

Sexual Experiences of Young Transgender Persons During and After Gender-Affirmative Treatment

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abstract

OBJECTIVES: Early gender-affirmative treatment (GAT) of adolescents may consist of puberty suppression, use of affirming hormones, and gender-affirmative surgeries. This treatment can potentially influence sexual development. In the current study, we describe sexual and romantic development during and after treatment.

METHODS: The participants were 113 transgender adolescents treated with puberty suppression, affirmative hormones, and affirmative surgery who were assessed as young adults (38 transwomen and 75 transmen; mean age 20.79 years, SD 1.36) during and after their GAT. A questionnaire on sexual experiences, romantic experiences, and subjective sexual experiences was administered and compared to the experiences of a same-aged sample from a Dutch general population study ($N = 4020$).

RESULTS: One year post surgery, young transgender adults reported a significant increase in experiences with all types of sexual activities: masturbation increased from 56.4% to 81.7%, petting while undressed increased from 57.1% to 78.7%, and sexual intercourse increased from 16.2% to 37.6% post surgery compared to presurgery. Young transmen and transwomen were almost equally experienced. In comparison with the general population, young transgender adults were less experienced with all types of sexual activities.

CONCLUSIONS: Early GAT (including puberty suppression, affirmative hormones, and surgeries) may provide young transgender adults with the opportunity to increase their romantic and sexual experiences.



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WHAT'S KNOWN ON THIS SUBJECT: Early gender-affirmative treatment of transgender adolescents (including puberty suppression, affirming hormones, affirming surgeries) may start as early as the initiation of puberty. Its potential effect on sexual and romantic development during and after treatment has not been investigated so far.

WHAT THIS STUDY ADDS: During the process of gender-affirmative treatment, many transgender adolescents reach their first sexual milestones. After completing treatment, a large increase in sexual experiences is observed. However, although approaching their same-aged peers from the general Dutch population, they are less experienced.

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In recent decades, there has been a major development in health care for transgender adolescents in various Western countries.¹⁻⁶ For this young group, gender-affirmative treatment (GAT) has become available and may consist of puberty suppression with gonadotropin-releasing hormone (GnRH) analogues to prevent the development of secondary sex characteristics and create time for a balanced decision regarding possible use of affirming hormones (testosterone or estrogen) and gender-affirmative surgeries (chest surgery, genital surgery).⁷ During all phases of treatment, psychological support is included in the counseling. Support is adapted to the specific needs of the adolescent and includes preparation for the various steps of gender-affirming medical interventions, social transitioning, discussion of sexuality and fertility, and so on.⁷ Evaluation studies on GAT with use of GnRH analogues in transgender youth reaching adulthood reveal an improvement in psychological functioning, social functioning, body image, and quality of life and alleviation of gender dysphoria.⁸⁻¹⁰ One important area of interest that has not yet been explored is sexual functioning during and after GAT.

Sexual development is a key developmental task for all adolescents¹¹ and accelerates during puberty with the release of puberty hormones.¹² Sexual milestones are generally obtained in an age-dependent and progressive line of intimacy: at the start of puberty, most youth have not had a kiss, whereas at the end, the majority have some sexual experience.^{13,14} Although sexuality might be complex for all adolescents because of its biopsychosocial aspects,¹⁵⁻¹⁷ it might be difficult for transgender youth to explore during their affirming treatment. Our earlier study on sexual experiences of transgender adolescents revealed that at the time

of referral (12-17 years), when no affirming medical interventions had yet been provided, the majority of 137 untreated transgender adolescents fell in love (77%), approximately half of the group engaged in romantic relationships (51%), a somewhat smaller group had some experience petting while undressed (26%), and only a few reported sexual intercourse (5%). Comparisons with cisgender peers from the general population revealed that overall, these rates were lower on all types of sexual activities.¹⁸ In qualitative retrospective research, transgender adults reported that they had skipped sexual stages because of the gender dysphoria that they had experienced and that sexual pleasure was negatively affected by the persistent feelings of incongruence.¹⁹

