

Sociodemographic, Clinical, and Psychiatric Characteristics of Transsexuals from Spain

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Abstract The aim of this study was to examine the characteristics of transsexuals from Spain. A total of 252 consecutive applicants for sex reassignment were evaluated using a standardized semistructured clinical interview and the Mini International Neuropsychiatric Interview (Spanish Version 5.0.0) to record demographic, clinical, and psychiatric data. Transsexualism was diagnosed in 230 patients, with a male to female (MF)/female to male (FM) ratio of 2.2:1. Transsexual patients frequently had low employment status, lived with their parents, and mainly had a sexual orientation toward same-sex partners. The most frequent psychiatric diagnoses were adjustment disorder and social phobia in both groups, and alcohol and substance-related disorders in the MF group. MF transsexuals were older than FM transsexuals when requesting sex reassignment, but did not differ in age when starting hormonal therapy (often on their own); fewer MFs were in employment requiring high educational qualification, more were non-Spanish natives, and more had previous and current histories of alcohol and substance abuse or dependence. The basic characteristics of transsexuals from Spain were similar to those of other European countries, except for the higher proportion of patients living with

their parents and the higher proportion of MFs who reported same-sex sexual orientation compared with previous studies.

Keywords Transsexualism · Gender identity disorder · Sexual orientation · Psychiatric comorbidity · Spain

Introduction

The results of epidemiological and clinical research on transsexualism have been published in several countries. Descriptive data from Australia, Belgium, Canada, Denmark, Germany, The Netherlands, Northern Ireland, Norway, Poland, Singapore, Sweden, Switzerland, United Kingdom, United States, and the former Yugoslavia have shown differences in sex ratio, sociodemographic and clinical features, and psychiatric comorbidity (Table 1). Differences in these features have also been reported between male to female transsexuals (MFs) and female to male transsexuals (FMs). Several studies have found that FMs have more stable occupations, are better adjusted socially, and present less psychopathology than MFs (for a review, see Lothstein, 1984; Michel, Mormont, & Legros, 2001). However, there is little information regarding the presentation of gender identity disorders (GID) in Spain (Bergero et al., 2001; Esteva de Antonio et al., 2001; Giraldo, Esteva, & Bergero, 2001; Gómez-Gil et al., 2006).

In Spain, Andalusia was the first autonomous region to create a unit for gender identity disorders, which opened in 1999. In this region, complete coverage of medical and surgical treatment of patients with GID is offered under the public health system (Esteva de Antonio et al., 2002). In the rest of Spain, the costs of surgical procedures are not currently covered by the public health system (Gómez-Gil & Esteva de Antonio, 2006; Gómez-Gil & Peri-Nogués, 2002). In the autonomous region of

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Table 1 Summary of selected previous studies of transsexualism

Study	Method	Results of parameters compared with our study
Australia Ross, Wälinder, Lundström, and Thuwe (1981)	Questionnaires sent to all psychiatrists in Australia, asking how many transsexuals had been seen in the preceding 2 years (272 transsexuals)	MF:FM sex ratio: 6.1:1
Belgium De Cuyper, Jannes, and Rubens (1995)	Psychological and psychiatric evaluation to 65 applicants at a Gender Identity Clinic. Thirty-five met diagnosis for transsexualism and were admitted to the program for SR therapy (22 MFs and 13 FMIs)	MF:FM sex ratio: 1.7:1 No diagnosis of transsexualism: 30 of 65 participants excluded Applying for SRS before age 30: more FMIs (84.6%) than MFs (31.8%) Education: more basic and lower secondary in MFs (68.2%) than in FMIs (38.3%), but the difference was not significant Employment: more FMIs (84.6%) were employed or were students than MFs (54.5%) Partner: more stable relationships in FMIs (53.8%) than in MFs (27.3%) Previous marriage with opposite sex: more frequent in MFs (45%) than FMIs (0%) Sexual orientation: more MFs (27.3%) with heterosexual preference than FMIs (0%) Axis I comorbidity: higher percentage in MFs (22.7%) than in FMIs (0%) Previous psychiatric treatment: similar in MFs (45.1%) and FMIs (28.5%) Previous abuse or alcohol and/or drugs: similar in MFs (50%) and FMIs (61.5%) MF:FM sex ratio: 2.43:1 Mean age when requesting SR: MFs (32.7 years) older than FMIs (28.5 years) Education: most had reached first years of secondary school (98%) or last years of secondary school (65%), and only 19% had a degree from a university or college or further education. No differences between sexes were found Employment: more MFs were unemployed (52%) than FMIs (35%) Partner: 40% had a partner (married or living together) at first consultation Previous marriage with opposite sex: more in MFs (19%) than in FMIs (4%)
Canada Blanchard, Clemmensen, and Steiner (1987)	Chart and questionnaires of 136 males and 73 females with complaints of gender dysphoria, after excluding 12 cases	MF:FM sex ratio: 1.7:1 No diagnosis of transsexualism: eight out of 136 (5.8%) Partner: 46.2% of males and 49.3% of females had cohabited with a partner of the same biological sex Sexual orientation: more males (73/136) were with sexual preference for the opposite biological sex (heterosexual) than females (1/73) Previous hormonal therapy: before presenting at the clinic, 45.6% of males and 8.3% of females had taken sex hormones

