

ORIGINAL RESEARCH—INTERSEX AND GENDER IDENTITY

Comparison of Masculine and Feminine Gender Roles in Iranian Patients with Gender Identity Disorder

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ABSTRACT

Introduction. Gender identity disorders (GID) are heterogeneous disorders that may be influenced by culture and social norms.

Aim. The aim of this study was to determine masculine and feminine gender roles in a group of Iranian patients with GID and compare these roles with two control groups.

Methods. Twelve male-to-female (MF) and 27 female-to-male (FM) individuals with GID referred to Tehran Psychiatric Institute in Tehran, I. R. Iran were evaluated by self-report inventories and were compared with two groups of healthy controls (81 men and 89 women). Diagnoses were established based on the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) criteria. Data analysis was done using analysis of variance and chi-squared test.

Main Outcome Measures. Masculine and feminine gender roles were assessed by two questionnaires: (i) Gender-Masculine (GM) and Gender-Feminine (GF) scales derived from the Minnesota Multiphasic Inventory-2 (MMPI-2); (ii) Bem Sex Role Inventory (BSRI).

Results. In the scales of masculinity, MF-GID individuals scored as male controls, but lower than female controls. FM-GID individuals scored similar to female controls and higher than male controls. In femininity scales, MF-GID individuals and control women seemed similar, and both scored higher than the other groups. FM-GID persons were considered less feminine than both controls in the GF scale of MMPI-2, but not in the BSRI. In both scales, FM-GID persons had higher scores than control women and MF-GID individuals.

Conclusion. Iranian FM-GID individuals were less feminine than normal men. However, MF-GID individuals were similar to normal women or more feminine. Cultural considerations remain to be investigated. **Alavi K, Eftekhari M and Jalali Nadoushan AH. Comparison of masculine and feminine gender roles in Iranian patients with gender identity disorder. Sex Med 2015;3:261–268.**

Key Words. Gender Identity Disorder; Masculinity; Femininity; Gender Roles

Introduction

There are many genetic resemblances between men and women, but the distinction between them is one of the basic principles of organized society for every human culture. In a society, it is

necessary for boys and girls to sense the specific skills of their own genders and to acquire sex-specific self-concepts and personality attributes to be masculine or feminine as defined by that society or particular culture [1]. Sex-typing is a process by which a society transmutes man and woman into

masculine and feminine [2]. On the other hand, gender identity is a person's sense about masculinity or femininity, which normally matches the person's anatomical sex [3]. A person with gender identity disorder (GID) has a persistent desire to be of the other sex, shows strong identification with the desired sex, behaves as the other sex, and is self-convicted that he or she possesses the typical feelings and emotions of the other sex [4]. Many studies have compared the personality and characteristics of individuals suffering from GID with normal individuals in order to have a better understanding of GID, a proper disorder diagnosis, and a clarification of its origin [5–8]. As men and women have different personality and characteristic gender-related traits, it is possible for individuals with GID to be different than normal people regarding these traits. GID patients who have an incongruous gender identity with their anatomical sex are known for their opposite gender roles. In simpler terms, it is predicted that biological men with GID (male-to-female GID; MF-GID) are more feminine and less masculine than the control men while biological women with GID (female-to-male GID; FM-GID) are more masculine and less feminine than the control women. This expectation could be more complicated when society accepts that strong pressure toward the behavior is congruent with anatomical sex [9]. Therefore, it could be possible that gender roles and gender identity are not compatible in GID patients, and that they could act based on both gender attributes. Another assumption is that GID patients have a much greater deviation from the gender with which they have identified than non-GID individuals and seem more unconventional. Based on that, it is anticipated that MF-GID subjects have more femininity and less masculinity, and similarly, FM-GID are more masculine and have less femininity compared with the biologically same sex control groups [9]. Another question related to this is if GID in women is the mirror reflex of the gender role pattern of men or not. Based on previous studies, clinical and psychological images differ significantly between MF- and FM-GID individuals [5,10–15].

