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The use and correlates of illicit silicone or “fillers” in a population-based sample of transwomen, San Francisco, 2013

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Abstract

Introduction—There is a dearth of studies to quantify the use of illicit fillers by transwomen. Case studies of illicit filler injections have pointed to an array of serious health complications, including death.

Aim—The aim of this study was to determine the population prevalence of filler use among transwomen, and to identify correlations with filler use.

Methods—An analysis of data collected in 2013 with a population-based sample of 234 transwomen recruited using respondent driven sampling (RDS). We used RDS weights to conduct bivariate and multivariate analyses of correlates of filler use.

Main Outcome measures—Main outcome measures were an RDS-weighted population prevalence of filler use among transwomen and differences in demographic characteristics, transition-related care factors and self-esteem related to appearance.

Results—Weighted filler prevalence among transwomen was 16.7%. Being a transwomen between 30–49 years of age, owning/renting or living with a partner/family/friend, having had and planning to have surgery in the future and having used non-prescribed hormones were all associated with filler use. HIV was not associated with filler use.

Conclusions—This study provides the first known estimate to date of the prevalence of filler use in a population-based sample of transwomen in San Francisco. Accessing illicit fillers may be the only choice available for many transwomen due to the cost of legal surgeries and other procedures to change one’s appearance. An important next step in this research is to determine the overall prevalence and long-term consequences of filler use among transwomen, to explore how the use of fillers is protective to the safety and wellbeing of transwomen, and to find safe and affordable alternatives to this method that meets important gender-related appearance needs.

Keywords

transsexualism; transwomen; gender change procedure; silicone; complications

INTRODUCTION

A number of deaths among transgender women (transwomen) have brought attention to procedures transwomen undergo referred to as contouring, using fillers or “getting pumped” [1–3]. Subcutaneous injections of materials often called “silicone” are an illicit alternative to getting surgical implants or contouring by licensed professionals. Transwomen seek these injections to feminize their appearance with injections typically targeting the buttocks, hips, breasts, face and calves [4, 5]. Transwomen report using fillers as an alternative to legally performed and administered plastic surgery and other dermatological interventions due to comparatively rapid results and the low cost [6]. The cost of using such fillers is on an order of magnitude cheaper than plastic surgery. For instance, the average cost of a buttocks implant in the U.S. in 2012 was \$4,670, while the reported rates for “silicone” injections for transwomen range from \$300–1600 [7–10]. A qualitative analysis found factors such as poor self-image, misperceptions about silicone, discomfort in public settings, and low health insurance access to also be related to use of illicit fillers [10].

“Pumping parties” where unlicensed “pumpers” inject fillers purported to be medical grade silicone are a common way for transwomen to access injections. In reality, there is a wide range of substances that transwomen are injected with including food- or industrial-grade silicone [11]. Other viscous and non-viscous substances transwomen have been known to inject are liquid paraffin, petroleum jelly, lanolin, beeswax, flax oil, linseed oil, olive oil, tire sealant, cement glue and automobile transmission fluid [4, 5, 12]. Reports of the amount of these substances injected ranges from 2 ounces to 8 or more liters [4, 5, 13]. The FDA does not approve any of these substances for injections into humans for these purposes. The American Society for Aesthetic Plastic Surgery (ASAPS) states that liquid injectable silicone for cosmetic purposes should not be used outside legitimately approved clinical trials and should never be injected into the breasts [14]. More importantly, the volume of silicone preparations and other substances are contrary to recommendations for any legal filler injection by licensed practitioners using pure and safe substances [5]. Hence, the injection of fillers is completely outside the realm of safe and legal procedures to changes one’s appearance [10].

Serious and numerous health complications as a result of these procedures have been found in transwomen. Among many, transwomen have been found to have blood clots, edema, migrating globules, cellulitis, scarring, respiratory distress, gross disfigurement, multi-system failure, pulmonary emboli, acute pneumonitis, acute pulmonary hemorrhage, diffuse alveolar damage, acute granulomatous pneumonitis, and lymphadenitis and death [5, 10, 13, 15–17]. Complications from these injections can happen at any time. News reports have found that transwomen have died within a day of being injected with illicit fillers [8, 9, 18]. Case studies in the scientific literature range from seeing patients with complications within hours of an injection up to 24 years later [4, 5, 19]. Though research findings are limited, some studies have also suggested a possible link [20] between injection silicone and HIV risk due to non-sterile injecting equipment. Similarly, one researcher has hypothesized risk for HIV due to high engagement in sex work to pay for injection silicone and other procedures among transwomen [10].