Table 1 continued

Study	Method	Results of parameters compared with our study
Denmark		
Sorensen and Hertoft (1982)	29 MF and 8 FM transsexuals with SRS and a change in legal status in Denmark	MF:FM sex ratio: 3.6:1 Sexual orientation: most of MFs felt sexually attracted to men, but one third had heterosexual experience, mainly occasional relations. More MFs had a sexual preference for the opposite sex than FMs. About 17% had never participated in either homosexual or heterosexual activity
Germany		
Köckott and Fahmer (1988)	Personal interview and follow-up study in 58 transsexuals (37 MF and 21 FM) in order to report differences between sexes	Mean age when requesting SRS: MFs (24.9 years) younger than FMs (32.1 years) Partner: FMs more likely to be in a lasting partnership (10/37) than MFs (12/21) Previous marriage with opposite sex: similar married and divorced in MFs (33%) and FMs (24%) Sexual orientation: only 6 of 10 partners belonged to the same biological sex in MFs whereas all 12 partners of the FMs belonged to the same biological sex MF:FM sex ratio: 2.3:1 Mean age when requesting legal change of first name or of sex status: higher for MFs (34 years) than FMs (30 years) MF:FM sex ratio: 2:1 (from 1970 to 1994) and 1.2:1 (from 1994 to 1998)
Weitze and Osburg (1996)	Examination of 1422 legal decisions regarding persons seeking legal recognition of their change in sex	MF:FM sex ratio: 3.38:1 Applying for SRS before age of 30: 51.2% of MFs and 72.7% of FMs Employment: more FMs (74.5%) were employed in job or student than MFs (57.6%) Partner: more FMs were in stable relationships (48.0%) than MFs (21.1%) Previous marriage with opposite sex: MFs more (27.5%) than FMs (0) Sexual orientation: more MFs (23.7%) have exclusively sexual experience with the opposite biological sex than FMs (2.4%) Previous mental disorders: higher prevalence of previous abuse of alcohol and drugs in MFs (11.3%) than in FMs (3.8%) MF:FM sex ratio: 2.5:1 Foreign origin: 6.9%
Garrels et al. (2000)	Data study derived from 1758 transsexuals diagnosed between 1964 and 1998 in Germany	MF:FM sex ratio: 3:1 No diagnosis of transsexualism: 6% of males and 4% of females were not eligible Mean age when requesting SR: women with gender dysphoria seek treatment between the ages of 20 and 25, on average 5 years earlier than men (most between 25 and 30 years) Foreign origin: 158 foreign patients (12.3%); among them, fewer women with gender dysphoria (18%)
The Netherlands		
Verschoor and Poortinga (1988)	Clinical interviews of 168 males and 55 females requesting SRS and undergoing hormonal treatment for at least 3 months	MF:FM sex ratio: 3:1 No diagnosis of transsexualism: 6% of males and 4% of females were not eligible Mean age when requesting SR: women with gender dysphoria seek treatment between the ages of 20 and 25, on average 5 years earlier than men (most between 25 and 30 years) Foreign origin: 158 foreign patients (12.3%); among them, fewer women with gender dysphoria (18%)
Bakker, van Kesteren, Gooren, and Bezemer (1993)	Participants selected from registers of 713 Dutch-born transsexuals	MF:FM sex ratio: 3:1 No diagnosis of transsexualism: 6% of males and 4% of females were not eligible Mean age when requesting SR: women with gender dysphoria seek treatment between the ages of 20 and 25, on average 5 years earlier than men (most between 25 and 30 years) Foreign origin: 158 foreign patients (12.3%); among them, fewer women with gender dysphoria (18%)
van Kesteren, Gooren, and Megens (1996)	Medical records of 1285 subjects with complaints of gender dysphoria (1975–1992)	MF:FM sex ratio: 3:1 No diagnosis of transsexualism: 6% of males and 4% of females were not eligible Mean age when requesting SR: women with gender dysphoria seek treatment between the ages of 20 and 25, on average 5 years earlier than men (most between 25 and 30 years) Foreign origin: 158 foreign patients (12.3%); among them, fewer women with gender dysphoria (18%)

Table 1 continued

Study	Method	Results of parameters compared with our study
Cohen-Kettenis and van Goozen (1997)	Follow-up study of 22 consecutive adolescent transsexuals (7 MF and 15 FM) who underwent SRS	Employment: 43% were students, 36% were working, and 21% were unemployed Living arrangements: most participants (79%) lived independently or in student dormitories, 14% with their partner, and 7% with their parents Partner: 36% had a stable relationship with a partner Mean age when requesting SR: MFs applying for SR later (28.3 years in homosexuals and 36.8 in nonhomosexuals) than FMs (24.4 years in homosexuals and 23.8 in nonhomosexuals) Previous marriage with opposite sex: fewer FMs (14.9%) were or had been married than MFs (33.0%)
Smith, van Goozen, Kuiper, and Cohen-Kettenis (2005)	Self-reported sexual preference of 187 transsexuals eligible for SR	Sexual orientation: from the total, 113 transsexuals (61 MFs and 52 FMs) had sexual preference for the same biological sex and 74 (52 MFs and 22 FMs) had nonhomosexual preference
Northern Ireland O'Gorman (1982)	Epidemiological and clinical retrospective study of 28 transsexuals (21 males and 7 females)	MF:FM sex ratio: 3:1 Mean age when requesting SRS : MFs (26.7 years) were older than FMs (24.5 years) Employment: 15 MFs and three FMs were employed Previous marriage with opposite sex: seven MFs and two FMs were married or divorced Axis I comorbidity: 11 MFs and 3 FMs had a history of psychiatric illness, including psychotic episodes, acute transient disturbances, anorexia nervosa, and depression Sexual orientation: eight females and four males had had sexual experience with members of the same biological sex. 13% of MFs never participated in any sexual activity
Norway Haraldsen and Dahl (2000)	Interviews and the SCL-90 administered to 86 transsexuals	MF:FM sex ratio: 1.1:1 Axis I comorbidity: the most prevalent were major depression (17.4%), anxiety disorders (18.6%), and substance abuse (16.2%). Others included dysthymia (4.7%), bipolar disorder (2.3%), and eating disorder (1.2%) Axis II comorbidity: cluster B were more prevalent (8.1%) than A and C (5.8%)
Poland Godlewski (1988)	Analysis dealing with diagnoses of transsexualism in 716 patients requiring sexological treatment	MF:FM sex ratio: 1:5.5

