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*Original Article*

# Comparison of demographic characteristics and personality disorders between individuals with male-to-female and female-to-male gender dysphoria

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## **Abstract**

**Introduction:** Psychiatric co-morbidities, including personality disorders (PD), are standard among gender dysphoria (GD) subjects. It has been proposed that the prevalence and severity of PD may have differences in male-to-female (MtF) and female-to-male (FtM) individuals. This study evaluated differences in demographics and personality disorders between MtF and FtM GD subjects.

**Materials and Methods:** This cross-sectional study was conducted in Ibn-e-Sina hospital GD clinic and research center, Mashhad, Iran. Forty subjects, including 20 MtF GD and 20 FtM GD, were enrolled in this study using the non-probability sampling method. Personality traits (PT) and disorders were assessed using Shedler-Westen Assessment Procedure (SWAP-200). Data were analyzed by t-test,  $\chi^2$  and Fischer's exact test, and logistic regression in SPSS software version 16.

**Results:** School refusal ( $P=0.025$ ) and unemployment ( $P=0.001$ ) were more common in MtF than FtM GD subjects. One or more PD was diagnosed in 24 (60%) subjects. Histrionic personality disorder was more prevalent in MtF than FtM GD subjects ( $P=0.41$ ). FtM GD persons achieve better high function scores ( $P=0.02$ ). Lower education and adult onset of GD were significantly correlated to personality disorders in GD subjects.

**Conclusion:** Personality disorders are prevalent in male to female and female to male gender dysphoria subjects, which should be considered in the assessment and treatment planning of gender dysphoria patients. Male to female gender dysphoria may have lower social and psychiatric functions than female to male gender dysphoria subjects.

**Keywords:** Gender dysphoria, Personality disorders, Shedler-Westen Assessment Procedure

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## Introduction

Gender identity disorder, formerly known as transsexualism, is characterized by a strong and persistent identification with the opposite sex and discomfort with one's own sex (1-3). In the 4th edition of the diagnostic and statistical manual of mental disorders (DSM), gender identity disorder is referred to subjects with a strong, persistent cross-gender identification and a long-standing discomfort with their sex or sense of inappropriateness in the gender role of that sex (4). In the latest edition of this manual (DSM-5), the term gender identity disorder is substituted by gender dysphoria (GD) (5).

Although major psychotic disorders in GD persons are relatively uncommon, clinical and experimental evidence proved that other psychiatric co-morbidities, especially personality disorders (PDs), are more common among GD subjects (3).

The prevalence of PDs among GD persons has been reported between 15-70% in previous investigations (6-8).

Therefore, it has been proposed that personality disorders, mainly B cluster, are more common in GD subjects than in the general population. However, despite clinical evidence, few studies have been conducted to assess PDs among GD subjects using standard tools outside North America and Western Europe. Some previous studies have shown that there might be differences in psychiatric co-morbidities between female-to-male (FtM) and male-to-female (MtF) subjects.

Hoshiai et al. (9) found that the total rate of psychiatric co-morbidities was higher in MtF than in FtM subjects. Mood and anxiety disorders have been reported more commonly in MtF GD subjects (10).

Some recent evidence suggested that MtF GD persons may have a higher prevalence of more severe forms of PDs. In Meybodi et al. (11) study on GD subjects, the prevalence of personality disorders was higher in MtF subjects. Some others claimed that MtF subjects are more vulnerable and non-adaptive than FtM subjects. This study was conducted to assess the difference in demographics and PDs between MtF and FtM GD subjects who have been referred for psychological evaluation during sex reassignment therapy.

## Materials and Methods

This cross-sectional study was conducted between October 2016 to March 2017 in Ibn-e-Sina hospital GD clinic and research center, Mashhad, Iran. All subjects provided informed consent for participating in this study and recording the interview. Shiraz University ethical board committee approved the study protocol.