Different methods have been used to compare gender roles in humans, including transsexuals. Some predated studies assumed that masculinity and femininity are two opposite ends of a one-dimensional spectrum. However, since the 1970s, a new approach has been formed to study masculinity and femininity as two separate dimensions. Bem provided a scale called Bem Sex Role Inven-

tory (BSRI) for this new measurement paradigm [16,17], but so far, only a few studies using this questionnaire have been conducted on patients with GID [9,18–25], and few studies have done a direct comparison between different groups of GID patients and control groups [9,22,26,27]. Based on these studies, GID patients showed the gender schema specifications based on their opposite sex, although MF-GID individuals may be more deviant from the desired sex than FM-GID ones [22,25]. It may be proposed that MF-GID patients are more unusual or unconventional. It is also more likely for FM-GID individuals than the MF-GID group to combine their previous gender roles with a new identity instead of denying them all. The latter feature is seen more in MF-GID individuals [9].

Another major issue in sex-typing and the concept of gender identity is the possible cultural differences in this phenomenon, based on cultural norms and expectations [34]. For example, in Poland [9], biologically male transsexuals are as masculine as control women, but less masculine than control men. In Spain [22], masculinity scores did not significantly differ among MF and FM transsexuals and control men and women. However, in both studies, MF transsexuals were as feminine as control women, and FM transsexuals were more feminine than control men. It remains unclear, then, if this discrepancy is observable in other countries and how these patterns are influenced by social factors, personality characteristics, and individual's attitude.

Aim

The aim of this study was to determine the gender roles in a group of patients with GID and to compare them with two male and female control groups.

Methods and Main Outcome Measures

Participants

This study was composed of a population of men and women with GID referred to Tehran Psychiatric Institute (Tehran, I. R. Iran) in 2009–2010. Tehran Psychiatric Institute is one of the greatest psychiatric institutes in Iran. Traditionally, a majority of GID patients refer to it for diagnosing their problems and approaching proper management, and many other GID patients are referred to it by the Iranian Legal Medical Organization for

legal issues of confirming diagnosis, permitting sexual reassignment, and obtaining new identity documents. The diagnosis of GID was established according to the Diagnostic and Statistical Manual of Mental Disorders—fourth edition, Text Revision (DSM-IV-TR) criteria [4] and was approved by two psychiatric experts of academic staff in Tehran Psychiatric Institute, separately. In addition to clinical and psychiatric interviews, individuals' karyotype was attached to the medical file to determine the sex chromosomal arrangement. A total of 39 individuals with GID (12 MF-GID and 27 FM-GID individuals) were recruited in this study and evaluated consecutively in Tehran Psychiatric Institute. This population included all patients who were referred to the Tehran Psychiatry Institute from March 2009 to February 2010. Other than the established diagnosis of GID, inclusion criteria to enroll in the study were an age over 15 years, a minimum education of 9 years (based on the formal educational system in Iran), no known psychotic disorder, no undergoing of reassignment surgery, and willingness to participate in the study, according to an informed consent. General criteria for control subjects to enter the study were similar to GID groups; however, they were well-adjusted to their biological sex and free of gender-identity problems. Eighty-nine female and 81 male control subjects were evaluated. These individuals were all selected from the Tehran Psychiatric Institute and Yazd Mojibian Hospital staff who met the study's inclusion criteria. To select the control groups, first, demographic questionnaires and an invitation to participate were distributed to all personnel. After evaluating eligibility of individuals and providing he/she agreed to participate, the questionnaire package was distributed to all eligible individuals. All subjects were informed that the results of the questionnaire were confidential and had no occupational, educational, or legal consequences.

The demographic characteristics of the subjects, including age, educational level, and sexual

orientation, were recorded. Data from sexual orientation of these individuals have been published [28]. Age and educational level of GID and control groups are reported in Table 1.