Table 1 continued

Study	Method	Results of parameters compared with our study
Herman-Jeglińska, Grabowska, and Dulko (2002)	Psychological and sex-role assessment of 29 MF and 103 FM applicants for hormonal therapy or SRS, classified as primary versus secondary transsexual typology	MF:FM sex ratio: 1:5.42 Mean age when requesting SR: secondary MFs were older (35.9) than primary MFs (21.8), secondary FMs (24.8), and primary FMs (23.1 years) Education: in general transsexuals reached secondary school. The secondary MFs were significantly better educated than the other groups Previous marriage with opposite sex: none of the primary MFs or FMs had been married, whereas 54% of secondary MFs and 19% of secondary FMs had been married
Singapore Tsoi (1992)	Developmental profile of 320 MFs and 130 FMs when applying for SRS in Singapore	Mean age when requesting SRS: on average the MFs were about 1 year younger (23.5 years) than the FMs (24.9 years) Education: more FMs (23%) had post-secondary education than MFs (16%) Employment: more MFs were in lower occupational class than FMs. More MFs (8%) are unemployed than FMs (2%). History of prostitution in 38% of MFs Previous marriage with opposite sex: none had ever married Sexual orientation: among the sexually active group (87% of the total), all were homosexual
Spain Esteve de Antonio et al. (2001)	Interview and questionnaires to the 100 first patients (71 MFs and 29 FMs)	MF:FM sex ratio: 2.1:1 No diagnosis of transsexualism: 14% Mean age when requesting for SR: 29.8 years Starting hormone without prescription: 56% of applicants Education: 58.8% had low educational level Employment: 55.9% reported job discrimination Partner: 21.5% lived with a partner Foreign origin: 2% Previous psychiatric treatment: 25.6% Previous psychological assessment: 53.5%
Bergero Miguel et al. (2001)	Interview and questionnaires to the 100 first patients (71 MFs and 29 FMs)	MF:FM sex ratio: 2.6 Prevalence rate in Catalonia: 1:21,031 males and 1:48,096 females Annual incidence in Catalonia: 0.73/100,000/year
Gómez Gil et al. (2006)	Estimation of the epidemiology of transsexualism in Catalonia according to health care demand	MF:FM sex ratio: 2.6 Prevalence rate in Catalonia: 1:21,031 males and 1:48,096 females Annual incidence in Catalonia: 0.73/100,000/year
Sweden Bodlund, Kullgren, Sundbom, and Höjerback (1993)	Assessment of Axis I disorders using clinical interviews in 19 transsexuals (9 MF and 10 FM)	Employment: about 65% of transsexuals were at work or studying. The rest were unemployed or on long-term sick leave Axis I comorbidity: other Axis I diagnosis in 10 of 19 patients; there were 5 with adjustment disorders, 2 with anxiety disorder, 2 with alcohol abuse, and 1 with delusional syndrome

Table 1 continued

Study	Method	Results of parameters compared with our study
Landén, Wälinder, and Lundström (1998)	Retrospective and cross-sectional study of files of 233 transsexuals (134 FM and 99 FM) who applied for SRS in Sweden during the period 1972–1992	<p>Mean age when requesting SRS: MFs older (32.2 years) than FMs (29.3 years)</p> <p>Education: no differences in the level of education</p> <p>Employment: 69.8% of MFs and 62.5% of FMs were employed</p> <p>Previous marriage with opposite sex: more frequent in MFs (23.1%) than in FMs (6.1%)</p> <p>Foreign origin: no significant differences between MFs (24.6%) and FMs (22.2%)</p> <p>Sexual orientation: more MFs were bisexual (10.7%) or attracted to the opposite sex (9.1%) than FMs (0% and 1.1%, respectively)</p> <p>Axis I comorbidity: mood disorders similar for MFs (12.7%) and FMs (7.1%), psychotic disorder similar for MFs (2.2%) and FMs (4.1%)</p> <p>Previous abuse of alcohol and/or drugs: similar in MFs (11.9%) and FMs (18.2%)</p> <p>Previous psychiatric treatment: similar in MFs (38.8%) and FMs (35.4%)</p> <p>MF:FM sex ratio: 1.2:1: for period 1965–1985, 1.8:1: for period 1986–2002</p> <p>Mean age when requesting SRS: MFs were older in the last two decades (32.2 and 36.6 years) than FMs (29.3 and 30 years)</p> <p>Foreign origin: similar percentage in MFs (24–25%) and FMs (24–27%)</p>
Olsson and Möller (2003)	Information from 402 applications for SR in Sweden since 1965, comparing various time periods	<p>Axis I comorbidity: no additional current Axis I diagnosis were found in 60% of MFs and 63.6% of FMs. Main diagnosis were 8 with anxiety disorders, 4 with mood disorders, 3 with substance-related disorders, and 3 with somatoform disorders</p> <p>Previous mental disorders: non lifetime Axis I diagnosis were found in 20% of MFs and 45.5% of FMs. Main diagnoses were 14 with mood disorders, 14 with substance-related disorders, 7 with anxiety disorders, 2 with psychotic disorders, and 1 with eating disorders</p> <p>MF:FM sex ratio: 3.1:1</p> <p>Mean age when requesting SR: 32.6 years</p> <p>No diagnosis of transsexualism: 27.35%</p> <p>Sexual orientation: more MFs (45%) were heterosexual than FMs (13%)</p>
Switzerland	Structured clinical interviews in 20 MFs and 11 FMs	<p>Axis I comorbidity: no additional current Axis I diagnosis were found in 20% of MFs and 63.6% of FMs. Main diagnosis were 8 with anxiety disorders, 4 with mood disorders, 3 with substance-related disorders, and 3 with somatoform disorders</p> <p>Previous mental disorders: non lifetime Axis I diagnosis were found in 20% of MFs and 45.5% of FMs. Main diagnoses were 14 with mood disorders, 14 with substance-related disorders, 7 with anxiety disorders, 2 with psychotic disorders, and 1 with eating disorders</p> <p>MF:FM sex ratio: 3.1:1</p> <p>Mean age when requesting SR: 32.6 years</p> <p>No diagnosis of transsexualism: 27.35%</p> <p>Sexual orientation: more MFs (45%) were heterosexual than FMs (13%)</p>
United Kingdom	Clinical features of 77 transsexuals and 29 nontranssexuals attending a gender-identity clinic	<p>Axis I comorbidity: no additional current Axis I diagnosis were found in 20% of MFs and 63.6% of FMs. Main diagnosis were 8 with anxiety disorders, 4 with mood disorders, 3 with substance-related disorders, and 3 with somatoform disorders</p> <p>Previous mental disorders: non lifetime Axis I diagnosis were found in 20% of MFs and 45.5% of FMs. Main diagnoses were 14 with mood disorders, 14 with substance-related disorders, 7 with anxiety disorders, 2 with psychotic disorders, and 1 with eating disorders</p> <p>MF:FM sex ratio: 3.1:1</p> <p>Mean age when requesting SR: 32.6 years</p> <p>No diagnosis of transsexualism: 27.35%</p> <p>Sexual orientation: more MFs (45%) were heterosexual than FMs (13%)</p>