Forty subjects with GD, including 20 MtF and 20 FtM subjects, were enrolled in this study. A non-probability sampling method was used. Subjects who fulfilled the GD criteria according to DSM-5 were included. Under 18 years of age, medical conditions involving sex development and current major psychiatric co-morbidities were considered exclusion criteria.

### Research instrument

*A) Westen-Shedler assessment procedure (SWAP):* SWAP is a relatively new method for the assessment of PDs integrating the clinical and experimental measurements based on semi-structured interviews (12). SWAP used a dimensional approach rather than a categorical one, focusing on the extent of personality syndromes from less to more severe. The SWAP-200 comprises 200 statements illustrating personality characteristics. The observer should score the items from 0 (do not apply the subject) to 8 (directly apply the subject). SWAP-200 software generates three personality score profiles, including DSM-5 prototypes, Q-factor of SWAP-200 prototypes, and factor T-scores (12). In this study, we only reported the DSM-5 personality prototype. A score  $\geq 60$  in each personality prototype was considered PD, and a score  $\geq 55$  means the subject has PT (12).

Various studies have shown the validity and reliability of SWAP-200 and translations (13,14). Moreover, the clinical relevance of SWAP-200 is assessed in other investigations (15,16). Persian version of SWAP-200 was evaluated by Sadeghi et al. (17) and proved a valid and reliable tool.

All clinical interviews were performed with the GD subjects by the same experienced psychologist.

These 2-4 hours interviews were voice-recorded. SWAP cards were sorted after reassessing the recorded interviews. A commercially available Persian version of SWAP-200 cards (Binesh No Publishing Co., Tehran, Iran) was used for this

study. In the evaluation of demographic characteristics, school refusal was defined as the refusal to attend school (before university) for at least one month. Any sexual activity with or without intercourse was considered sexual activity. Unemployment was defined as a lack of part-time or full-time jobs, excluding the students. The age at which the individual first felt discomfort with his or her sexual identity was considered the age of onset. The age of onset was categorized as childhood (elementary school or before) and adulthood (after elementary school).

Using an independent T-Test, the age and personality dimensions scores were compared between MtF and FtM GD subjects. Mann-Whitney U test was used to compare the average number of personality disorders between these two groups. Differences in nominal and ordinal variables such as the prevalence of each personality disorder and trait, level of education, and school refusal in MtF and FtM individuals were evaluated by the  $\chi^2$  test. Potential factors affecting personality disorders in GD subjects were assessed using univariate and multivariate analysis. In multivariate analysis, insignificant

variables were removed in a backward style, and the most parsimonious model was attained by removing variables with a *P* value  $>0.1$ . Statistical analysis was performed using SPSS for Windows software version 16 (SPSS, Inc, USA). *P* value less than 0.05 was considered statistically significant.

## Results

The mean age of our subjects was  $23.4 \pm 5.7$  years (range: 18-44). At the study time, 25 subjects (62.5%) had not started any treatment, and 15 (37.5%) received hormonal therapy. None of the participants had undergone genital surgery.

The mean age of MtF subjects was  $23.8 \pm 6.6$  years which was not statistically different from FtM ( $23.1 \pm 4.8$  years) subjects ( $t=0.35$ ;  $P=0.65$ ). The current rate of unemployment was higher in MtF subjects; eighteen (90%) FtM and 7 (35%) MtF subjects were employees or student ( $\chi^2=12.9$ ;  $P=0.001$ ). School refusal was significantly higher in MtF (60%) than FtM (25%) subjects ( $\chi^2=3.75$ ;  $P=0.025$ ). Other characteristics were similar in the two study groups (Table 1).