The study protocol was approved by research consultants of the Psychiatry Department and Mental Health Research Center of Iran University of Medical Sciences, as official administrators of research in the University.

Measurements

To assess masculine and feminine gender roles, we used two different inventories: Gender-Masculine (GM) and Gender-Feminine (GF) scales derived from Minnesota Multiphase Personality Inventory-2 (MMPI-2) and the Bem Sex-Role Inventory (BSRI). GM and GF scales, composed of 93 items, including 47 in the GM scale and 46 in the GF scale, have been derived by Peterson and Dahlstrom, based on the pattern of answers of the restandardization sample for MMPI-2 [29]. They selected items from which at least 70% of a respective sex group endorsed similarly and at least 10% difference was observed between frequencies of men and women's pattern of endorsement. Items of these scales are contributed to traditional masculine and feminine interests, activities, and adjectives. Similar to MMPI-2, these items were answered as a binary scale. To prepare a valid adoption of these scales, we used a Persian translation of MMPI-2, which has been previously published (Sharifi HP and Nikkhoo MR: MMPI and MMPI-2: Interpretation Manual for Counselors and Clinicians; Sokhan Publishing, Tehran; 1999). Initially, we presented the original 93-item scale to a group of healthy individuals (control groups). Item selection criteria were: (i) there was a statistically significant difference between men and women's pattern of endorsement to each item; and (ii) more than 50% of a respective sex member endorsed that item. The final selected items included 53 items of the original scales, 40 in GM scale and 42 in GF scale (29 common items). Oppo-

Table 1 Characteristics of gender identity disorder (GID) individuals and control groups

	Age (year)		Educational level (%)	
	Mean \pm SD	Median	Lower than high school diploma	Median
Male-to-female GID	30.8 \pm 6.9	32	18 (22)	63 (78)
Female-to-male GID	30.5 \pm 9.1	29	11 (12)	78 (88)
Male controls	27.4 \pm 7.9	25	3 (25)	9 (75)
Female controls	27.2 \pm 6.8	25	2 (7)	25 (93)

SD = standard deviation.

site to the original scales, our derived ones included some mutual items scored in the opposite direction in the two scales. The validation process is published elsewhere [30]. In summary, Cronbach's alpha coefficient of the Persian version of GM and GF scales was 0.831 and 0.894, respectively. Scores of the Persian version of the scales derived from original GM and GF scales were significantly correlated with the respective masculinity and femininity scales of the BSRI; however, some discrepancies were seen.

BSRI is another well-validated inventory to assess gender role attributes [17]. Its original inventory includes 20 male and 20 female attributes, along with 20 neutral or androgynous adjectives, each answered using a 7-point Likert scale, from 1 (*never*) to 7 (*always*). The score of each scale is the sum of ratings on individual items of that scale. We used Persian-adjusted scores based on inventories fulfilled by control groups of the study. Accordingly, we selected 13 adjectives significantly attributed to healthy Iranian men and 13 adjectives to healthy Iranian women to evaluate gender masculine and feminine traits. Original Cronbach's alpha coefficient for the BSRI was 0.86 for masculinity and 0.82 for femininity scales, and the test-retest reliability coefficients were at least 0.90 for each of the masculinity, femininity, and androgyny scales [16]. In our Persian version, alpha coefficient was 0.717 for masculinity and 0.564 for femininity scales.

