

ORIGINAL RESEARCH—INTERSEX AND GENDER IDENTITY DISORDERS

Long-term Assessment of the Physical, Mental, and Sexual Health among Transsexual Women

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ABSTRACT

Introduction. Transsexualism is the most extreme form of gender identity disorder and most transsexuals eventually pursue sex reassignment surgery (SRS). In transsexual women, this comprises removal of the male reproductive organs, creation of a neovagina and clitoris, and often implantation of breast prostheses. Studies have shown good sexual satisfaction after transition. However, long-term follow-up data on physical, mental and sexual functioning are lacking. **Aim.** To gather information on physical, mental, and sexual well-being, health-promoting behavior and satisfaction with gender-related body features of transsexual women who had undergone SRS.

Methods. Fifty transsexual women who had undergone SRS ≥ 6 months earlier were recruited.

Main Outcome Measures. Self-reported physical and mental health using the Dutch version of the Short-Form-36 (SF-36) Health Survey; sexual functioning using the Dutch version of the Female Sexual Function Index (FSFI). Satisfaction with gender-related bodily features as well as with perceived female appearance; importance of sex, relationship quality, necessity and advisability of gynecological exams, as well as health concerns and feelings of regret concerning transition were scored.

Results. Compared with reference populations, transsexual women scored good on physical and mental level (SF-36). Gender-related bodily features were shown to be of high value. Appreciation of their appearance as perceived by others, as well as their own satisfaction with their self-image as women obtained a good score (8 and 9, respectively). However, sexual functioning as assessed through FSFI was suboptimal when compared with biological women, especially the sublevels concerning arousal, lubrication, and pain. Superior scores concerning sexual function were obtained in those transsexual women who were in a relationship and in heterosexuals.

Conclusions. Transsexual women function well on a physical, emotional, psychological and social level. With respect to sexuality, they suffer from specific difficulties, especially concerning arousal, lubrication, and pain. **Weyers S, Elaut E, De Sutter P, Gerris J, T'Sjoen G, Heylens G, De Cuypere G, and Verstraelen H. Long-term assessment of the physical, mental, and sexual health among transsexual women. J Sex Med 2009;6:752–760.**

Key Words. Gender Identity; Sexual Behavior; Transsexualism

Introduction

Gender identity disorder (GID) is a condition in which a person feels significant discomfort with the gender he or she was born with and rather identifies with, and feels a sense of belonging to, the First and second author equally contributed to this manuscript.

opposite gender. The most intense gender incongruity is observed with transsexualism, a condition that will eventually force most patients to pursue sex reassignment surgery (SRS) when amenable [1].

In male-to-female (MTF) transsexuals—denoted “transsexual women”—SRS involves removal of the testes and penis, creation of a neovagina and clitoris, and often implantation of

breast prostheses. In Belgium, the prevalence of MTF transsexualism is estimated at 8 per 10,000 males [2].

Since the inception of our gender team (Ghent University Hospital) over 300 MTF transsexuals were treated through a multidisciplinary approach with SRS. For the creation of the neovagina, we used the inverted penile skin technique to line a newly created space between the pars fixa of the urethra and the rectum. A small part of the glans penis with its neurovascular pedicle is preserved to allow for the construction of the neoclitoris. The few studies available indicate that adequate genital sensitivity and reassuring sexual satisfaction can be expected after transition with this technique [3–5]. However, long-term follow-up data on sexual improvement and whether transsexual women experience feelings of regret later on are generally lacking.

Aims

We gathered information on physical, mental, and sexual well-being, health-promoting behavior and systemic disease, and we assessed satisfaction with sex life and with gender-related body features. We also compared sexual functioning and the general health of transsexual women with that of published reference populations.