There is a dearth of studies to quantify the use of illicit fillers by transwomen or identify factors associated with its use. Non-probability based studies of transwomen conducted over a decade ago found sample prevalence rates of 25% in Washington DC and 33% in Los Angeles [21, 22]. Given the sampling methods used for these community-based studies and the time elapsed since completion, it is difficult to determine if this behavior is highly prevalent in the population currently. Additionally, we have no information on what factors are correlated with the use of illicit fillers. Such data are imminently needed to identify strategies to mitigate the extreme morbidity and mortality associated with illicit filler injection among transwomen and implement prevention messaging and education. The purpose of this analysis was to determine the population prevalence of illicit injection of fillers among transwomen in San Francisco, California. To date, no such studies have taken a population-based approach to enumerating the prevalence of this behavior, nor have any studies identified factors related to filler use. This analysis fills a large gap in public health knowledge about this important and often deadly behavior. The ultimate goal of this study is to provide a starting point for future research and immediate prevention and harm reduction efforts to target the illicit injection of fillers among transwomen.

AIM

The aim of this study was to determine the population prevalence of filler use among transwomen, and to identify correlations with filler use.

METHODS

Study Sample and Recruitment

TEACH2 (Transwomen empowered to Advance Community Health) is the second HIV behavioral risk survey carried out with transwomen in San Francisco. The first, TEACH1, was carried out in 2010. We conducted a cross-sectional study among 234 transwomen in San Francisco from August-December 2013 using Respondent Driven Sampling (RDS) [23, 24]. The study recruited 12 ethnically/racially diverse seeds at least 18 years of age who identified as transwomen. Seeds and enrolled participants received coupons (3–5 each) to recruit through word of mouth other transwomen into the study from their respective social networks. The coupon return rate was 33.1%.

Among the 250 transwomen who were screened for eligibility, 93.6% were deemed eligible and agreed to participate. This study reached sample stability in key variables and satisfied other ideal RDS criteria [11, 12]. For example, the study had long recruitment chains (mean recruitment wave=3.4; range=0–9) and moderate homophily with respect to race/ethnicity (range: 0.05–0.47). Information from a formative assessment for TEACH1 suggested that networks of transwomen in San Francisco are strongly race / ethnicity based and this would play a key role in the sampling of a diverse transwomen —thus, stability and equilibrium was evaluated with respect to race/ethnicity. The study reached stability and equilibrium by the eighth week and ninth wave of recruitment, respectively [10].

Each study participant was screened for study eligibility before enrollment. Verbal informed consent was obtained before starting the behavioral survey. Interviewers administered

surveys using hand-held computers. All study procedures received approval from the Committee on Human Research at the University of California San Francisco and all participants provided verbal informed consent. Participants received \$50 for participation in the survey and HIV testing. Each participant received \$10 for each successful recruit up to 5 people each.

Measures

The study collected information on socio-demographics, including gender identity, race, whether the participant was born in the U.S. or not, monthly income, level of education, and housing status. The study also collected data on gender transition-related factors, including the use of silicone and other fillers. Specific questions about silicone use were the following; “Have you ever injected substances other than hormones (e.g. silicone) to enhance your gender presentation?,” “Have you injected these substances in the past 12 months?,” “What part(s) of your body have you injected these substances?,” “Have you experienced any complications as a result of injecting substances other than hormones?” Other factors related to filler use in the literature among transwomen were also collected in this study and are reported. Such factors are relationship status (i.e. in a steady relationships or not) and health insurance status. Data are also presented on whether the participants saw a doctor in the last 6 months. We also reported on factors qualitatively associated with transwomen who reported using fillers in the Wallace paper [10] such as history and plans for surgery, self-esteem related to body image, validation related to gender, and engagement in sex work. Lastly, data are presented on HIV status and whether or not participants had ever shared needles with someone else while injecting drugs.

Instant HIV testing was offered to all participants regardless of self-reported HIV status (INSTI™ HIV-1 Antibody Test, bioLytical Laboratories). Positive rapid HIV tests were confirmed using a secondary rapid finger prick test (The Clearview® HIV 1/2 STAT-PAK®, Alere). All participants who tested positive were referred to the San Francisco Department of Public Health Linkage Integration Navigation Comprehensive Services (LINCS) program which provides and coordinates comprehensive HIV for newly tested positives and known positives who are currently out of care. Data were collected with a standardized questionnaire via handheld-computer tablets.