Statistical Analysis

The collected data were analyzed using the statistical software SPSS-10 (SPSS Inc., Chicago, IL, USA). To determine statistically significant differences, alpha was set at 0.05. To compare raw scores of the four groups (MF-GID and FM-GID individuals, control men, and control women), we used

analysis of variance (ANOVA). If ANOVA showed a significant difference, we used Tukey's post hoc test to pairwise comparisons. A comparison between GID individuals and control groups was also done using categorization of gender roles, using a median-half categorization method, based on scores of control groups. Individuals were divided into four groups based on their score placements on either side of the median:

1. Androgynous: Masculinity score above the normal male median in masculinity scale and femininity score above the normal female median in femininity scale.
2. Typically masculine: Masculinity score above the normal male median in masculinity scale and femininity score lower than the normal female median in femininity scale.
3. Typically feminine: Masculinity scores lower than normal male median in masculinity scale and femininity score above the normal female median in femininity scale.
4. Undifferentiated: masculinity score lower than normal male median in masculinity scale and femininity score lower than normal female median in femininity scale.

Comparisons between the distributions of subjects into four groups were also done by the chi-squared test. The procedure was the same for MMPI-2 and the BSRI inventories, but done independently.

Results

Mean Scores for GM and GF Scales

Mean scores for both GM and GF scales were calculated based on the new version with 53 questions and are shown in Table 2. As shown, there is a significant difference between four groups. The

Table 2 Descriptive statistics of Gender-Masculine (GF) and Gender-Feminine (GF) scale scores of gender identity disorder (GID) individuals and control groups

	Gender-Masculine Scale*		Gender-Feminine Scale**	
	Mean ± SD	95% CI	Mean ± SD	95% CI
Male-to-female GID	15.3 ± 4.6	12.4–18.3	30.7 ± 4.6	27.7–30.6
Female-to-male GID	30.4 ± 3.8	28.9–31.9	14.9 ± 4.0	13.3–16.5
Male controls	28.0 ± 4.4	27.1–29.0	19.1 ± 5.3	17.9–20.3
Female controls	16.9 ± 4.2	16.0–17.8	30.9 ± 3.3	30.2–31.6

* $F = 138.254$; $P < 0.001$; Post hoc test for between-group differences: FM-GID > female controls[†] and MF-GID group[†]; FM-GID group > male controls[‡]; male controls > female controls[†] and MF-GID group[†]

** $F = 155.361$; $P < 0.001$; post hoc test for between-group differences: MF-GID > male controls[†] and FM-GID group[†]; female controls > male controls[†] and MF-GID group[†]; male controls > FM-GID group[†]

[†] $P < 0.001$

[‡] $0.05 < P < 0.1$

Table 3 Sex-typing categorization in gender identity disorder (GID) individuals and control groups based on Gender-Masculine (GM) and Gender-Feminine (GF) scale scores

	Undifferentiated (%)	Feminine (%)	Masculine (%)	Androgynous (%)
Male-to-female GID	4 (33)	8 (67)	–	–
Female-to-male GID	6 (22)	–	21 (78)	–
Male controls	39 (48)	–	42 (52)	–
Female controls	33 (37)	56 (63)	–	–

highest and lowest mean scores of GM scale belonged to the FM-GID and MF-GID groups, respectively. In other words, the GM scale scores for the FM-GID group and male controls were significantly higher than the other two groups.

On the GF scale, the FM-GID group had the lowest scores. As shown in Table 2, there were statistically significant differences among these four groups, except for the MF-GID group and female controls.

Sex-Typing Based on GM and GF Scales

The median of GM scale scores of male controls was 28, and the median of GF scale scores of female controls was 31. Thus, individuals with a GM score of 27 or lower and a GF score of 30 or lower were classified as undifferentiated. Individuals with GM scores of 28 or higher and GF scores of 31 or higher were considered androgynous. Similarly, people who scored at least 28 on the GM scale, but under 31 on the GF scale were considered masculine, and individuals who scored at least 31 on the GF scale, but under 28 on GM scale were classified as feminine. Table 3 shows the classification of individuals based on the information mentioned earlier. Distribution between the four groups showed statistically significant differences (chi-squared test; $\chi^2 = 135.760$, degrees of freedom [df] = 6, $P < 0.001$). No one was considered androgynous.