Methods

Study Population

Dutch-speaking transsexual women who underwent SRS at least 6 months before recruitment and who consulted a member of the gender team for treatment or follow-up during 2006 were invited by mail to participate in the study ($N = 70$). Because of the low prevalence of MTF transsexualism, we aimed for a sample of 50 individuals, considered as representative of the catchment area. After 4 weeks of recruitment, the required sample size was reached. Seventeen women did not respond, while three women declined participation because of their unwillingness to be reminded of their GID. A study of the medical records of nonresponders and nonparticipants revealed that a volunteering bias may have been unlikely: we found non-significant differences in age, interval since surgery, psychiatric morbidity, operative techniques and complications between the study population and nonparticipating individuals.

Study Procedures

After informed consent was obtained, all women completed the study protocol between March and June 2007. The study was conducted in accordance with the recommendations of the Declaration of Helsinki and was approved by the Ethical Committee (EC number 2006/375).

Main Outcome Measures

Physical and Mental Health

Self-reported physical and mental health was measured using the Dutch version of the Short-Form-36 Health Survey (SF-36). The SF-36 comprises 36 questions with standardized response choices, organized into eight multi-item scales: physical functioning, role limitations due to physical health problems, bodily pain, general health perceptions, vitality, social functioning, role limitations due to emotional problems, and general mental health, respectively. We used the “standard version”, employing a 4-week time frame. All raw scale scores were linearly converted to a 0–100 scale, with higher scores indicating higher levels of functioning or well-being [6–8]. Internal consistency with the SF-36 was high (Cronbach's $\alpha = 0.83$).

Body Image and Perception by Others

Transsexual women were asked to score on a visual analog scale (VAS) from 0 to 10 the importance attributed to, and satisfaction obtained with, several gender-related bodily features, i.e., voice, facial hair, body hair, breasts, and genitals. Similarly, “satisfaction with their female appearance” as self-perceived and as perceived by others was also scored. A VAS is a measurement device designed to measure a characteristic or attitude believed to range across a continuum of values which is not directly measurable [9].

Sexual Functioning

Sexual functioning was assessed using the Dutch version of the Female Sexual Function Index (FSFI). FSFI is one of the few validated questionnaires for which a Dutch version is available. It is a brief multidimensional self-reporting questionnaire consisting of 19 items assessing sexual desire, arousal, lubrication, orgasm and sexual satisfaction over the past 4 weeks. All FSFI domains yield a computed maximum subscale score of 6, resulting in an overall maximum score of 36. Higher scores indicate a better level of functioning [10–13]. Internal consistency with the FSFI was high (Cronbach's $\alpha = 0.96$).

In addition to both standardized questionnaires, the following items were enquired about: personal and family medical history, sexual orientation, importance attributed to sex, quality of relationships, necessity and desirability of gynecological exams, and concerns about health and feelings of regret concerning gender transition. A fasting blood sample was taken to determine serum concentrations of estradiol, testosterone and sex hormone-binding globulin (SHBG).

Sexual orientation before SRS was retrieved from patient files for 47 participants.

Statistical Analysis

Distributions are summarized through means with standard deviations (SD) when the parametric assumption proved valid. Correlations were calculated under the parametric assumption as Pearson's correlation coefficients (r). Distributions between groups were compared with ordinary χ^2 tests, or in the case of non-parametric distributions, with the Mann-Whitney and Kruskal-Wallis tests. Internal consistency within a set of items was assessed through Cronbach's alpha metric. Hierarchical cluster analysis was performed allowing the creation of four clusters to identify distinct groups according to inter-patient agreement among multiple item tests. Statistical significance was accepted at the two-tailed $\alpha = 0.05$ significance level. All analyses were performed using SPSS v15.0 (SPSS Inc., Chicago, Illinois, USA) software.

Results

Patient Characteristics

Patient characteristics, including basic demographics and personal and family medical history, are summarized in Table 1.

Physical and Mental Health and Health-Seeking Behavior

Some indicators of health-seeking behavior are listed in Table 1.