Data Analysis

We used RDS Analysis Tool 6.0 (RDSAT; Cornell, NY) to estimate the population prevalence and 95% confidence interval of various descriptive findings, using sampling weights adjusted for homophily and network size of respondents (i.e. surrogate measures for probability of being recruited into the study). We used univariate statistics (number, percentage) to describe the prevalence of filler use among participants ever and in the past 12 months. We also describe where participants injected fillers (i.e. part of the body), and the prevalence of complications related to fillers. We also calculated the distribution of demographic characteristics, transition-related care factors and self-esteem related to appearance. To determine if there were sub-populations within the transwomen population that were more likely to access fillers, we calculated chi-square statistics to compare participants who did not report injecting fillers to those who had a history of filler injection.

All analyses were conducted using SAS version 9.1. For bivariate analysis, individualized RDS weights were exported from RDSAT and appended to the dataset in the statistical software program SAS. We then used the weights in SAS to conduct RDS weighted analysis. Statistics such as chi-squared tests are not available in RDSAT. We calculated individualized weights on the basis of filler use in RDSAT, then exported and merged them with the crude data set for bivariate analysis where chi-squared statistics were calculated to determine group differences.

RESULTS

Table 1 shows crude and RDS-weighted characteristics of transwomen in San Francisco. Overall, RDS weighting appears to have had the largest effect on race/ethnicity, gender identity, and race. Our RDS-weighted estimates suggest that the population of transwomen in San Francisco was 35.1% African American (95% confidence interval [CI] = 2.9, 47.0), 31.4% white, 23.1% Latina, 6.7% a race “other” than these main categories, and 3.8% Asian. Almost the entire sample was born in the U.S. (82.6%; 95% CI = 73.2, 89.7). The majority of transwomen were 40 years of age or older, lived below the federal poverty line (88.6%), had a high school education or more (71.1%), and 40.4% lived in a single room occupancy (SRO) or were homeless. Almost equal proportions of transwomen in our sample identified as female (48%; 95% CI = 38.0, 59.1) or transgender (46.9%; 95% CI = 36.5, 56.6). A total of 16.7% of transwomen reported ever using fillers (95% CI = 9.9, 25.2).

In our sample, a total of 33 (14%) reported ever injecting fillers, including silicone. Table 2 presents the RDS-weighted characteristics of those who reported ever using fillers. The biggest proportion of the sample were African American (40.9%) (95% CI = 10.9, 68.4), followed by Latina (33.2%), white (24%), a small group of Asians (1.6%) and 0.3% reported being a race “other” than these main categories. Almost the entire set of transwomen who reported using fillers ever lived at or below the federal poverty line (93.5%), and 39.3% had less than a high school degree (95% CI = 16.1, 66.3). More than half of the sample owned or rented their own housing (60.3%; 95% CI = 33.1, 83.0). Among those who injected, the most common places to inject were the breasts (52.4%; 95% CI = 24.7, 77.3) and face (51.4%; 95% CI = 22.8, 75.7). Almost one fifth of participants who used fillers reported having complications (18%; 95% CI = 5.3, 40.2). Only 11.1% had injected in the last year (95% CI = 0.0, 33.4).

After adjusting with RDS-weights, we found a number of significant differences between transwomen who used fillers and those who did not. Participants who reported using fillers were significantly different in that they mostly consisted of the middle age range of 30–49, with no 18–29 year olds and very few people who were 60 or older (0.2%) ($p < 0.001$) (Table 3). Participants who reported using fillers were also significantly more likely to be in stable living situations than those who did not use fillers. More transwomen who used fillers rented or owned their own place to live or lived with a partner, family or friend ($p < .001$). We did not find any significant differences by race; however, 33.2% of transwomen who reported using fillers were Latina compared to 21.1% of those who did not use fillers.

Those who had fillers were also more likely to have had gender transition-related surgery than those who had not used fillers ($p<.001$), and had higher odds of plans to have transition-related surgeries in the future than those who had not used fillers ($p<.001$). Lastly, those who had fillers were significantly more likely to have taken non-prescribed hormones than those who had not had fillers ($p=.014$). There were no differences between those who were living with HIV to those who were not. There were also no differences between those who had shared needles before and those who had not.