Mean Scores for Masculinity and Femininity Scales of BSRI

In Table 4, a summary of the individuals' femininity and masculinity scores based on a new Persian version of the BSRI is shown. Masculinity scores of male controls and the FM-GID group were significantly higher than female controls and the MF-GID group. Femininity scores of female controls and the MF-GID group were significantly higher than male controls and the FM-GID group. As shown, the highest masculinity scores belonged to the FM-GID group, and the highest femininity scores belonged to the MF-GID group.

Sex-Typing Based on the BSRI Scores

The median score of masculinity scale of male controls and femininity scale of female controls was 4.46 and 5.69, respectively. The individuals were classified into four groups according to these median scores (Table 5). Individuals' distributions in four groups of subjects were statistically different (chi-squared test; $\chi^2 = 85.890$; df = 9; $P < 0.001$).

Discussion

The aim of this study was to determine the masculine and feminine gender roles in the Iranian GID population. In general, the findings of this study showed that FM-GID individuals have a

Table 4 Descriptive statistics of masculinity and femininity scale scores of gender identity disorder (GID) individuals and control groups based on Bem Sex Role Inventory (BSRI)

	Masculinity*		Femininity**	
	Mean \pm SD	95% CI	Mean \pm SD	95% CI
Male-to-female GID	3.4 \pm 0.5	3.10–3.69	5.9 \pm 0.5	5.55–6.17
Female-to-male GID	4.7 \pm 0.6	4.44–4.91	5.0 \pm 0.7	4.70–5.28
Male controls	4.5 \pm 0.8	4.36–4.71	4.9 \pm 0.8	4.67–5.03
Female controls	3.7 \pm 0.7	3.55–3.83	5.7 \pm 0.8	5.48–5.82

* $F = 30.254$; $P < 0.001$; post hoc test for between-group differences: FM-GID > female controls[†] and MF-GID group[‡]; male controls > female controls[†] and MF-GID group[‡]

** $F = 17.872$; $P < 0.001$; post hoc test for between-group differences: MF-GID > male controls[†] and FM-GID group[‡]; female controls > male controls[†] and MF-GID group[‡]

[†] $P < 0.001$

[‡] $P < 0.05$

Table 5 Sex-typing categorization in gender identity disorder (GID) individuals and control groups based on Bem Sex Role Inventory (BSRI)

	Undifferentiated (%)	Feminine (%)	Masculine (%)	Androgynous (%)
Male-to-female GID	3 (25)	9 (75)	–	–
Female-to-male GID	9 (33)	–	15 (56)	3 (11)
Male controls	32 (40)	5 (6)	39 (48)	5 (6)
Female controls	32 (36)	29 (33)	5 (6)	9 (10)

dominant masculine gender role, and MF-GID individuals have a dominant feminine gender role. However, there are some discordant points in this rule.

Both the MMPI-2 and BSRI instruments showed that FM-GID individuals had the highest masculinity scores. This implicates that complete or even exaggerated identification occurred with masculine sex roles in the FM-GID group. On the other hand, these masculine scores are not statistically different with the masculinity scores in the male control group. Femininity scores of these groups of GID individuals showed significant differences with the male control group in the GF scale derived from MMPI-2, but not the femininity scale of the BSRI. This shows that FM-GID individuals may merge or even neglect some femininity roles of normal men with high masculine role identification with the desired sex members. It may be concluded that FM-GID individuals may “avoid” feminine gender roles, which was not mentioned in previous studies. Heran-Jeglińska et al. assessed sex-role identification of Polish GID patients based on an instrument similar to the BSRI and showed that FM-GID individuals had masculinity scores different from control men and similar to control women, but in femininity scores, they lay between the two control groups [9]. Based on the Spanish version of the BSRI, Gómez-Gil et al. found that masculinity roles did not differ between FM-GD individuals and the two control groups, but femininity did [22]. This means in the present study, and not in the Polish or Spanish ones, that FM-GID individuals are less feminine than control men. On the other hand, the discrepancies between results of the GM and GF scales of the MMPI-2 and the BSRI may be due to differences in the construct of gender roles in the two instruments [30,31]. While the BSRI is composed of adjectives and phrases approved or preferred by the community for a respective sex, GM and GF scales of the MMPI-2 include items that are statistically more attributed to a sex group. The content of these inventories are different. In the

