Another explanation might be that not all trans people wish HT, for example trans men or people with a non-binary identity who only have a wish for a mastectomy.⁽²⁴⁾

By contrast, we noticed that the percentage of people who underwent gonadectomy within five years after start of HT remained stable over time. At the start of the clinic in 1972, the knowledge about transgender care was limited and only people who wished a classical treatment, consisting of a diagnostic phase, hormonal treatment plus social transitioning, and surgery (in this order) were treated. There was no room for partial treatments. Since the publication of the Standards of Care version 6 in 2001, other types of treatment are also offered.⁽²⁵⁾ In addition, in 2014, a change in the Dutch law was made, making it possible for trans people without a wish for gonadectomy to alter the sex on their birth certificate with a statement of an expert who declared that the individual is diagnosed with GD (Dutch civil law, article 1:28). While these changes in clinical guidelines and the law might have led to a decrease in the number of trans people choosing for gonadectomy, the current results do not show this. However, the follow-up time of this study may be too short to notice such changes.

In the HT group, 22% of the people who were eligible for surgery had not undergone gonadectomy. These numbers are comparable with a study from Sweden⁽²⁶⁾, but higher than a study from Belgium⁽²⁷⁾, in which approximately 15% of both trans women and trans men did not undergo gonadectomy. A possible wish to carry a child may change these numbers in the future, as fertility is a more important issue currently.

Despite the large increase in treated trans people, the percentage of people who underwent gonadectomy but regretted their decision is still very low (0.5%). In a review of Pfäfflin in 1992, a regret percentage of <1% for trans men and 1-1.5% for trans women after gonadectomy was found.⁽²⁸⁾ More recent studies found regret percentages ranging from 0%^(29,30) to 2%⁽⁷⁾ and 6%⁽³¹⁾ after gonadectomy. Thirteen of the 14 people who regretted gonadectomy had started HT between 1978 and 1997 and one in 2004. At best, this indicates that diagnostic and eligibility criteria for treatment have improved over the last decade. Another explanation might be the altered treatment protocol, which also allowed people to receive HT without gonadectomy. Possibly, our findings are an underestimation of people with regret after gonadectomy, as some may choose to go elsewhere for reversal therapy or may experience regret without pursuing reversal surgery or hormone treatment. Regret may not always result in a desire for reversal therapy, as it may be hidden for others. In addition, in our population the average time

to regret was 130 months, so it might be too early to examine regret rates in people who started with HT in the last 10 years.

The Center of Expertise on Gender Dysphoria of the VUmc Amsterdam is the largest gender identity clinic in the Netherlands, where people of all ages, including children and adolescents, are treated. Life-time follow-up is recommended, making it a useful study population for collection of epidemiologic data and future long-term effect studies of treatment effects. However, there are some limitations as well. Because this study is a retrospective chart review study, some data may be lacking. First, it is possible that not all people who once visited our clinic are reported in our database. However, we used several search strategies to identify the total study population, thereby reducing the possibility of missing people. Second, a high number of trans people who had initially received treatment in our center were lost to follow-up. Even though care for trans people is lifelong, a large group (36%) did not return to our clinic after several years of treatment. Therefore we may have missed some information on, for example, gonadectomies performed at other centers or people with regret.

Conclusions

In conclusion, we found that the prevalence of treated trans people increased exponentially. Because of this growing population, it is necessary that healthcare providers outside university clinics also have knowledge about GD and its treatment, as HT can influence the course of several diseases^(32,33) and interact with several types of medication.⁽³⁴⁾ We also found that of all trans people treated with HT, approximately 22% kept their gonads in situ. These people require special attention, as the long term effects of HT on testes, ovaries, and uterus are not established yet. These topics, as well as other possible complications such as cancer risks, are subjects for further research.

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