DISCUSSION

This study provides the first known estimate to date of the prevalence of filler use in a population-based sample of transwomen in San Francisco. The 16.7% prevalence of transwomen who reported using fillers found in this study is lower than the 29% found in a sample of 51 transyouth in Chicago in 2006 [25], and lower than 20% of a convenience study of 40 transwomen prostitutes in the Netherlands [20]. This proportion was also much lower than the 68.6% of 325 Thai transwomen who reported surgical implants or silicone injection; however, this study did not report implants and injection separately so it is impossible to tease out what proportion of transwomen had “silicone” injections. Descriptive findings as to what body parts transwomen were having injected were also consistent with the existing literature. In the Thailand, Netherlands and Brazil studies, the majority of implants and fillers were in the breasts or face just as we found in this study [20, 26, 27].

We also found that transwomen who had fillers were in less precarious housing situations in that they mostly owned or rented their own place or lived with friends, family or a partner. Housing discrimination related to transgender identity in general has been found in other studies of transwomen [21, 28, 29]. One theory as to why transwomen with fillers were less likely to be homeless or living in SROs may be due to their ability to obtain an appearance that does not transgress societal gender norms [30]. This one correlation may provide evidence for further investigating the protective effects of access to gender-related care that specifically addresses changes in physical appearance.

We also found a significant difference in that those who accessed fillers were mostly in the middle age range of 30–49. This difference may reflect a trajectory of transition. For example, young transwomen may be focused on accessing hormones earlier in their transition when they are in their teens and 20s. They may then move towards trying to achieve physical changes related to surgeries and other procedures while in their 30s and 40s. During this middle age range, transwomen may have more income allowing them to pay for fillers. At those ages, they may also be able to tolerate the side effects of such fillers better than older women. More research to investigate the relationship of age cohort to filler use are needed.

Not surprisingly, the only other factors differentiating those who used and did not use fillers were having had transition-related surgery, plans to have more in the future, and having accessed non-prescribed hormones. Wallace’s qualitative study found that stigma-related barriers to health care may put transwomen at risk of using illicit fillers [10]. Accessing non-

prescribed hormones and past and future surgery may be related to appearance goals of transwomen in San Francisco that are difficult to reach due to low health care access, especially for procedures deemed cosmetic by the medical and health insurance community. The higher odds of surgery and non-prescribed hormones for transwomen who had accessed fillers may simply represent use of additional mechanisms for obtaining appearance-related goals.

Desires around changing one's appearance and thus the use of fillers are likely related to both typical needs of every human being and those specific to transwomen. Social psychological research has found that those who are more physically attractive receive preferential treatment in a number of places, including interpersonally and in hiring [31]. For transwomen, the ability to hide one's transgender identity and/or blend more easily into mainstream society may be key to their safety, ability to obtain jobs, have romantic relationships, and mitigate mental health problems [32]. Though the physical health complications risk related to using fillers is high, in many ways, the internal and external risk to not reconciling one's gender-related appearance is equally risky. Many transwomen may use fillers as just one among many, albeit risky, option for meeting their gender-related appearance goals. An important next step in this research is to explore how the use of fillers is protective to the safety and wellbeing of transwomen, and to find safe and affordable alternatives to this method that meets important gender-related appearance needs.

This study is not without limitations. This study was not intended to investigate the use of fillers among transwomen and only asked filler questions to determine if there was a relationship with HIV risk. This study is also cross sectional in nature and we therefore cannot determine temporal trends in behavior and health outcomes. It is also difficult to determine if this sample is entirely representative of all transwomen in San Francisco due to the low educational attainment and income, in addition to the skew to older age wherein the majority of participants were over 40 years old. Despite this, we detected significant relationships between past surgeries and non-prescribed hormone use and desire for future surgeries. Thus, we were able to identify past behaviors and future intentions that together create a constellation of transition-related procedure desires likely occur among transwomen who get injection fillers. Moreover, we do recognize that illicit injection with silicone and other fillers is a highly stigmatized behavior, so there may have been some level of under-reporting in our study. However, based on the way in which transwomen were sampled in this study using methods that justify population-inferential conclusions, the 16.7% of the sample may be the most accurate population prevalence of silicone and filler injections of transwomen in San Francisco.

Despite the challenges with this study, we have provided the first population-based study of transwomen that identifies injection filler use in this community. An important next step in the medical research is to develop standards in care for addressing the effects of these injections. From a prevention perspective, alternatives to filler injection such as affordable or insurance-covered cosmetic surgical and dermatological procedures would do much to prevent the incredible complications reported in the review for this study. Such efforts in medical care and prevention are imminently needed as news coverage shows these procedures are rampant and have led to too many deaths for inaction.