MMPI-2-derived GM scale, some male interests (e.g. adventure and rough play), some “denial” characteristics of male individuals (e.g. denial of pain or fear), and some occupation preferences (e.g. technology or hunting) are included that are not seen in the BSRI. The same is true for the GF scale. Items in the GM and GF scales are gender-role related versus gender-identity determined.

The other side of our findings connotes complete, but not exaggerated, feminine and masculine sex-role identification of MF-GID individuals with normal women, based on both inventories. Previous studies reported some deviant features of gender role-related features of MF-GID individuals that are not so clearly observed in FM-GID persons [25]. Similar to our findings, Heran-Jeglińska et al. found that masculinity identification in MF-GID persons is not significantly different from female controls and significantly different from male controls [9]. Gómez-Gil et al. realized MF-GID persons showed masculine roles similar to control men and women, but femininity roles similar to female controls and higher than male controls [22]. Coussinoux et al. reported the highest degrees of female gender identification in biologically male transsexuals that was not related to hormonal or surgical treatment [26]. It seems, then, that the patterns of sex-role identification in the three studies resemble each other.

Lippa investigated gender-related traits in a group of transsexuals using several instruments and mentioned that when sex-role identification is assessed by the Personal Attributes Questionnaire, which is constructed similarly with the BSRI, MF transsexuals, and not FM ones, showed extreme identification to the desired sex. However, when individuals assessed themselves regarding their personality or behaviors, FM transsexuals possessed exaggerated identification [27].

Another viewpoint of this study was the process of sex-typing of the GID participants. Based on GM and GF scales, none of the FM-GID individuals were considered feminine or androgynous, and the frequency of masculine individuals

exceeded the normal men (78% vs. 52%). Accordingly, no case of the MF-GID group was sex-typed as masculine or androgynous, and the frequencies of “feminine” individuals were relatively comparable in the MF-GID group and normal women. It should be noted that GM and GF scales are not considered strong instruments to distinguish androgynous and undifferentiated individuals [32,33]. Similar to the study of Gómez-Gil et al. [22], and according to the BSRI, the frequencies of “undetermined” persons were nearly the same in the four groups. However, in the present study, a high frequency of “feminine” individuals was seen in the MF-GID group, compared with normal women. No case of androgyny was seen in the MF-GID group, but more than 10% of FM-GID individuals were classified as androgynous. Contrary to this, Gómez-Gil et al. showed that the frequency of “feminine” MF-GID persons is somehow less than female controls, and a considerable portion of both MF- and FM-transsexuals were considered androgynous. In both studies, these proportions of androgyny in transsexuals may be representative of the frequency of androgyny in the control groups. Fleming et al., using BSRI, found that FM transsexuals were sex-typed dominantly as masculine or androgynous, and this distribution did not differ significantly with male college students. However, MF transsexuals were dominantly considered feminine, and the distribution differed significantly with both the male and female normative population [18].

Our findings about FM-GID and MF-GID groups placed next to each other implicate complete identification of GID individuals with desired sex roles, although some extreme identifications may be observed in the case of femininity roles in the MF-GID groups and exaggerated feminine proportion in sex-typing of the MF-GID group. The last two findings are attributed to the male-dominated context in traditional Iranian society and need to be more closely investigated. In this society, any feminine attribute of a “male” person is humiliated. On the other hand, there is a nonrealistic view of female role reconstruction of MF-GID individuals to be accepted as a new real identity by the society. We are investigating these ambiguities in a series of qualitative studies.