The SF-36 questionnaire was completed by all but one study participant ($N = 49$). Women involved in a relationship ($N = 27$) tended to show similar physical and mental component summary scores compared with transsexual women not currently involved in a relationship ($N = 23$), although women in a relationship scored higher for vitality ($P = 0.049$), social functioning ($P = 0.008$) and mental health ($P = 0.025$). Overall

Table 1 Patient characteristics and health-seeking behavior

Age—years (mean \pm SD)	43.06 \pm 10.42
Interval since vaginoplasty—months (mean \pm SD)	75.46 \pm 77.16
Body mass index (BMI)—kg/m ² (mean \pm SD)	25.30 \pm 5.37
Smoking years (mean \pm SD)	17.40 \pm 11.48
Smoking currently	18 (36%)
Ever smoked	31 (62%)
Regular sport	20 (40%)
Chronic disease	13 (26%)
Family history of thrombosis	11 (22%)
Family history of breast cancer	6 (12%)
Estradiol—pg/dL (median, IQ range)	49.13 (28.60–96.17)
Testosterone—ng/dL (median, IQ range)	29.57 (21.45–38.24)
Sex hormone-binding globulin (SHBG)—mmol/L (median, IQ range)	66.09 (47.76–107.36)
Breast augmentation	48 (96%)
Vocal cord surgery	20 (40%)
Facial feminising surgery	18 (36%)
Cricoid reduction performed	15 (30%)
History of thrombosis	4 (8%)
Use of estrogen therapy	47 (94%)
Use of anti-androgens	2 (4%)
Engaged in a relationship	27 (54%)
Quality of this relationship (median, IQ range)	9 (8–10)
Heterosexual orientation (= attracted to men)	22 (44%)
Homosexual orientation (= attracted to women)	11 (22%)
Bisexual orientation	14 (28%)
Not sexually interested	3 (6%)
Importance of sex in a relationship—0–10 score (median, IQ range)	6 (5–9)
Has a general practitioner	47 (94%)
Has no problem with consulting this GP with urogynecological problems	41 (87%)
Would prefer consulting gynaecologist with urogynecology problems	37 (74%)
Would prefer consulting gynecologist specializing in gender disorders	23 (46%)
Worries about their newly created genital organs	29 (58%)
Worries about continuous use of estrogens	21 (45%)
Has ever consulted a gynecologist	2 (4%)
Thinks a regular gynecological check-up is necessary	46 (92%)
Thinks a regular gynecological exam is a confirmation of femininity	33 (66%)

Unless otherwise specified, results are shown as N (%).
IQ = interquartile.

SF-36 scores were not found to be significantly different from those obtained in a large sample of Dutch-speaking women in the Netherlands and in a large cohort of American women, respectively (Table 2) [8].

When study participants were asked to compare their current general health status with their health status 1 year prior to the study, it was considered unchanged. However, a significant improvement in self-perceived general health occurred in patients

Table 2 SF-36 scores compared to a general Dutch and American Sample (Aaronson et al. 1998) [8]

	Transsexual women (N = 50) Mean \pm SD	Dutch women (N = 766) Mean \pm SD	P	American women (N = 1,412) Mean \pm SD	P
Physical functioning	74.8 (\pm 22.1)	80.4 (\pm 24.2)	0.078	81.5 (\pm 24.6)	0.036
Role-physical	82.7 (\pm 31.1)	73.8 (\pm 38.5)	0.052	77.8 (\pm 36.2)	0.281
Bodily pain	68.8 (\pm 29.9)	71.9 (\pm 23.8)	0.462	73.6 (\pm 24.3)	0.258
General health	65.4 (\pm 21.2)	69.9 (\pm 20.6)	0.142	70.6 (\pm 21.5)	0.091
Vitality	65.3 (\pm 18.5)	64.3 (\pm 19.7)	0.704	58.4 (\pm 21.5)	0.011
Social functioning	81.3 (\pm 23.9)	82.0 (\pm 23.5)	0.825	81.5 (\pm 23.7)	0.941
Role-emotional	77.6 (\pm 35.0)	78.5 (\pm 35.7)	0.850	79.5 (\pm 34.4)	0.698
Mental health	70.5 (\pm 19.2)	73.7 (\pm 18.2)	0.303	73.3 (\pm 18.7)	0.303

who underwent SRS over the past year ($r = 0.367$, $P = 0.009$). In answer to the question as to whether they ever regretted SS, 96% of transsexual women (N = 48) answered “never” while only two (4%) indicated “sometimes.”