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Table 1

Crude and RDS-weighted Demographic Characteristics of Trans*women, San Francisco, 2013.

Variable	Crude % (N)	RDS-weighted Prevalence Adjusted % (95% CI)
Age		
18–29	11.6 (27)	21.3 (10.3, 27.8)
30–39	16.3 (38)	14.6 (8.4, 23.1)
40–49	36.1 (84)	28.8 (22.00, 38.3)
50–59	28.8 (67)	29.0 (20.7, 39.8)
60+	7.3 (17)	6.3 (2.9, 11.6)
Gender Identity		
Male	0.00 (0)	0 (0.00)
Female	(43.8) 102	48.0 (38.0, 59.1)
Trans- female	(52.8) 123	46.9 (36.5, 56.6)
Other	(3.4) 8	5.1 (1.2, 10.0)
Race		
Latina	31.8 (74)	23.1 (14.8, 32.4)
White	24.9 (58)	31.4 (21.2, 44.1)
African American	34.8 (81)	35.1 (22.9, 47.0)
Asian	3.00 (7)	3.8 (0.5, 8.5)
Other	5.6 (13)	6.7 (1.8, 13.5)
Born in the United States		
Yes	78.1 (182)	82.6 (73.2, 89.7)
No	21.9 (51)	17.4 (10.3, 26.8)
Income		
0–417	13.3 (31)	14.2 (7.9, 21.5)
418–833	20.6 (48)	23.1 (15.4, 34.5)
834–1250	46.4 (108)	50.3 (38.5, 59.9)
1251–1667	5.2 (12)	3.6 (0.7, 7.7)
1668+	14.2 (33)	8.8 (3.6, 15.1)
Education		
<HS	28.8 (67)	28.9 (21.0, 38.4)
HS	30.5 (71)	35.9 (28.2, 45.6)
Some college	30.9 (72)	27.3 (18.3, 35.5)
College grad/grad	9.8 (23)	7.9 (3.1, 12.4)
Housing		
Own/rent	51.5 (120)	50.5 (40.1, 60.5)
Live with partner/family/friend	3.9 (9)	4.7 (1.0, 9.7)
SRO	25.8 (60)	23.0 (16.5, 31.7)

Variable	Crude % (N)	RDS-weighted Prevalence Adjusted % (95% CI)
Homeless	14.6 (34)	17.4 (9.6, 24.4)
Ever injected fillers		
Yes	14.2 (33)	16.7 (9.9, 25.2)
No	85.8 (200)	83.3 (74.8, 90.1)

Table 2

Crude and RDS-Weighted Characteristics of Trans*women who use fillers

Variable	Crude % (N)	RDS-weighted Adjusted % (95% CI)
Age		
18–29	0.0 (0)	0.0 (0.0, 0.0)
30–39	24.2 (8)	32.4 (9.5, 66.7)
40–49	45.5 (15)	36.7 (10.9, 68.2)
50–59	27.3 (9)	30.8 (4.6, 52.6)
60+	3.0 (1)	0.2 (0.0, 0.9)
Gender Identity		
Male	0.0 (0)	0 (0.0)
Female	36.4 (12)	57.3 (30.2, 83.2)
Trans- female	63.6 (21)	42.7 (17.2, 68.5)
Other	0.0 (0)	0 (0.0)
Race		
Latina	57.6 (19)	33.2 (14.4, 63.0)
White	18.2 (6)	24.0 (3.0, 43.4)
African American	18.2 (6)	40.9 (10.9, 68.4)
Asian	3.0 (1)	1.6 (0.0, 5.1)
Other	3.0 (1)	0.3 (0.0, 1.0)
Born in US		
Yes	63.6 (21)	79.2 (54.8, 95.7)
No	36.4 (12)	20.8 (4.3, 45.2)
Income		
0–417	9.1 (3)	7.0 (0.0, 16.4)
418–833	30.3 (1)	22.3 (6.5, 50.6)
834–1250	39.4 (13)	64.2 (37.9, 85.6)
1251–1667	0.0 (0)	0.0 (0.0, 0.0)
1668+	18.2 (6)	6.4 (0.1, 13.6)
Education		
<HS	36.4 (12)	39.3 (16.1, 66.3)
HS	21.2 (7)	41.0 (7.4, 64.0)
Some college	27.3 (9)	11.5 (2.8, 29.4)
College grad/grad	15.2 (5)	8.2 (0.4, 26.1)
Housing		
Own/rent	54.6 (18)	60.3 (33.1, 83.0)
Live with partner/family/friend	3.0 (1)	15.5 (0.0, 36.8)
SRO	36.4 (12)	18.9 (7.5, 41.3)