Table 1 continued

Study	Method	Results of parameters compared with our study
United States Dixen, Maddever, Van Maasdam, and Edwards (1984)	Interviews and questionnaires in 479 male and 285 female applicants for SRS	Mean age when requesting SRS: MFs (29 years) were older than FMs (27.3 years) Employment: 63.5% of MFs and 75.4% of FMs were employed. 24.4% of MFs and 10.8% of FMs were receiving benefits. 16.9% of MFs worked as prostitutes Living with family: 16% of MFs and FMs Partner: fewer MFs (28.8%) lived with partners (lover or spouse) than FMs (46.2%). Fewer MFs (30.7%) had a current partner of the same biological sex than FMs (63.5%) Previous marriage with opposite sex: more frequent in MFs (21%) than in FMs (11.4%) Sexual orientation: more MFs (10%) had current partner of the opposite biological sex than FMs (2%)
Cole, O'Boyle, Emory, and Meyer (1997)	Evaluation of 435 gender dysphoric individuals (318 males and 117 females) to evaluate Axis I DSM-IV diagnosis	Mean age when requesting SR: MFs older (33 years) than FMs (30 years) Education: no statistical differences between MFs and FMs. Primarily between high school graduate and partial college Employment: no statistical differences between MFs and FMs. Primarily middle class Axis I comorbidity: similar percentage in MFs (6%) and FMs (4%). Major depression was the most common diagnoses, bipolar disorder and schizophrenia were also represented Previous mental illness: only 9% indicated past treatment for diagnosed psychiatric conditions other than gender dysphoria or substance abuse Substance abuse history: similar percentage in MF (29%) and FM (26%) Mean age after requesting SRS, at time of survey: 44 years (range, 18–70 years) Sexual orientation: before SRS, 54% of MFs had been predominantly attracted to women and 9% had been predominantly attracted to men. After SRS, these figures were 25% and 34%, respectively
Lawrence (2005)	Self-administered questionnaire about sexuality before and after SRS reported by 232 MFs	
Former Yugoslavia Rakic, Starcevic, Maric, and Kelin (1996)	Standardized questionnaires 22 MFs and 10 FMs after SRS	Mean age when requesting SRS: MFs (24 years) younger than FMs (27 years) Employment: similar in MFs (32%) and in FMs (40%) before SRS Partner: 27% of MFs and 40% of FMs had a sexual partner before SRS

Note: MFs = male to female transsexuals; FMs = female to male transsexuals; SR = sex reassignment; SRS = sex reassignment checklist 90; *Sexual orientation:* patients were considered heterosexual if they reported sexual attraction or preference to members of the opposite biological sex and homosexual if they reported sexual attraction or preference to members of the same biological sex

Catalonia, the Hospital Clínic of Barcelona is the sole public hospital that provides specialized, comprehensive psychiatric-psychological and endocrine therapy for transsexual patients. Since 1990, the vast majority of applicants for sex reassignment in this region have been referred to this hospital by endocrinologists, private surgeons, psychiatrists, and general practitioners (Gómez-Gil et al., 2006). Since May 2006, the Hospital Clínic has also been officially accredited as a referral unit for gender identity disorders.

In view of the scarcity of data from southern European countries and because we believe that the divergences in some of the data published may be due to cultural factors, we designed the present study to define the characteristics of applicants for sex reassignment in Spain. FMs and MFs were also compared on variables related to sociodemographic, clinical, and psychiatric characteristics.

Method

Participants

The study population comprised 230 transsexual patients (159 MF and 71 FM). This sample was selected from a total of 252 patients with complaints of gender dysphoria who contacted the Hospital Clínic (Barcelona, Spain) from the year 2000 until April 2006 to apply for hormonal or surgical sex reassignment treatment.

Measures and Procedure

Standard Clinical Assessment

Every patient completed semistructured clinical interviews lasting between 1 and 2 h by a psychiatrist and a psychologist with several years of experience in diagnosis of GID. Sociodemographic, clinical, and psychiatric data recorded are shown in Tables 2–4. Diagnostic assessment according to the

fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV;* American Psychiatric Association, 1994) and the tenth revision of the *ICD Classification of Mental and Behavioural Disorders (ICD-10;* World Health Organization, 1992) was made after several sessions with both mental health professionals. Patients who satisfied the *DSM-IV* criteria for GID in adolescence or adulthood or *ICD-10* criteria for transsexualism were provided psychotherapy and started real-life experience trials. Those who met the eligibility and readiness requirements in the guidelines of the Standards of Care of the Harry Benjamin Gender Dysphoria Association (Meyer et al., 2001) were issued a final certificate by the two professionals recommending hormone therapy or surgery. Endocrine treatment is provided at this hospital under the National Health Service but surgical treatment is only available privately. If patients did not satisfy the criteria for GIDs, another Axis I or II diagnosis was made according to *DSM-IV* and *ICD-10* criteria. The presence of psychiatric comorbidity in transsexual patients does not necessarily rule out hormonal therapy or surgery, but some diagnoses may delay or preclude treatment. Appropriate therapy and psychotropic medication are offered to all patients for psychiatric comorbidities or other differential diagnoses.