**Table 1.** Comparison of demographic and clinical characteristics in MtF and FtM GD subjects

Variables		MtF(n=20)	FtM(n=20)	$\chi^2$ , df, <i>P</i> value
Level of education	High school or before	12 (60%)	8 (40%)	1.6; df=1; $P=0.206$
	University and higher	8 (40%)	12 (60%)	
Employment	Student or employed	7 (35%)	18 (90%)	12.9; df=1; $P=0.001$
	unemployed	13 (65%)	2 (10%)	
Divorce of parents		10 (50%)	7 (35%)	1.39; df=1; $P=0.499$
Only-child status		2 (10%)	3 (15%)	0.229; df=1; $P=1.0$
School refusal		12 (60%)	5 (25%)	3.75; df=1; $P=0.025$
Age at onset	Childhood	12 (60%)	11 (55%)	0.1; df=1; $P=0.744$
	Adulthood	8 (40%)	9 (45%)	
Sexual activity	with same biological sex	14 (70%)	13 (65%)	5.03; df=2; $P=0.109$
	with opposite biological sex	0	4 (20%)	
	with both	6 (30%)	3 (15%)	
History of mood disorder		4 (20%)	6 (30%)	0.53; df=1; $P=0.465$

MtF= Male to female; FtM= Female to male; GD= Gender dysphoria

One or more PD was observed in 24 (60%) subjects. The mean number of PD for each subject was  $0.95 \pm 0.98$ . Mean number of PD was statistically similar in MtF ( $1.15 \pm 1.13$ ) and FtM ( $0.75 \pm 0.78$ ) subjects ( $z=-1.04$ ;  $P=0.375$ ). The mean number of PD and PT was also similar in

the two groups. One or more PD was diagnosed in 13 (65%) MtF and 11 (55%) FtM GD subjects ( $\chi^2=0.42$ ;  $P=0.519$ ). There was also no statistical difference between MtF and FtM individuals considering both PD and PT (Table 2).

**Table 2.** Comparison of rate of personality disorders in MtF and FtM GD subjects

Variables		MtF (n=20)	FtM (n=20)	df, P value
Total personality disorders	Mean ± SD	1.15±1.13	0.75±0.78	Z=-1.04; P=0.327
Total personality traits and disorders	Mean ± SD	1.75±1.25	1.85±1.34	t=-0.24; df=38; P=0.809
One or more personality disorders		13 (65%)	11 (55%)	$\chi^2=0.42$ ; df=1; P=0.519
One or more personality traits or disorders		15 (75%)	16 (80%)	$\chi^2=0.14$ ; df=1; P=0.705

MtF= Male to female; FtM= Female to male; GD= Gender dysphoria

In MtF GD subjects, histrionic PD and PT (50%) was the most frequently diagnosed personality abnormality, followed by narcissistic PD and PT (35%), antisocial PD and PT (25%), and dependent PD and PT (20%). Narcissistic PD and PT (60%), histrionic PD and PT (45%), antisocial

PD and PT (25%), and Obsessive-compulsive PD and PT (15%) were the most common personality abnormality in FtM subjects. Comparison of PD in two groups revealed that only histrionic PD was more common in MtF (50%) than FtM (15%) GD subjects ( $\chi^2=5.58$ ; P=0.41) (Table 3).

**Table 3.** Comparison of personality disorders subtypes in MtF and FtM GD subjects

Personality disorders	MtF(n=20)	FtM(n=20)	
Paranoid	1 (5%)	0	1.02; df=1; P=1.0
Schizoid	1 (5%)	1 (5%)	
Schizotypal	1 (5%)	0	1.02; df=1; P=1.0
Antisocial	2 (10%)	2 (10%)	
Narcissistic	6 (30%)	8 (40%)	0.44; df=1; P=0.51
Hysterionic	10 (50%)	3 (15%)	5.58; df=1; P=0.02
Borderline	0	0	
Obsessive - compulsive	1 (5%)	1 (5%)	
Dependent	1 (5%)	0	1.02; df=1; P=1.0
Avoidant	0	0	
Depressive	0	0	
Passive- aggressive	0	0	

MtF= Male to female; FtM= Female to male; GD= Gender dysphoria

Personality dimensions scores in MtF and FtM individuals were illustrated in Table 4. MtF subjects had higher scores in schizotypal and

dependent dimension than FtM subjects. In contrast, FtM subjects achieved better high function scores.