Many transgender adolescents view their affirming surgeries as the final step of GAT and the long awaited transition to bring their bodies into alignment with their experienced gender.⁹ One of the main reasons given by untreated transgender adolescents for withholding from sexual activities was being ashamed of their bodies related to gender dysphoria.¹⁸ Affirming masculinizing or feminizing hormones and surgeries are therefore expected to have a positive effect on sexuality. One follow-up study on 22 transgender adolescents after affirming hormone therapy and surgeries (puberty suppression was not given at the time) revealed that 36% had a stable relationship and 71% were satisfied with their sex life, whereas masturbation was not frequent, and some transmen described living without a penis to be difficult.⁸

Quantitative data from adult studies on sexuality after hormones and/or gender-affirming surgery reveal mixed results, with either an increase in sexual satisfaction and activity (eg, more arousal, desire, increase in masturbation), or a decrease (eg, arousal difficulties).²⁰⁻³¹ The authors

of a qualitative study in transgender adults describing the subjective experience of sexuality during gender transition reported ambivalent outcomes as well.³²

Thus far, there has been no investigation of sexual development during and after early affirming medical treatment in transgender adolescents. In the current study, we aim to describe the sexual and romantic experiences of young transgender adults during and after GAT, comparing these experiences with those of general population peers while examining gender differences.

METHODS

Participants and Procedure

The study sample included 113 young adults (38 transwomen [birth-assigned men] and 75 transmen [birth-assigned women]) who had received early GAT consisting of puberty suppression, affirming hormones (estrogen or testosterone), and gender-affirming surgeries at the Center of Expertise on Gender Dysphoria at the Amsterdam University Centers, Location VUmc (Vrije Universiteit medical center), Amsterdam, the Netherlands, between 2000 and 2016. They were the first group to complete this trajectory of an initial 538 adolescents referred to the Center of Expertise on Gender Dysphoria between 2000 and 2013 who were diagnosed with gender dysphoria³³ (gender identity disorder in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*) and were considered eligible for treatment. The mean age at referral was 14.69 (SD 2.2, range 10.94-17.74) years. Participants were invited at least 1 year after affirming surgeries, between 2009 and 2016 (see Table 1), for questionnaires about their sexual and romantic experiences in their current situation (after receiving puberty

TABLE 1 General Characteristics of the Participants

Variable	All Participants (N = 113)	Transwomen ^a (n = 38)	Transmen ^a (n = 75)	Significance, P
Age at assessment, y				
Mean (SD) ^b	20.8 (1.36)	20.9 (1.25)	20.7 (1.42)	.58
Range	18.6–25.4	18.9–24.9	18.6–25.4	n/a
Current living situation, n (%) ^c				
With parents	73 (64.6)	23 (60.5)	50 (66.7)	.52
With romantic partner	4 (3.5)	1 (2.6)	3 (4.0)	.52
With others, eg, student house	20 (17.7)	7 (18.4)	13 (17.3)	.89
Alone	15 (13.3)	7 (18.4)	8 (10.7)	.82
No permanent residence	1 (0.9)	0 (0)	1 (1.3)	n/a
Educational level, n (%) ^c				
High school, basic level	67 (59.3)	23 (60.5)	45 (60)	
High school, advanced level	45 (39.8)	15 (39.5)	30 (40)	.96
Profession, n (%) ^c				
Studying	66 (58.4)	25 (65.8)	41 (54.7)	
Working	34 (30.1)	9 (23.7)	25 (33.3)	.29
Job seeking	8 (7.1)	3 (7.9)	5 (6.7)	.81
Incapacitated	5 (4.4)	1 (2.6)	4 (5.3)	.51
Time since surgery, y				
Mean (SD) ^b	1.57 (0.73)	1.53 (0.59)	1.59 (0.80)	.72
Range	0.46–5.38	0.46–3.09	0.69–5.38	n/a
Surgery				
Vaginoplasty	n/a	38 (100.0)	n/a	n/a
Breast augmentation	n/a	9 (23.7)	n/a	n/a
Mastectomy	n/a	n/a	63 (97.9)	n/a
Metoidioplasty	n/a	n/a	6 (8.7)	n/a
Waiting for metoidioplasty	n/a	n/a	15 (21.7)	n/a
Waiting for phalloplasty	n/a	n/a	20 (29.0)	n/a
Does not want metoidioplasty or phalloplasty	n/a	n/a	29 (42.0)	n/a
Sexual orientation, n (%) ^c				
Attracted to birth-assigned gender	94 (84.7)	35 (92.1)	59 (80.8)	<.05
Attracted to opposite gender	2 (1.8)	0 (0)	2 (2.7)	n/a
Attracted to both	10 (10.8)	0 (0)	10 (13.7)	n/a
Does not know yet	3 (2.7)	1 (2.6)	2 (2.7)	.99
Preferred sexual orientation of partner, n (%) ^c				
Heterosexual	73 (64.6)	33 (86.8)	40 (53.3)	<.05
Gay	5 (4.4)	1 (2.6)	4 (5.3)	.51
No preference	32 (28.3)	4 (10.5)	28 (37.3)	<.05
Does not know yet	3 (2.6)	0 (0)	3 (4.0)	n/a
Duration of longest relationship, mo				
Mean (SD) ^b	15.43 (15.3)	14.6 (17.4)	15.8 (14.4)	.78
Range	1.0–80	1.0–80	1.0–48.0	n/a
No. partners ^c				
No partner	28 (24.8)	14 (36.8)	12 (16.4)	<.05
1 partner	22 (19.8)	8 (21.1)	14 (19.2)	.81
>1 partner	63 (56.8)	16 (42.1)	47 (64.4)	<.05