Mini International Neuropsychiatric Interview (M.I.N.I), Spanish Version 5.0.0

The Mini International Neuropsychiatric Interview (M.I.N.I) (Sheehan et al., 1998), Spanish Version 5.0.0. (Bobes et al., 1997), was performed by the psychiatrist to assess psychiatric comorbidity. We used this short structured diagnostic interview for the assessment of the main *DSM-IV* Axis I psychiatric disorders and the Axis II antisocial personality disorder. As the M.I.N.I. does not include lifetime history diagnoses of agoraphobia, generalized anxiety disorder, alcohol and substance abuse/dependence, anorexia, and bulimia nervosa, questions were added about lifetime experience of these conditions. Similarly, as the M.I.N.I. does not include adjustment disorders,

Table 2 Differential diagnoses in the total cohort of male and female applicants for sex reassignment

<i>ICD-10</i> and <i>DSM-IV-TR</i> diagnoses	Male <i>n</i>	Female <i>n</i>
Gender identity disorder		
F64.0 transsexualism/gender identity disorder in adolescents or adults [302.85]	159	71
F64.1 dual-role transvestism/stress-related cross-dressing behavior [302.6]	5	–
F64.8/F64.9 other gender identity disorder and gender identity disorder, unspecified/gender identity disorder not otherwise specified [302.6]	5	3
Other psychiatric diagnoses without gender identity disorders		
F20–29 schizophrenia and other psychotic disorders [295.xx–298.x]	2	1
F42 obsessive-compulsive disorder [308.3]	2	1
F66.0 sexual maturation disorder	1	–
F60 personality disorders [301.x]	3	–

Note: *ICD-10* = The ICD-10 classification of mental and behavioural disorders, World Health Organization (1992)

DSM-IV-TR = The diagnostic and statistical manual of mental disorders, American Psychiatric Association (1994)

Table 3 Comparison of sociodemographic, sexual, and hormonal characteristics of MF and FM Spanish transsexuals

Characteristic	MFs (<i>n</i> = 159)		FMs (<i>n</i> = 71)		Mann–Whitney <i>U</i> rank sum test	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>Z</i>	<i>p</i>
Age at requesting SR	29.7	8.3	27.3	7.7	−2.2	.032
Age at onset of hormonal therapy	24.4	7.8	25.1	9.7	−1.8	ns
Characteristic	MFs		FMs		Chi-square test	
	<i>n</i>	(%)	<i>n</i>	(%)	χ^2	<i>P</i>
Referral					20.9	<.001
General practitioner	35	(22.0)	26	(36.6)		
Endocrinologist	28	(17.6)	12	(16.9)		
Surgeon	77	(48.4)	13	(18.3)		
Psychiatrist	12	(7.5)	13	(18.3)		
Educational level					1.7	ns ^a
Primary school	46	(28.9)	20	(28.2)		
Lower secondary school	47	(29.6)	19	(26.8)		
Upper secondary school	31	(19.5)	11	(15.5)		
Pre-university and unfinished university studies	17	(10.7)	10	(14.1)		
University graduate	18	(11.3)	11	(15.5)		
Employment status					8.7	<.05
Employment requiring high educational qualifications	8	(5.0)	12	(16.9)		
Employment requiring low educational qualifications	115	(72.3)	45	(63.4)		
Unemployed ^b	25	(15.7)	12	(16.9)		
Student ^b	7	(4.4)	2	(2.8)		
Social support ^b	4	(2.5)	0	–		
Living arrangements					4.7	ns
With parents	62	(39.0)	30	(42.3)		
With partner	41	(25.8)	25	(35.2)		
Alone	32	(20.1)	11	(15.5)		
With friends	24	(15.1)	5	(7.0)		
Previously married to a member of the opposite sex	9	(5.7)	5	(7.0)	–	ns ^c
With biological children	5	(3.1)	1	(1.4)	–	ns ^c
Non-Spanish natives ^d	40	(25.2)	6	(8.5)	7.6	<.001
From South America	38	(23.9)	2	(2.8)		
From Europe	2	(1.3)	4	(5.7)		
Residence					1.3	ns
Catalonia	141	(88.7)	68	(95.8)		
Rest of Spain ^b	15	(9.4)	3	(4.2)		
Other countries ^b	3	(1.9)	0	–		
Sexual orientation					.7	ns
Same biological sex	143	(89.9)	67	(94.4)		
Opposite biological sex ^b	7	(4.4)	0	–		
Bisexual ^b	7	(4.4)	2	(2.8)		
Unknown ^b	2	(1.3)	2	(2.8)		
No sexual experience	20	(12.6)	16	(22.5)	3.0	ns

Table 3 continued

Characteristic	MFs		FMs		Chi-square test	
	<i>n</i>	(%)	<i>n</i>	(%)	χ^2	<i>P</i>
Hormonal therapy						
Receiving hormonal therapy at time of requesting sex change	104	(65.4)	10	(14.1)	49.7	<.001
Started taking hormones on their own without prescription	95	(59.7)	2	(2.8)	63.0	<.001

Note: MFs = male to female transsexuals; FMs = female to male transsexuals

^a *p* values are from Kruskal–Wallis test for educational level variable

^b Categories were collapsed for statistical analysis to obtain the expected values for at least 80% of cells greater or equal to five

^c *p* values are from Fisher's exact test

^d Participants from Colombia, Ecuador, Brazil, Argentina, Dominican Republic, Venezuela, Cuba, Uruguay, Chile, Peru, Belgium, Germany, Portugal, Poland, and Andorra

questions according to *DSM-IV* criteria about current and lifetime history were also added.