It is noteworthy that the term “gender role” has many applications in sciences such as psychology, psychiatry, and sociology. It is defined in different ways, but perhaps it has been used as the very broad concept beyond simple words or in an obscure form or boxed framework based on researchers’ defined

and used interests. We also did not escape this limitation, so we needed to define it applicably. Therefore, after studying more than a dozen questionnaires about concepts related to gender roles, we considered two inventories: GM and GF scales from MMPI-2 [34] and the BSRI [17]. We tried to adjust items in the inventories to Iranian culture and society [30], but we accept some flaws, including low internal consistencies in the BSRI. Therefore, we must be cautious in interpreting our findings. We do not expect what is measured is a holistic scope of gender role.

Conclusion

Overall, our findings indicate that in GID individuals, there is a complete identification with the desired sex roles, although sometimes this sex-role reconstruction is unrealistic or exaggerated. Then, the frequency of “undifferentiated” individuals has declined compared with the control groups. However, similar to the rarity of androgynous individuals in the control groups, the frequency of “androgynous” persons in the GID groups is negligible. This fact, along with gender ratio differences and estimated prevalence of GID in our country in comparison with many Western countries, may indicate differences in psychopathologic views of GID in Iran.

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References

- 1 Barry H, Bacon MK, Child IL. A cross-cultural survey of some sex differences in socialization. *J Abnorm Psychol* 1957;55:327–32.
- 2 Bem SL. Gender schema theory: A cognitive account of sex typing. *Psychol Rev* 1981;88:354–64.