n/a, not applicable.

^a Young transgender adults at inclusion, including birth-assigned men (transwomen) and birth-assigned women (transmen).^b Differences calculated by T-test.^c Differences calculated by Chisquare test.

suppression, cross-sex hormones, and surgery) and retrospectively (the period right before surgery, after receiving puberty suppression and cross-sex hormones). The mean age at the assessment was 20.79 (SD 1.36, range 18.60–25.36) years. Surgery for transwomen consisted of a vaginoplasty and sometimes breast augmentation, and surgery for transmen involved a hysterectomy with an ovariectomy (requested for legal sex change until 2014) and, when necessary, a mastectomy (for most). Some transmen underwent a metoidioplasty, whereas the majority was either on the waiting list for a phalloplasty or chose not to undergo genital surgery at that point in time. At the closure of inclusion of the current study (2016), 135 transgender individuals had received early GAT since 2000.

For the current study, 22 persons could not be included because of (1) refusal to participate ($n = 5$), (2) failure to return questionnaires ($n = 12$), (3) being medically ineligible for surgery ($n = 4$), and (4) death ($n = 1$). For comparison with peers from the Dutch population, a data set of the same age, between 18 and 25 years ($N = 4020$), from a large population study on sexual health in Dutch adolescents ($N = 8250$, 12–25 years) was used.³⁴ All participants gave written informed consent. The study was approved by the research ethics committee.

Measures

Sociodemographic Data

Background information was obtained through questionnaires. Birth-assigned gender, age, current living situation, highest educational level completed, current profession or study, sexual orientation, preferred sexual orientation of their partner (“Do you want your partner to have a certain sexual orientation?”), number of partners, duration of longest relationship, time since surgery (years), and type of surgery

TABLE 2 Sexual Experiences of Young Transgender Adults During (Retrospectively Reported) and After (Current) GAT