Data Analysis

Data were analyzed by descriptive tests using the SPSS statistical software package, Version 12.0. The Kolmogorov Smirnov test was used to evaluate the normality of quantitative variables. Between-group comparisons of quantitative variables were performed using the non-parametric Mann–Whitney *U* test. Between-group comparisons of categorical variables were performed using chi-square analysis; when the expected values for at least 80% of cells were fewer than five appropriate categories were collapsed or the Fisher's exact test were used. The Kruskal–Wallis rank test was used to compare educational level. In order to control for the increased chance of a significant finding with multiple comparisons, only the most relevant variables were analyzed (see Tables 3 and 4) and a significance level of $p < .05$ was set for each comparison.

Results

Differential diagnoses in the total cohort of male and female applicants for sex reassignment are summarized in Table 2. The MF:FM sex ratio of transsexualism was 2.2:1. Twenty-three (9.1%) patients did not meet *DSM-IV* criteria for GID.

Table 3 shows the sociodemographic, sexual, and hormonal characteristics of the transsexual patients. MFs were significantly older ($M = 29.7$ years, $SD = 8.3$) than FMs ($M = 27.3$ years, $SD = 7.7$) when they requested sex reassignment in our unit ($p < .05$), but the groups did not differ in terms of the age when hormonal therapy was started. MFs were referred mainly by private surgeons and FMs by general practitioners and endocrinologists ($p < .001$). No statistically

significant differences were observed in the level of education. Significantly more FMs (16.9%) were in employment requiring high educational qualifications ($p < .05$) than MFs (5.0%). A total of 53 MFs (33.3%) reported involvement at present or in the past in prostitution or sex-shows. Most patients (39.0% of MFs and 42.3% of FMs) lived with their parents. Nine MFs and 5 FMs had previously been married to a member of the opposite biological sex. Five MFs and 1 FM had biological children. Forty (25.2%) MFs were non-Spanish: 38 were from South America and 2 from Europe. In contrast, in the FM group only 6 (8.5%) were non-Spanish natives ($p < .001$). Regarding sexual orientation, 89.9% of MFs and 94.4% of FMs were sexually attracted to members of the same biological sex. No differences were recorded with regard to the absence of sexual experience. Hormonal therapy at time of requesting sex change was more frequent in MFs (65.4%) than in FMs (14.1%) ($p < .001$). Significantly more MFs (59.7%) started taking hormones on their own without prescription than FMs (2.8%) ($p < .001$).

Percentages of current and lifetime history of the main *DSM-IV* mental disorders are shown in Table 4. The most frequent diagnosis was lifetime history of adjustment disorder in MFs (56.0%) and in FMs (70.4%). Other frequent diagnoses were current and lifetime history of alcohol and substance-related disorders in the MF group, and lifetime history of generalized anxiety disorder and current social phobia in both groups. The MF group more frequently had a diagnosis of current alcohol and current and/or lifetime substance abuse or dependence ($p < .05$) than FMs. No differences between groups were found in reporting previous psychiatric treatment.

Discussion

Most of the results of this study corroborate data published in previous research (Table 1), but the transsexuals from Spain also present certain differences. Our MF:FM ratio (2.2:1) was

Table 4 Comparison of the main *DSM-IV* mental disorders in MF and FM Spanish transsexuals assessed with the M.I.N.I. and with a Semi-structured Psychiatric Interview Based on *DSM-IV* criteria

<i>DSM-IV</i> mental disorders	MFs (<i>n</i> = 159)		FMs (<i>n</i> = 71)		Chi-square test ^a	
	<i>n</i>	(%)	<i>n</i>	(%)	χ^2	<i>p</i>
Mood and adjustment disorders						
Major depression, past 2 weeks	5	(3.1)	2	(2.8)		
Major depression, recurrent	2	(1.3)	0	–		
Dysthymia, past 2 years	1	(.6)	2	(2.8)		
Suicidal risk, past month	0	–	–	–		
Mania and hypomania, current	0	–	0	–		
Mania and hypomania, past	1	(.6)	0	–		
Adjustment disorder, current ^b	21	(13.2)	16	(22.5)	2.5	ns
Adjustment disorder, lifetime ^b	89	(56.0)	50	(70.4)	11.7	<.001
Anxiety disorders						
Panic disorder without agoraphobia, past month	5	(3.1)	2	(2.8)		
Panic disorder, lifetime	9	(5.7)	6	(8.5)		
Panic disorder with agoraphobia, past month	0	–	0	–		
Agoraphobia without panic disorder, current	1	(.6)	0	–		
Agoraphobia, lifetime ^b	1	(.6)	3	(4.2)		
Social phobia, past month	13	(8.2)	8	(11.3)	.3	ns
Obsessive-compulsive disorder, past month	3	(1.9)	2	(2.8)		
Post-traumatic stress disorder, past month	2	(1.3)	0	–		
Generalized anxiety disorder, current	2	(1.3)	0	–		
Generalized anxiety disorder, lifetime ^b	14	(8.8)	4	(5.6)	.3	ns
Substance-related disorders						
Alcohol abuse/dependence, past 12 months	17	(10.7)	1	(1.4)	4.7	<.05
Alcohol abuse/dependence, lifetime ^b	18	(11.3)	3	(4.2)	2.2	ns
Non-alcohol substance dependence/abuse, past 12 months	23	(14.5)	1	(1.4)	7.6	<.01
Non-alcohol substance abuse/dependence, lifetime ^b	48	(30.2)	8	(11.3)	8.5	<.005
Psychotic disorders						
Psychotic disorder, current	0	–	0	–		
Psychotic disorder, lifetime	4	(2.5)	2	(2.8)		
Eating disorders						
Anorexia nervosa, current	1	(.6)	0	–		
Anorexia nervosa, lifetime ^b	2	(1.3)	1	(1.4)		
Bulimia nervosa, current	0	–	0	–		
Bulimia nervosa, lifetime ^b	0	–	2	(2.8)		
Antisocial personality disorder, lifetime	0	–	0	–		
Previous psychiatric treatment ^b	44	(37.6)	16	(34)	.4	ns