Body Image and Perception by Others

Satisfaction with gender-related bodily features, with their “self-image as women,” and with their “appearance as a woman as appreciated by others” is depicted in Figure 1.

Relationship and Sexual Functioning

Data on sexual orientation and relationship characteristics are summarized in Table 1. A putative association between having a relationship and sexual orientation for the entire study group marginally failed to reach significance ($P = 0.055$).

However, transsexual women with strictly heterosexual and homosexual orientation had an equal likelihood of currently being involved in a relationship (68.2% and 63.6%), whereas women with bisexual orientation tended to be less frequently involved in a relationship (35.7%), although this was not found to be statistically significant ($P = 0.285$).

Of the study participants with documented sexual orientation before SRS (N = 47), 74% did not show a change in sexual orientation after SRS, whereas one in four did report a change in their choice of sex partner, without a clear tendency to the direction of this change. Altered sexual orientation was not significantly related to any FSFI-related sexual functioning index (data not shown).

The importance attributed to sex in a relationship was significantly associated with sexual orien-

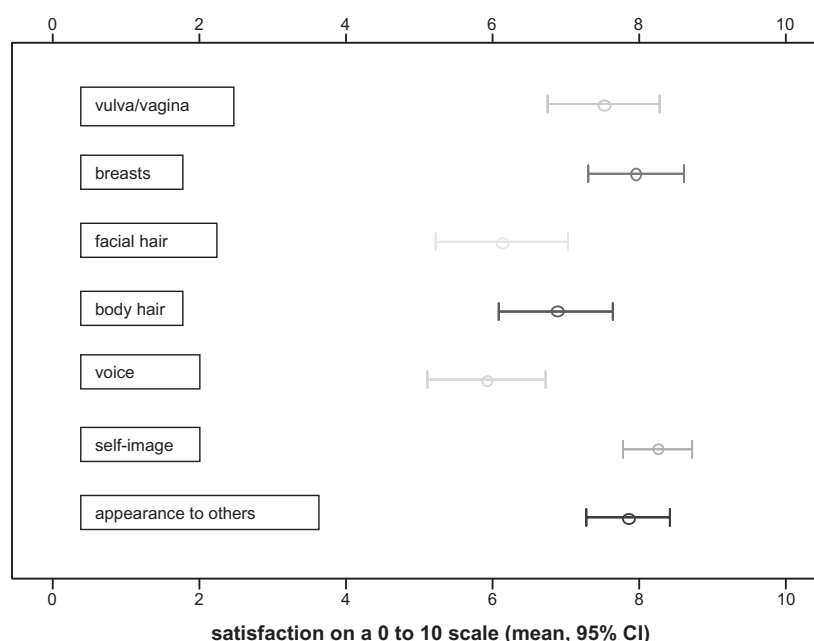


Figure 1 Satisfaction with several gender-related bodily features, self-image, and appearance to others.

Table 3 FSFI sub-domain and total score

FSFI (N = 50)	Mean \pm SD
Desire	3.12 \pm 1.47
Arousal	2.95 \pm 2.17
Lubrication	2.39 \pm 2.29
Orgasm	2.82 \pm 2.29
Satisfaction	3.46 \pm 1.57
Pain	2.21 \pm 2.46
Total score	16.95 \pm 10.04

FSFI = female sexual function index.

tation, being highest for heterosexual and lowest for homosexual women ($P = 0.016$).

Overall FSFI scores and the six component scores were obtained from all women (Table 3).

Cluster Analysis FSFI

Because of the intricate relationship between various domains pertaining to sexual functioning as covered by the FSFI, we attempted through hierarchical cluster analysis to identify distinct subgroups of transsexual women with specific patterns of sexual dysfunction (Table 4). Through these means, we believe to have identified four distinct groups that score significantly different compared with one another on several FSFI sub-domains. A first cluster was associated with an overall low FSFI score due to poor scores on each sub-domain but with few pain complaints. A second cluster was also characterized by an overall low score; however, it differed from cluster one by pronounced elevated pain scores. Finally, a third and a fourth cluster showed rather good FSFI scores, yet cluster three is accompanied by a low degree of satisfaction associated with high pain scores.