Sexual Experience	Total Group ^a During and After GAT ^b (N = 138)				Transwomen ^a During and After GAT ^b (n = 38)				Transmen ^a During and After GAT ^b (n = 75)							
	During GAT, n (%)	After GAT, n (%)	Significance, ^c P	Effect Size, ^d pD	During GAT, n (%)	After GAT, n (%)	Significance, ^c P	Effect Size, ^d pD	During GAT, n (%)	After GAT, n (%)	Significance, ^c P	Effect Size, ^d pD	During GAT, n (%)	After GAT, n (%)	Significance, ^c P	Effect Size, ^d pD
Has been in love	n/a	100 (89.3)	n/a	n/a	n/a	35 (92.1)	n/a	n/a	n/a	65 (87.8)	n/a	n/a	n/a	65 (87.8)	n/a	n/a
Romantic relationship	n/a	85 (75.9)	n/a	n/a	n/a	24 (63.2)	n/a	n/a	n/a	61 (82.4)	n/a	n/a	n/a	61 (82.4)	n/a	n/a
French kissing	93 (83.0)	96 (85.7)	.98	n/a	31 (81.6)	33 (86.6)	.45	n/a	62 (83.8)	63 (85.1)	.572	n/a	62 (83.8)	63 (85.1)	.572	n/a
Masturbation	62 (56.4)	89 (81.7)	<.001	0.28	12 (31.6)	33 (89.2)	<.05	0.56	50 (69.4)	56 (77.8)	<.001	0.883	50 (69.4)	56 (77.8)	<.001	0.883
Petting undressed	64 (57.1)	85 (78.7)	<.001	0.22	22 (57.9)	32 (84.2)	<.001	0.08	42 (56.8)	53 (75.7)	.063	-0.06	42 (56.8)	53 (75.7)	.063	-0.06
Manual masturbation	61 (56.0)	77 (71.3)	<.05	0.16	19 (50.0)	26 (68.4)	<.05	0.18	42 (59.2)	51 (72.9)	<.05	0.14	42 (59.2)	51 (72.9)	<.05	0.14
Active ^f	23 (21.1)	56 (51.9)	<.001	0.31	6 (15.8)	26 (68.4)	<.001	0.53	17 (23.9)	30 (42.9)	<.001	0.19	17 (23.9)	30 (42.9)	<.001	0.19
Passive ^g	18 (16.2)	41 (37.6)	<.001	0.21	5 (13.2)	23 (60.5)	<.05	0.47	13 (17.8)	18 (25.4)	.063	0.07	13 (17.8)	18 (25.4)	.063	0.07
Sexual intercourse ^h																
Oral sex	49 (45.0)	61 (57.0)	<.05	0.13	17 (44.7)	21 (55.3)	<.001	0.11	32 (45.1)	40 (58.0)	<.05	0.14	32 (45.1)	40 (58.0)	<.05	0.14
Active ^f	19 (17.4)	46 (43.0)	<.001	0.25	4 (10.5)	20 (52.6)	<.001	0.42	15 (21.1)	26 (37.7)	<.001	0.16	15 (21.1)	26 (37.7)	<.001	0.16
Passive ^g	12 (10.9)	18 (16.7)	.31	n/a	8 (21.1)	13 (34.2)	.063	n/a	4 (5.6)	5 (7.1)	.97	n/a	4 (5.6)	5 (7.1)	.97	n/a
Anal sex																

CI, confidence interval; n/a, not applicable.
^a Young transgender adults at inclusion, including birth-assigned men (transwomen) and birth-assigned women (transmen).
^b Early GAT for adolescents may consist of puberty suppression, use of affirming hormones, and gender-affirmative surgery.
^c McNemar test.
^d Effect size of McNemar test, calculated by the difference in proportion.
^e 95% CI of the difference in proportion.
^f Manual or oral genital touching of another person.
^g Receiving genital touching manually or orally.
^h Sexual intercourse was defined as penile-vaginal penetration.

were all assessed (see Table 1). For the highest level of education completed, individuals were categorized into 2 groups: (1) high school basic level (prevocational and secondary vocational students) and (2) high school advanced level (secondary or preuniversity students). Sexual orientation was assessed in 4 categories based on attraction: attracted to a person of their birth-assigned gender, of the opposite gender, of either gender, or does not know yet.

Sexual Behavior

Sexual behavior was assessed by using a 21-item questionnaire directly derived and adapted from the large Dutch sexual health population study.³⁴ This enabled comparisons with the general Dutch youth population to be made. The first set of items were related to sexual and romantic relationship experiences: falling in love, romantic relationships, French kissing, solo masturbation, petting while undressed, mutual masturbation active (manual genital touching of another person), mutual masturbation passive (receiving genital touching manually), sexual intercourse (vaginal penetration with a penis), oral sex active (oral genital touching of another person), oral sex passive (receiving oral genital sex), and anal sex (giving or receiving). For each of these behaviors, participants could indicate whether they had ever experienced these behaviors before surgery and/or after surgery (eg, “Did you have experience with sexual intercourse before surgery?” and “Have you had experience with sexual intercourse since surgery?”). The answer options were dichotomous (yes or no experience). If the answer was “yes,” age at the time of the first experience was asked.