Note: MFs = male to female transsexuals; FMs = female to male transsexuals; M.I.N.I. = Mini International Neuropsychiatric Interview

^a Chi-square test: the tests were omitted if there were fewer than 18 individuals in both groups

^b Supplementary psychiatric diagnosis added to the M.I.N.I. interview based on *DSM-IV* criteria

similar to that found in recent studies from Belgium (2.4:1) (De Cuyper et al., 2007), The Netherlands (2.5:1) (Bakker et al., 1993), from another Spanish region (2.1:1) (Esteva de Antonio et al., 2001), and to those found in most European countries, the U.S., and Singapore (2–3:1) (for a review, see Landén, Wålinder, & Lundström, 1996). Data from Canada (1.7:1) (Blanchard et al., 1987), Germany (1.2:1) (Garrels et al.,

2000), Norway (1.1:1) (Haraldsen & Dahl, 2000), and Sweden (1.8:1) (Olsson & Möller, 2003) show a slight predominance in the MF group and data from Australia (6.1:1) (Ross et al., 1981) a substantial predominance. In contrast, FMs predominate in Poland (1:5.5) (Godlewski, 1988; Herman-Jeglińska et al., 2002). In Spain, there are no epidemiological studies that refer to the whole population. Nevertheless, in Catalonia a

trend towards an increase in the proportion of referrals among FMs has been noted in recent years (Gómez-Gil et al., 2006).

The percentage of patients who contacted our clinic but did not present criteria for transsexualism (9.1%) was similar to the percentage of non-eligibility estimated by the mental health professionals in an earlier Dutch study (van Kesteren et al., 1996) and higher than in a Canadian study (Blanchard et al., 1987), but lower than rates found in other studies in Spain (Esteva de Antonio et al., 2001) and Belgium (De Cuypere et al., 1995).

The mean age for requesting psychiatric assessment and sex reassignment treatment in our group was similar to that recorded at the other Spanish unit (Esteva de Antonio et al., 2001) and in other European studies (Landén et al., 1998; van Kesteren et al., 1996). Several researchers found that FM applicants were younger when they applied for sex reassignment treatment (De Cuypere et al., 1995, 2007; Dixen et al., 1984; Landén et al., 1998; O’Gorman, 1982; Olsson & Möller, 2003; Smith et al., 2005; Verschoor & Poortinga, 1988; van Kesteren et al., 1996; Weitze & Osburg, 1996), but not all (Rakic et al., 1996; Tsoi, 1990, 1992). In our study, FMs were younger when they came to our unit, but the groups did not differ in terms of age when starting hormonal therapy. This may be due, in part, to the fact that the rate of patients starting hormonal therapy on their own in the MF subgroup was near 60%. Moreover, endocrinologists tend to refer FMs for psychiatric evaluation when they request hormonal treatment, and surgeons tend to refer MFs when they request vaginoplasty procedures. This suggests, in contrast to the results of previous studies, that the groups were similar in age at the time of starting hormonal sex reassignment.

In previous studies from Belgium (De Cuypere et al., 1995), The Netherlands (Verschoor & Poortinga, 1988), Singapore (Tsoi, 1992), and the U.S. (Dixen et al., 1984), FMs were found to have a significantly higher level of education and to be employed in more stable jobs than the MF group. The unstable and low employment status in our population and in other Spanish regions (Bergero Miguel et al., 2001), especially in the MF group, is a surrogate marker of the social exclusion that these patients suffer. The frequency of unemployment in our study population was similar to that found in the Swedish study (Landén et al., 1998) and lower than that found in a study from Belgium (De Cuypere et al., 2007), but the percentage of patients with social welfare support in our group was lower than in either study. The scarce support for publicly funded sex reassignment in Spain in recent decades has meant that only patients with higher incomes have access to surgery in the private sector. Some patients who work as prostitutes may have sufficient income to afford surgery (Dixen et al., 1984; Sorensen & Hertoft, 1982; Tsoi, 1992). Among the MF transsexual group, one third reported involvement (either at present or in the past) in prostitution and/or sex-show work. The exact percentage of MFs who engage in sex work is difficult to calculate.

Since MF patients were referred mainly by the surgeon after requesting vaginoplasty, the proportion of sex-workers may have been overestimated as they constitute a subgroup with a higher income level; on the other hand, this proportion may have been underestimated because patients working in prostitution do not always seek genital sex reassignment.

Several studies have found that FMs were more frequently unpartnered at the time of diagnosis and were more often in stable relationships with same-sex partners (De Cuypere et al., 1995; Dixen et al., 1984; Köckott & Fahrner, 1988; Verschoor & Poortinga, 1988) than their MF counterparts. In our study, both groups lived predominately with their parents and there were no significant differences in the rate of partnership between sexes. An interesting aspect of our study was that in a few other countries do so many transsexuals (and nontranssexuals for that matter) still live with their parents (Cohen-Kettenis & van Goozen, 1997). Another is that the frequency of previous marriage before sex reassignment was lower in our study than in the studies performed in Belgium (De Cuypere et al., 2007), Germany (Köckott et al., 1988), The Netherlands (Verschoor & Poortinga, 1988), Poland (Herman-Jeglińska et al., 2002), Sweden (Bodlund et al., 1993; Landén et al., 1998), and the U.S. (Dixen et al., 1984), which found prevalence rates between 21% and 45% in the MF transsexual group. In the Singapore study, none of the transsexuals had ever married (Tsoi, 1990). Certain cultural features of the Spanish population (delayed independence of children, barriers to employment, low level of information, and knowledge in the family) may explain the high proportion of patients still living with their parents.

The frequency of applicants from foreign countries in our study, 20%, was similar to that reported in the studies in The Netherlands (van Kesteren et al., 1996) and Sweden (Landén et al., 1998; Olsson & Möller, 2003). In Catalonia, foreign patients were mainly MFs from South American countries. Again, the unfavorable legal situation, a presumably lower level of social tolerance of MFs, and economic problems may increase the likelihood of emigration from South America to Spain, thus raising the prevalence of MFs in our country.