Variable	Crude % (N)	RDS-weighted Adjusted % (95% CI)
Homeless	0.0 (0)	0.0 (0.0, 0.0)
Of those who injected, where injected?		
Breast BREASTS	30.3 (10)	52.4 (24.7, 77.3)
Face FACE	42.4 (14)	51.4 (22.8, 75.7)
Buttocks BUTT	36.4 (12)	21.9 (6.6, 46.1)
Hips HIPS	48.5 (16)	26.6 (11.0, 53.5)
Thighs THIGHS	15.2 (5)	5.1 (0.0, 15.8)
Other OTHERPART	12.1 (4)	2.6 (0.0, 7.3)
Of those who injected, complications from injecting fillers COMPLICATION		
Yes	30.3 (10)	18.0 (5.3, 40.2)
No	69.7 (23)	82.0 (60.2, 94.5)
Injected in past 12 mos		
Yes	9.1 (3)	11.1 (0.0, 33.4)
No	90.9 (30)	88.9 (66.6, 100.0)

Table 3

RDS-weighted bivariate associations with filler use among trans*women, San Francisco, 2013.

Variable	Adjusted Participants who did not report using fillers %	Adjusted Participants who reported using fillers %	p-value
Age			0.0002
18–29	25.7	0.0	
30–39	11.1	32.4	
40–49	25.9	36.7	
50–59	29.3	30.8	
60+	8.0	0.2	
Gender Identity			0.1677
Male	0.0	0.0	
Female	45.4	57.3	
Trans- female	48.3	42.7	
Other	6.3	0.0	
Race			0.1731
Latina	21.1	33.2	
White	31.4	24.0	
Black	35.4	40.9	
Asian	4.3	1.7	
Other	7.7	0.3	
Born in US			0.5436
Yes	83.2	79.2	
No	16.8	20.8	
Income			0.2511
0–417	16.1	7.0	
418–833	23.7	22.3	
834–1250	47.2	64.3	
1251–1667	4.1	0.0	
1668+	8.9	6.4	
Education			0.0773
<HS	25.6	39.3	
HS	36.0	41.0	
Some college	30.6	11.5	
College grad/grad	7.7	8.2	
Housing			0.0001
Own/rent	49.2	60.3	

Variable	Adjusted Participants who did not report using fillers %	Adjusted Participants who reported using fillers %	p-value
Live with partner/family/friend	3.3	15.5	
SRO	25.1	18.9	
Homeless	22.4	0.0	
Relationship status			0.8237
Yes	23.8	25.5	
No	76.2	74.5	
Health insurance			0.6462
Yes	85.6	88.5	
No	14.4	11.5	
Seen a doctor in the last 6 mos			0.1019
Yes	89.6	80.3	
No	10.4	19.7	
Engagement in sex work			0.2714
Yes	13.2	19.9	
No	86.9	80.1	
Has had transition-related surgeries SURGERY			<0.0001
Yes	19.2	52.3	
No	80.8	47.7	
Plans on having more surgeries			<0.0001
Yes	6.9	33.9	
No	93.1	66.1	
Has taken non-prescribed hormones			0.0140
Yes	41.2	62.7	
No	58.8	37.3	
Satisfaction with body appearance			0.5968
Yes	77.8	81.5	
No	22.3	18.5	
Feel they pass as the gender with which they identify			0.4765
Yes	82.4	87.0	
No	17.6	13.0	
Passing as the gender with which they identify is important to self esteem			0.0579
Yes	73.1	58.2	
No	26.9	41.8	

Variable	Adjusted Participants who did not report using fillers %	Adjusted Participants who reported using fillers %	p-value
Perceived as attractive important to self esteem			0.0445
Yes	77.1	61.9	
No	22.9	38.1	
Passing as the gender with which they identify is important to their safety			0.2031
Yes	79.6	88.4	
No	20.4	11.6	
Sexual advances validate gender			0.5108
Yes	61.0	55.3	
No	39.0	44.7	
Injected any drugs before			0.7990
Yes	37.6	35.5	
No	62.4	64.5	
HIV status			0.1530
Positive	37.3	25.3	
Negative	62.7	74.7	
Used needles that may have already been used			0.7097
Yes	1.9	2.8	
No	98.1	97.2	