In addition to the actual experiences with sexual activities, the questionnaire included questions about sexuality-related topics: the importance of love, relationships, and

sexuality; the ability to get in touch with someone the individual likes; longest relationship; and negative sexual experiences (eg, “Has anyone ever forced you to do or allow sexual things that you did not want to do?”). Participants who had not engaged in sexual intercourse were asked to specify the reason by choosing from a list of options. Additional domains on sexual functioning were assessed by 4 questions by using a 5-point scale (from “often” to “never”). A few transgender specific answer options and items were added that were not used in the general population study (eg, negative sexual experiences due to being transgender, sexual assertiveness, competence, sexual self-esteem, and self-image).

Analyses

To describe demographic data, descriptive statistics and independent *t* tests were used. To compare mean age at the first sexual experience one-sided *t* tests were used. χ^2 tests and independent *t* tests were conducted to calculate group differences. McNemar tests were used to assess pre-post treatment differences within the same group. Effect sizes were calculated by proportions of

differences. To compare with the general population, χ^2 tests were used. Because of the explorative character of this study, a correction factor was not applied so that all possible signals in the data could be seen. To minimize recall bias in the retrospective analyses, the ages provided as the first time of the sexual experience were used to confirm that the behavior was experienced before or after surgery. No irregularities were found.

RESULTS

Sexual Experiences During and After GAT

In Table 2, we show the sexual experiences of the total sample of young transgender adults during and after GAT (puberty suppression by GnRH analogues, followed by affirming hormones and surgeries). One year after affirming surgeries, the young adults reported significant increases in experiences of all types of sexual activities, except for romantic relationships and anal sex, compared to immediately before these surgeries.

TABLE 3 Sexual Experiences of Transgender Young Adults Versus the General Population

Sexual experience	Transgender Young Adults ^a (N = 113), n (%)	General Population ^b (N = 4020), n (%)	Significance, χ^2 (df = 1)	P
Has been in love	100 (89.3)	3881 (97)	20.1	<.001
Romantic relationship	85 (75.9)	3585 (89.2)	21.5	<.001
French kissing	96 (85.7)	3724 (92.6)	9.3	<.05
Masturbation	89 (81.7)	3507 (87.2)	7.0	<.05
Petting while undressed	85 (78.7)	3705 (92.2)	41.5	<.001
Manual masturbation				
Active ^c	77 (71.3)	3255 (81.0)	11.6	<.001
Passive ^d	56 (51.9)	3237 (80.5)	65.1	<.001
Sexual intercourse ^e	41 (37.6)	3336 (83.0)	160.4	<.001
Oral sex				
Active ^c	61 (57.0)	3138 (78.1)	36.4	<.001
Passive ^d	46 (43.0)	3419 (85.1)	159.5	<.001
Anal sex	18 (16.7)	1067 (26.5)	6.4	<.05

df, degree of freedom.

^a Young transgender adults at inclusion, including birth-assigned men (transwomen) and birth-assigned women (transmen).

^b Data from a population study on sexual health in Dutch youth performed at Rutgers University.³²

^c Manual or oral genital touching of another person.

^d Receiving genital touching manually or orally.

^e Sexual intercourse was defined as penile-vaginal penetration.