In agreement with the study by Tsoi (1992), we found sexual orientation to be mainly towards a same-biological sex partner. No significant differences were observed between groups. One of the most interesting findings was the low percentage of MFs who reported sexual attraction to women or to both women and men (bisexual) in comparison to most previous studies in Western Europe and the U.S. which have reported percentages between 9% and 58% (Blanchard et al., 1987; Burns et al., 1990; De Cuypere et al., 1995; Dixen et al., 1984; Köckott & Fahrner, 1988; Landén et al., 1998; Lawrence, 2005; Smith et al., 2005). These percentages seem to decrease after sex reassignment surgery (for a review, see Lawrence, 2005), although the changes reported may be inconsistent with observed patterns of physiological arousal

(Lawrence, Latty, Chivers, & Bailey, 2005). One possible explanation for this difference is that in our study we asked about sexual attraction rather than history of sexual partnerships or experience. Moreover, it is possible that in our study self-reports of sexual attraction in MFs overestimate the same-sex orientation because many gynephilic MFs may try to deceive their clinicians and inaccurately portray themselves as androphilic to improve their chances of sex reassignment. This was undoubtedly a significant factor in the past and may remain so today in countries such as Spain. Another possible reason is that some MFs may misinterpret their sexual attraction to the thought or image of themselves as women (autogynephilia), rather than a genuine preference for the male somatotype (Blanchard, 1989; Lawrence, 2005). In our view, it did not appear that the patients' sexual orientation were similar to the autogynephilic images and fantasies described by Blanchard (1989) and it is also possible that this aspect may differ between cultures; the prevalence of sexual attraction in MFs mostly towards males may be characteristic of Hispanic or Asiatic cultures.

In a previous study from Singapore (Tsoi, 1990, 1992), a similar percentage of these patients in both groups had no sex life and had never participated in either homosexual or heterosexual activity, but clearly expressed their sexual orientation. This is probably due to the difficulties that patients experience before and during the transitional period.

In agreement with previous research (Blanchard et al., 1987; Esteva de Antonio et al., 2001), we also found a high percentage of MFs who started taking hormones without the physician's prescription. This practice, which may increase the morbidity (Becerra, de Luis, & Piédrola, 1999), reflects the problems that existed for many years in obtaining treatment in public hospitals in Spain and the intense discomfort felt by these patients regarding their assigned sex.

With regard to psychiatric comorbidity, the most prevalent mental disorders in our sample were lifetime adjustment disorder and social phobia in both groups, and alcohol and substance-related disorders in MF group. Haraldsen and Dahl (2000) also found substance abuse, anxiety disorders, and major depression the most prevalent diagnoses. Psychological testing with our sample found that transsexuals lacked significant psychopathology, although a large number of MFs in the first stages of sex reassignment may experience more psychological distress than patients in the later stages (Gómez-Gil, Vidal-Hagemeijer, & Salamero, in press). Hormonal and surgical sex reassignment have been reported to improve quality of life (Mate-Kole, Freschi, & Robin, 1988, 1990; Newfield, Hart, Dibble, & Kohler, 2006). In agreement with the U.S. study by Cole et al. (1997) and with the Swiss study by Hepp et al., (2005), the prevalence of primary disorders such as psychotic disorders, major depression, bipolar disorder, or obsessive-compulsive disorder was not increased. The higher frequency of current and lifetime alcohol or drug abuse

or dependence in the MF group with respect to the FM group found in our study was also reported by Hepp et al. (2005) and by Verschoor and Poortinga (1988), but not by Landén et al. (1996). In contrast, the studies performed in Belgium (De Cuypere et al., 1995) and the U.S. (Cole et al., 1997) found a higher prevalence of previous substance abuse in both sexes than in our study. The frequencies of previous psychiatric treatment in our study were similar to those obtained in Sweden (Landén et al., 1998), The Netherlands (Verschoor & Poortinga, 1988), and Belgium (De Cuypere et al., 1995). In summary, in agreement with other studies (Cole et al., 1997; De Cuypere et al., 1995; Hepp et al., 2005), our data suggest that the prevalence of reported primary psychiatric problems is not high and that most patients had no additional current Axis I diagnosis. Nevertheless, psychiatric difficulties in adjustment and substance-related disorders are extremely relevant to the individual patient because they are likely to have a negative influence on the experience of the sex reassignment procedure. Prompt, adequate specialized attention may help prevent or alleviate these secondary psychopathologies that may result from the enormous difficulties in coping with the gender dysphoria (Gómez-Gil & Peri-Nogués, 2002).

Our study had three main limitations. First, we lack information on comorbidity with personality disorders in these patients. Work currently underway at our center aims to correct this. Second, the low prevalence found in some categories, particularly in psychiatric diagnosis, meant that the categories had to be grouped to make it possible to calculate statistics for between-group comparisons. Finally, the sample was not representative of all transsexuals since an unknown percentage of these patients do not undergo professional assessment. Nevertheless, we can assume that most patients with GID living in our autonomous region were treated at the Hospital Clínic in Barcelona. The sample can, therefore, be regarded as representative of transsexual patients seeking professional treatment in accordance with the Standards of Care of the Harry Benjamin Gender Dysphoria Association (Meyer et al., 2001).

Despite these limitations, the results of the present study suggest three things. First, transsexualism manifests itself differently in MFs and FMs. Social acceptance appears to be lower for MFs and the repercussions greater, since these patients have lower employment status and are more likely to have alcohol and substance problems. Second, in spite of cultural differences that may modulate the presentation and behavioral expression of this condition, notable similarities are found between countries. Third, the results provide further support for the notion that transsexualism is not necessarily associated with severe comorbid psychiatric disorders. Specialized gender psychiatrists and psychologists may be needed to help patients to confront difficulties during this vulnerable phase of their lives and to prevent much unnecessary mental suffering.

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