Correlates of Sexual Functioning

A limited number of potential correlates of the total FSFI scores were further explored. Positive correlations were found between overall FSFI

score and sexual satisfaction, and particularly with general health perception ($r = 0.302$; $P = 0.033$ and $r = 0.353$; $P = 0.012$). Also, we found a correlation between total FSFI score and satisfaction with the appearance as a female as perceived by others ($r = 0.463$, $P = 0.001$).

A large difference in total FSFI scores was observed according to relationship status (Mann-Whitney test $P = 0.001$), i.e., women currently involved in a relationship presented with a median score of 22.90 (interquartile [IQ] range 13.10–29.30) as compared with a median of 13.20 (IQ range 4.00–18.30) among women who reported not being in a relationship. A difference in FSFI scores was also found between transsexual women with differing sexual orientation (Kruskal-Wallis $P = 0.003$). Subjects with a heterosexual orientation reported the highest total score (median FSFI = 23.70, IQ range 15.85–29.80), while participants with a homosexual orientation presented with the lowest total score (median FSFI 10.80, IQ range 4.20–15.60). Those who were bisexually orientated obtained an intermediate total score (median FSFI = 13.70, IQ range 11.83–23.80).

No relation was found between estradiol levels and mode of estrogen administration on the one hand and testosterone levels and FSFI scores on the other hand, despite SHBG levels indicating continuous estrogen intake (data not shown).

Comparison with Published

Reference Populations

In comparison with a group of Dutch women without sexual complaints [13], transsexual women in our study scored significantly worse on all FSFI sub-scores (Table 5). Rather, the mean FSFI scores of transsexual women roughly equaled those of women in the aforementioned study with sexual problems. Transsexual women involved in a heterosexual relationship however, presented with a similar level of sexual functioning as women without sexual complaints.

Table 6 shows the raw FSFI scores of our transsexual lesbian sample (64% engaged in a relationship) as compared with a group of American lesbian women (83% engaged in a relationship) [14]. The raw FSFI scores of the transsexual, lesbian women are significantly lower than those of non-transsexual lesbian women, though no difference occurred with respect to sexual satisfaction. Compared with non-transsexual women, lesbian transsexuals scored particularly low on arousal, lubrication and sexual pain.

Table 4 Cluster analysis on FSFI

	FSFI clusters			
	1 (N = 5)	2 (N = 24)	3 (N = 6)	4 (N = 15)
Desire	–	–	+	+
Arousal	–	–	+	+
Lubrication	–	–	+	+
Orgasm	–	–	+	+
Satisfaction	–	–	–	+
Pain	+	–	=	+
FSFI_TOT	–	–	+	+

FSFI = female sexual function index; + = better than average; –, average; – = worse than average.

Table 5 Raw domain and total Female Sexual Function Index scores compared with a group of Dutch women with and without sexual problems (ter Kuile et al. 2006) [13]

	ter Kuile et al. (2006) With sexual problems N = 234 Mean \pm SD	Transsexual women (total) N = 50 Mean \pm SD	P	Transsexual women (heterosexual in a relation) N = 15 Mean \pm SD	P
Desire	4.5 \pm 2.0	5.2 \pm 2.46	0.050	6.87 \pm 2.13	0.001
Arousal	10.1 \pm 6.3	9.84 \pm 7.25	0.801	14.67 \pm 4.40	0.001
Lubrication	11.4 \pm 7.4	7.98 \pm 7.64	0.003	13.60 \pm 6.14	0.187
Orgasm	8.1 \pm 5.7	7.04 \pm 5.74	0.198	11.53 \pm 3.44	0.002
Satisfaction	8.0 \pm 4.0	8.66 \pm 3.93	0.240	12.00 \pm 3.09	<0.001
Pain	2.0 \pm 4.3	5.52 \pm 6.14	<0.001	11.40 \pm 4.58	<0.001
Total	45.4 \pm 24.0	44.24 \pm 27.42	0.766	70.07 \pm 18.74	<0.001