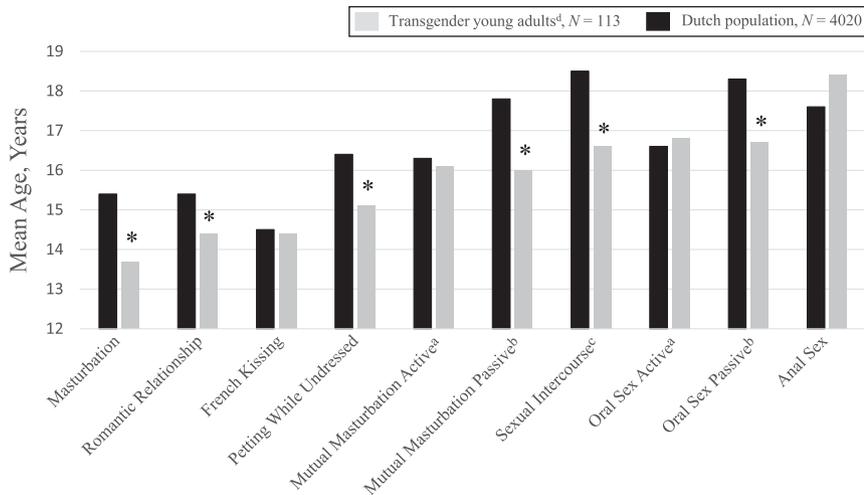


FIGURE 1

Mean age of first time sexual experience of transgender young adults Dutch population. The mean age of transgender young adults and their same-aged peers from the Dutch population when sexual activity was experienced for the first time. The mean age was analyzed for the group that did experience this sexual or romantic activity. ^a Manual or oral genital touching of another person. ^b Receiving genital touching manually or orally. ^c Sexual intercourse was defined as penile-vaginal penetration. ^d Young transgender adults, including birth-assigned men (transwomen) and birth-assigned women (transmen). * Significant difference in mean age between young transgender adults and the Dutch population: $P < .001$.

Transwomen

Compared to presurgery, young transwomen reported significantly more sexual experiences after completing GAT, except for French kissing, oral sex active (giving sex to someone else), and anal sex. The largest increase in percentages was observed in types of sexual behaviors that included the involvement of their own genitals: intercourse (from 13.2% to 60.6%), oral sex passive (receiving oral sex; from 10.5% to 52.6%), manual sex passive (from 15.8% to 68.4%), and masturbation (from 31.6% to 89.2).

Transmen

Compared to presurgery, an increase was observed in most types of sexual activity in transmen, except for French kissing, intercourse, and anal sex. The latter 2, however, were infrequently reported both during and after completing GAT. In the young transmen, the strongest increase was found in types of sexual behavior that included touching their own genitals, such as oral sex passive and manual sex passive.

Gender Differences

Transmen and transwomen were almost equally experienced (Table 2). Presurgery gender differences were observed only for masturbation, with transmen being more experienced than transwomen (31.6% vs 69.4%; $\chi^2_1 = 14.05$; $P < .001$). Post treatment, transwomen reported more experience with sexual intercourse (60.5% vs 25.4%; $\chi^2_1 = 13.05$; $P < .001$) than transmen, whereas transmen reported more experience with romantic relationships (63.2% vs 82.4%; $\chi^2_1 = 4.47$; $P < .05$) than transwomen. Analysis of the mean age at the first experiences with sexual activity revealed no gender differences.

Sexual Development and Experiences Compared With the General Population

Table 3 reveals the posttreatment sexual experiences of young transgender adults compared with their peers from the general Dutch population. The group of young transgender adults was significantly less sexually experienced than their Dutch peers.

Figure 1 reveals the mean age of the transgender young adults and the Dutch population when sexual activity was experienced for the first time. Transgender young adults were significant older than their Dutch peers when first engaging in 6 experiences: masturbation (mean = 15.4 [SD = 3.1] versus mean = 13.7; $t_{68} = 4.54$; $P < .001$), relationships (mean = 15.4 [SD = 2.1] versus mean = 14.4; $t_{85} = 4.3$; $P < .001$), petting while undressed (mean = 16.4 [SD = 2.3] versus mean = 15.1; $t_{80} = 4.96$; $P < .001$), manual sex passive (mean = 17.8 [SD = 2.1] versus mean = 16.0; $t_{47} = 5.79$; $P < .001$), oral sex passive (mean = 18.3 [SD = 2.3] versus mean = 16.7; $t_{38} = 4.3$; $P < .001$), and sexual intercourse (mean = 18.5 [SD = 2.1] versus mean = 16.6; $t_{34} = 5.3$; $P < .001$). For transgender persons, experiences with passive sex (receiving genital sexual touching orally or manually) occur later than experiences with active sex (touching the other person): manual active, mean = 16.3 (SD = 2.6), versus passive, mean = 17.8 (SD = 2.1) ($t_{47} = 57.5$; $P < .001$); oral active, mean = 16.6 (SD = 1.9), versus passive, mean = 18.3 (SD = 2.2) ($t_{38} = 50.5$; $P < .001$).