- 3 Green R. Gender identity disorders. In: Sadock JS, Sadock VA, Ruiz P, eds. *Kaplan & Sadock's comprehensive textbook of psychiatry*. 9th edition. Baltimore: Lippincott Williams & Wilkins; 2009:2099–111.
- 4 American Psychiatry Association. *Diagnostic and statistical manual of mental disorders*. 4th edition. Washington, DC: American Psychiatry Association; 2000. Text revision (DSM-IV-TR).
- 5 Smith YLS, van Goozen SHM, Kuiper AJ, Cohen-Kettenis PT. Transsexual subtypes: Clinical and theoretical significance. *Psychiatry Res* 2005;137:151–60.
- 6 Leavitt F, Berger JC. Clinical patterns among male transsexual candidates with erotic interest in males. *Arch Sex Behav* 1990;19:491–505.
- 7 Lothstein LM. Psychological testing with transsexuals: A 30-year review. *J Pers Assess* 1984;48:500–7.
- 8 Bodlund O, Armelius K. Self-image and personality traits in gender identity disorders: An empirical study. *J Sex Marital Ther* 1995;26:303–17.
- 9 Herman-Jeglińska A, Grabowska A, Dulko S. Masculinity, femininity, and transsexualism. *Arch Sex Behav* 2002;31:527–34.
- 10 Pauly IB. Female transsexualism: Part I. *Arch Sex Behav* 1974;3:487–507.
- 11 Pauly IB. Female transsexualism: Part II. *Arch Sex Behav* 1974;3:509–26.
- 12 Blanchard R, Steiner BW, Clemmensen LH. Gender dysphoria, gender reorientation, and the clinical management of transsexualism. *J Consult Clin Psychol* 1985;53:295–304.
- 13 Kupier B, Cohen-Kettenis PT. Sex reassignment surgery: A study of 141 Dutch transsexuals. *Arch of Sex Behav* 1988;7:439–57.
- 14 Landén M, Wälinder J, Lundström B. Clinical characteristics of a total cohort of female and male applicants for sex reassignment: A descriptive study. *Acta Psychiatr Scand* 1988;97:189–94.
- 15 Cohen-Kettenis PT, Gooren LJG. Transsexualism: A review of etiology, diagnosis and treatment. *J Psychosom Res* 1999;46:315–33.
- 16 Bem SL. The measurement of psychological androgyny. *J Consult Clin Psychol* 1974;42:165–72.
- 17 Bem SL. *Bem Sex-role Inventory: A professional manual*. Palo Alto, CA: Consulting Psychologist Press; 1981.
- 18 Fleming MZ, Jenkins SR, Bugarin C. Questioning current definitions of gender identity: Implications of the Bem Sex-Role Inventory for transsexuals. *Arch Sex Behav* 1980;9:13–26.
- 19 Skerapac C, MacKenzie KR. Psychological self-perception in male transsexuals, homosexuals, and heterosexuals. *Arch Sex Behav* 1981;10:357–70.
- 20 Fleming MZ, MacGowan BR, Salt P. Female-to-male transsexualism and sex roles: Self and spouse ratings on the PAQ. *Arch Sex Behav* 1984;13:51–7.
- 21 Fisher AD, Bandini E, Ricca V, Ferruccio N, Corona G, Meriggiola MC, Jannini EA, Manieri C, Ristori J, Forti G, Mannucci E, Maggi M. Dimensional profiles of male to female gender identity disorder: An exploratory research. *J Sex Med* 2010;7:2487–98.
- 22 Gómez-Gil E, Gómez A, Cañizares S, Guillamón A, Rametti G, Esteva I, Vázquez A, Salamero-Baró M. Clinical utility of the Bem Sex Role Inventory (BSRI) in the Spanish transsexual and nontranssexual population. *J Pers Assess* 2012;94:304–9.
- 23 Wälinder J. *Transsexualism: A study of forty-three cases*. Göteborg, Sweden: Scandinavian University Books; 1967.
- 24 Brems C, Adams RL, Skillman GD. Person drawings by transsexual clients, psychiatric clients, and nonclients compared: Indicators of sex-typing and pathology. *Arch Sex Behav* 1993;22:253–64.
- 25 Cole CM, O'Boyle M, Emory LE, Meyer WJ. Comorbidity of gender dysphoria and other major psychiatric diagnoses. *Arch Sex Behav* 1997;26:13–26.
- 26 Coussinoux S, Gallards T, Smith J, Bourder MC, Cordier B, Brémont C, Poirier MF, Haddou M, Olié JP. Personality tests and gender identification in male transsexuals. *Encephale* 2005;31(1 Pt 1):24–30.
- 27 Lippa RA. Gender-related traits in transsexuals and nontranssexuals. *Arch Sex Behav* 2001;30:603–14.
- 28 Alavi K, Jalali AH, Eftekhari M. Sexual orientation in patients with gender identity disorder. *Iran J Psychiatry Clin Psychol* 2014;20:43–9.
- 29 Peterson CD, Dahlstrom WG. The derivation of gender-role scales GM and GF for MMPI-2 and their relationship to scale 5 (Mf). *J Pers Assess* 1992;59:486–99.
- 30 Alavi K, Jalali Nodiushan AH, Eftekhari M. Masculine and feminine gender roles in healthy Iranian population according to two different constructs: Bem Sex Role Inventory vs. GM and GF scales of MMPI-2. *Iran J Psychiatry Clin Psychol* 2014;20:121–33.
- 31 Johnson ME, Jones G, Brems C. Concurrent validity of the MMPI-2 feminine gender role (GF) and masculine gender role (GM) scales. *J Pers Assess* 1996;66:153–68.
- 32 Woo M, Oei TPS. Empirical investigations of the MMPI-2 gender masculine and gender-feminine scales. *J Individ Dif* 2008;29:1–10.
- 33 Celluci T, Wilkerson A, Mandra D. The MMPI-2 gender-role scales as measures of sex-typing. *Psychol Rep* 1998;83:752–4.
- 34 Ahmadzad-Asl M, Jalali AH, Alavi K, Naserbakht M, Taban M, Mohseninia-Omrani K, Eftekhari M. The epidemiology of transsexualism in Iran. *J Gay Lesbian Mental Health* 2011;15:83–9.