	ter Kuile et al. (2006) Without sexual problems N = 108 Mean \pm SD	Transsexual women (total) N = 50 Mean \pm SD	P	Transsexual women (heterosexual in a relation) N = 15 Mean \pm SD	P
Desire	6.7 \pm 1.3	5.2 \pm 2.46	<0.001	6.87 \pm 2.13	0.767
Arousal	17.6 \pm 2.8	9.84 \pm 7.25	<0.001	14.67 \pm 4.40	0.022
Lubrication	19.0 \pm 3.2	7.98 \pm 7.64	<0.001	13.60 \pm 6.14	0.004
Orgasm	12.8 \pm 2.8	7.04 \pm 5.74	<0.001	11.53 \pm 3.44	0.176
Satisfaction	13.4 \pm 2.1	8.66 \pm 3.93	<0.001	12.00 \pm 3.09	0.102
Pain	14.2 \pm 1.9	5.52 \pm 6.14	<0.001	11.40 \pm 4.58	0.033
Total	83.7 \pm 10.7	44.24 \pm 27.42	<0.001	70.07 \pm 18.74	0.014

Discussion

Physical and Mental Health and Health-Seeking Behavior

While the medical profession is generally deemed to be rather unfamiliar with transsexualism, it is certainly reassuring that transsexual women were actually found to have confided in a family physician or a gynecologist even in the case of more delicate, gender-related problems. The majority of patients surveyed also believe that a regular, gynecological check-up, preferably by a gynecologist specializing in transsexualism, is warranted. Overall, this probability sample of Belgian transsexual women perceived their general health

status, including physical, mental, and social well-being as assessed by the SF-36 Health Survey, as rather good. As a matter of fact, we found no significant differences in the general health status as reported by women in published population-based samples [8], which was much in accordance with a previous study in which no differences in psychological and physical complaints between transsexuals and the general Belgian population were found [15]. Interestingly, self-perceived general health status was found to have significantly improved within the year following SRS, and none of the transsexual women openly regretted SRS, a finding that supported evidence from earlier studies [15–17]. Women currently involved in a steady relationship reported significantly better scores for the SF-36 sub-domains vitality, social functioning, and mental health as compared with single transsexual women. This confirms the well-known relationship between general health and the existence of an intimate partner relationship [18,19].

Body Image and Perception by Others

It is further reassuring that transsexual women in this study were, on average, very satisfied with their womanhood, as is apparent from their self- and peer-perceived body image, though the aspect

Table 6 Raw domain and total Female Sexual Function Index scores compared a group of American lesbian women (Tracy and Junginger) [14]

	Tracy and Junginger N = 350 Mean \pm SD	Transsexual women (lesbian) N = 11 Mean \pm SD	P
Desire	7.4 \pm 2.1	3.91 \pm 2.34	0.027
Arousal	16.7 \pm 4.7	5.18 \pm 7.03	0.012
Lubrication	17.4 \pm 4.7	2.72 \pm 4.22	<0.001
Orgasm	12.1 \pm 3.8	3.91 \pm 4.81	0.017
Satisfaction	11.4 \pm 3.5	8.27 \pm 3.61	0.162
Pain	12.0 \pm 4.9	3.27 \pm 5.73	0.014

of voice, bodily hair, and facial hair tended to be overall less satisfactory post-transition than other gender-related bodily aspects. This high degree of comfort with gender readjustment is consistent with current standards of treatment according to the World Professional Association for Transgender Health (WPATH). We did not assess whether an autogynephilia component may have impinged on these findings, although it could serve as a possible explanation here because a recent article of Veale et al. [20] found one in three transsexual women could be classified as autogynephilic.