Sexual Satisfaction, Sexual Competence, and Negative Experiences

Transgender young adults value sex (92.7%; $n = 92$), love (93.7%; $n = 104$), and relationships (94.6%; $n = 105$) as moderate to very important, with no significant gender differences. Young transgender adults report being moderately to very satisfied with the frequency of sex (58.7%; $n = 37$), how good it feels (73.0%; $n = 46$), and their sex life in general (66.7%; $n = 42$). There were no gender differences.

The majority of transgender young adults manage to get in touch with a person to whom they are romantically or sexually attracted (73.9% [$n = 82$]; no gender

differences). For most of the group, the last sexual activity happened within the past month (68.8%; $n = 44$) or year (87.6%; $n = 56$). Sexual competence and assertiveness in the young adult transgender group was high: the percentage answering “often” or “always” was 82.8% for “feeling at ease during sex” ($n = 40$) and 66.6% for “I let the other person know what I like” ($n = 31$).

Of all transgender young adults, 13.6% ($n = 15$) reported negative sexual experiences, with no significant gender difference between transwomen (16.2%; $n = 6$) and transmen (12.3%; $n = 9$). In 20% ($n = 3$) of this group, being transgender was reported as a cause of the negative experience. In the general population, 17% (no number given) of female individuals and 5% (no number given) of male individuals had experienced sexual acts against their will; however, this was in the total group of 12- to 25-year-olds.

DISCUSSION

In the current study, we found that young transgender adults reported a strong increase in sexual experiences after completing early GAT, including puberty suppression, affirming hormones, and surgeries. Although the difference between them and their same-aged peers in experience was attenuated, in comparison with the Dutch population, young transgender adults were still less experienced in all types of sexual activities. Between young transmen and transwomen, hardly any differences in sexual experiences were reported. Almost all valued sex as important, and the majority was satisfied with their sex life. After the surgeries, young transgender adults who started early GAT became far more sexually active. Because sexuality is multifactorial,^{15,35,36} multiple factors could play a role.

First, one expected factor is the improvement in overall body image

and body satisfaction due to early puberty suppression (no [further] virilization in transwomen and no [further] feminizing in transmen), affirming hormones, and nongenital surgeries, such as a mastectomy.³⁷ An interesting finding in our study was that the largest increase was seen in passive types of sexual activities. Before gender-affirmative surgeries, the majority of transgender youth touched only their sexual partners’ genitals during mutual sexual activity and excluded their own genitals. After affirmative surgeries, more transgender individuals allowed their own genitals to be touched (either orally or manually, both in transmen and transwomen). It should be realized that in our sample, all transwomen had genital surgery, but the majority of transmen still had a vagina. Apparently, this increase in passive types of sexual activities can only be partially explained by the surgical alleviation of genital aversion, a key symptom of gender dysphoria.^{19,32} This highlights that body satisfaction is not only confined to the genital area.^{37,38}

Second, psychological well-being, a vital factor in the sexual behavior and feelings of transgender people⁹ and the general population,³⁹ improves steadily during early GAT.⁹ In addition, the fact that the young transgender adults had started their affirmative treatments early in their lives seemed to lead to more sexual activity compared with transgender adults from previous studies. In our group, 78% had sexual experiences with another person (defined as at least petting while undressed), and 81.7% masturbated, whereas in adult studies, sexual activity (often not defined) ranged from 29% to 91%,^{21,24,25,31} and masturbation ranged from not frequent to 89.4%.^{8,25,27,31} The increase in sexual activity of our group seems to be even more exponential than that in studies of adults after treatment, in which a variety of outcomes on sexual and