Relationship and Sexual Functioning

Female sexual functioning was, albeit incompletely assessed with the FSFI instrument, less optimal than might be expected, and overall FSFI scores were actually found to approximate those obtained in non-transsexual women eliciting sexual complaints. Transsexual women in a heterosexual partnership primarily reported problems with arousal, lubrication and pain, although data on desire, the attainment of orgasm, and most importantly sexual satisfaction were more in line with those obtained from non-transsexual heterosexual women without sexual complaints. Elaut et al. [21] also previously observed the absence of a difference in sexual desire between transsexual women and biological women, but found a more pronounced sexual dissatisfaction in transsexual women, possibly resulting from the use of different measurement instruments.

Sexual functioning and satisfaction as assessed by the FSFI clearly differed with respect to sexual orientation, because women with a homosexual preference presented with markedly lower sexual functioning scores as compared with women with heterosexual or bisexual preference. Interestingly, alteration of sexual orientation post-transition was observed in one in every four transsexual women. In a recent article, Brett et al. [22] report on a group of voluntarily castrated males of whom a third identify as transsexual. Although this population is not completely comparable with the present sample, a similar number of participants (22%) changed sexual orientation after castration in comparison with the current number that changed sexual orientation after SRS (26%). A post-transition change in the choice of sexual partner was however not related to sexual functioning or satisfaction scores. Nevertheless, as sexual functioning and satisfaction were also highly dependent on relationship status, and relationship status in turn was related to sexual orien-

tation, the direction of these associations remains to be established. Yet, it cannot be ignored that homosexual transsexual women were as likely to be involved in a relationship as heterosexual women, despite still presenting with the worst FSFI scores. Furthermore, lesbian transsexual women were found to have significantly worse sexual functioning indices as compared with a historical cohort of non-transsexual lesbian women. It may be added that transsexual lesbian women also attributed the lowest importance to sex as compared with the remainder of transsexual women in this series. While this finding may be a result of the inadequacy of the FSFI to properly measure sexual functioning and satisfaction in this particular group of women, these findings certainly warrant further scrutiny.

Also noteworthy is that transsexual women who indicate a higher degree of satisfaction with their appearance also report better sexual functioning. Hoyt and Kogan found a similar result in their American sample: in particular, both men and women who were more dissatisfied with their body appearance were also less content with their sex lives [23]. Finally, a cluster analysis revealed four distinct patterns of sexual functioning in transsexual women. To our knowledge, no previous study had identified such patterns until now.

With respect to the limitations of this study, a first potential source of bias lies in the choice of the FSFI questionnaire. FSFI may not be the optimal tool to assess sexual functioning in a transsexual population. In the original FSFI publication [11], the control group consisted of "women engaged in a stable heterosexual relationship". Because the method section of this article mentions that "questions were designed to be suitable for use in a heterosexual as well as homosexual population," the authors selected this questionnaire to evaluate the sexual functioning of this diverse group. Considering the very specific sexual complaints of transsexual women, the FSFI questionnaire may not be unequivocally suitable for this population. More specifically, with only the data of the FSFI available, we do not know whether the participants reporting problems with lubrication and pain, specifically experience those problems during penile insertion. Similarly, we do not know if those problems are better or worse during other sexual activities (insertion of dildos, fingers, etc.).

Also, the reference period in the study of Tracy and Junginger was increased to 6 months compared with the 4 weeks as proposed in the original FSFI article, which misrepresents the sexual func-

tioning reported in this lesbian American sample [14]. Finally, a potential bias lies in comparing our group of transsexual women with groups of women from other publications. Nevertheless, because there are so few published series, we think that comparing these different populations has some value.

Conclusion

In conclusion, our sample of transsexual women functions well on a physical, emotional, psychological, and social level. Only with respect to sexuality do transsexual women appear to suffer from specific difficulties, especially concerning arousal, lubrication and pain. These difficulties are inherent to the neovagina created in these women. For the first time, a connection between psychological and sexual functioning was established in transsexual women. Future research on the sexual functioning of this population should pay attention to their specific experiences. A modification of the FSFI adapted to the actual sexual practices (penile insertion, use of dildos or other structures, oral sexual practices etc.) of this population is needed to fully comprehend the sexual difficulties observed in this population.

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