romantic activity are found, ranging from an increase in sexual activity to no change or even a decrease.^{24–30,34} These findings might suggest that early GAT, including puberty suppression, makes sexual development easier for transgender youth compared with adults. This might be due to the fact that adolescents and adults treated with GnRH analogues are described as having fewer problems passing in their experienced gender,^{40,41} which makes it easier to form a romantic relationship or find a sexual partner. Second, in different studies, transgender adolescents have been found to have better psychological functioning than transgender adults,^{10,25,31} which may have a positive impact on sexual functioning.³⁹

Despite the increase in sexual and romantic activities, transgender youth are still less experienced than their cisgender peers in all types of romantic and sexual activities. This is in line with our former study on transgender adolescents before GAT, who were even less experienced than their same-aged peers.¹⁸ It seems that many transgender youth begin their sex life after having received gender-affirmative hormones and surgeries. Thereafter, their sexual development follows the same progressive linear line from less intimate sex (eg, kissing) to more intimate sex (eg, intercourse, anal sex).¹³ One of the reasons for this late involvement in sexual activity could be that, although globally, average levels of acceptance for lesbian, gay, bisexual, transgender, intersex queer/questioning people have increased since 1980,⁴² transgender youth are still at risk for bullying⁴³ and social exclusion.^{44,45} This might negatively interfere with finding a romantic or sexual partner and, therefore, with their ability to gain sexual experience. Finally, the participants had just finished the surgical phase of medically transitioning, and future researchers

should learn how their further sexual development evolves and what factors, inhibiting and facilitating, play a role.

Young transwomen and transmen are overall equally experienced in sexual activities. Only transmen reported masturbating more before affirming surgeries (mastectomy and hysterectomy). This could be an effect of testosterone because adult studies reveal an increase in arousal, desire, and masturbation after the beginning of affirming hormones.^{22,23}

After gender-affirmative surgeries, transmen had more romantic relationships than transwomen. This might be related to the fact that gender nonconforming birth-assigned boys (transwomen) are more prone to encounter discrimination^{44,46} than gender nonconforming birth-assigned girls (transmen). This may also lead to more difficulties in finding a romantic partner during and after GAT. By contrast, transwomen had more sexual intercourse experiences than transmen. This is most likely due to the fact that for the young transmen in our sample, sexual intercourse was not applicable because they were mostly attracted to persons of their birth-assigned gender (women) and none of them

had received a phalloplasty yet (only 6 had undergone a metaoidioplasty). Sexual intercourse is thus only possible by using prostheses, and these experiences might not have been reported as intercourse.³²

The current study had some limitations. First, the data on sexuality during GAT (before surgery) were collected retrospectively. Although we tried to minimize potential recollection bias by conducting an additional analysis on the provided ages of the first experience, we could not prevent the risk of recall bias. Second, sexuality is an individual process, which we assessed quantitatively. For further research, we would like to broaden the scope on sexuality using qualitative methods to learn more about overall subjective experiences and challenges, including topics such as practicing safe sex. Third, further research should be focused on sexuality in transgender young adults who are not sexually active, persons with a nonbinary gender identity with different treatment necessities, and transgender young adults who did not receive GAT. Fourth, future research on sexuality should include the mental health status of young people. Finally, individuals

participated in our study only 1 year after surgery. It would be of great interest to conduct a longer-term follow-up study to learn about transgender adults' romantic relationships, sexuality, parenthood, and fertility into middle adulthood.

CONCLUSIONS

This study on the sexual and romantic experiences of young transgender adults during and after early GAT reveals an increase in sexual activity after gender-affirmative surgeries. Young transgender adults seem to follow the same order of sexual experiences, from less intimate to more intimate sexual behavior, as their cisgender peers, only at later ages. After affirmative surgeries, they are less experienced than their same-aged cisgender peers. For health care practitioners working with transgender youth, it is important to address sexuality and romantic relationships with all patients.

ABBREVIATIONS

GAT: gender-affirmative treatment
GnRH: gonadotropin-releasing hormone

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