**Table 4.** Comparison of personality dimensions scores in MtF and FtM GD subjects

Personality disorders	MtF(n=20)	FtM(n=20)	
Paranoid	47.06±5.21	47.98±6.73	-0.48; df=38; P=0.632
Schizoid	45.51±6.61	41.4±6.71	1.95; df=38; P=0.059
Schizotypal	48.75±5.74	41.74±5.19	3.4; df=38; P=0.002
Antisocial	50.07±6.58	51.8±6.71	-0.82; df=38; P=0.416
Narcissistic	53.72±9.71	54.3±8.42	-0.2; df=38; P=0.841
Hysterionic	55.77±9.89	49.89±9.95	1.87; df=38; P=0.069
Borderline	46.17±6.58	43.3±8.66	1.81; df=38; P=0.248
Obsessive - compulsive	40.69±8.17	44.48±8.1	-1.44; df=38; P=0.248
Dependent	47.77±5.78	41.25±5.83	1.93; df=38; P=0.061
Avoidant	44.26±6.62	40.42±5.89	3.05; df=38; P=0.004
Depressive	44.66±7.78	42.17±7.13	1.05; df=38; P=0.299
Passive- aggressive	45±4.63	43.2±7.12	0.94; df=38; P=0.351

MtF= Male to female; FtM= Female to male; GD= Gender dysphoria

Demographic and clinical characteristics in subjects with or without personality disorder were compared in table 5. Multivariate logistic regression analysis was shown that lower level of education (OR=5.1 [95% CI: 1.01-25.67];

$P=0.026$ ) and adulthood onset of GD (OR=6.24 [95% CI: 1.1-35.44];  $P=0.039$ ) were significantly correlated with presence of PD in GD subjects (Table 6).

**Table 5.** Comparison of demographic and clinical characteristics between subjects with or without personality disorders

Variables		With personality disorder(n=24)	Without personality disorder(n=16)	$\chi^2$ , df, P value
Level of education	High school or before	15 (62.5%)	5 (31.2%)	3.75; df=1; $P=0.053$
	University and higher	9 (37.5%)	11 (68.8%)	
Divorce of parents		10 (41.7%)	7 (43.8%)	0.17; df=1; $P=0.796$
School refusal		9 (37.5%)	9 (56.2%)	0.15; df=1; $P=0.693$
Age at onset	Childhood	11 (45.8%)	12 (75%)	3.34; df=1; $P=0.068$
	Adulthood	13 (54.2%)	4 (25%)	
Sexual activity	with same biological sex	16 (66.7%)	11 (68.8%)	0.34; df=2; $P=1.0$
	with opposite biological sex	2 (8.3%)	2 (12.5%)	
	with both	6 (25%)	3 (18.8%)	
History of mood disorder		4 (16.7%)	6 (37.5%)	2.22; df=1; $P=0.136$

MtF= Male to female; FtM= Female to male; GD= Gender dysphoria

**Table 6.** Logistic regression analysis evaluating potential factors affecting personality disorders in GD subjects

Variables	B	SE	Wald	OR (95% CI)	P value
Level of education (high school or before)	1.63	0.82	3.91	5.1 (1.01-25.67)	0.026
Age of onset (adulthood)	1.83	0.88	4.27	6.24 (1.1-35.44)	0.039

GD= Gender dysphoria; SE= Standard error; OR= Odds ratio; CI= Confidence interval

**Discussion**

Regarding the low prevalence of GD and conservative culture in Iran, little information about these subjects' demographic characteristics and psychiatric co-morbidities is available. Therefore, our study aimed to assess differences in demographic characteristics and PDs of individuals with GD in Iran.

In the current study, school refusal was more common in MtF individuals than FtMs. Similarly, in Asgari et al. (18) study, most MtF subjects had only finished high school (45%), whereas most FtM subjects had at least achieved a bachelor's degree. Therefore, it could be proposed that peer rejection, especially in adolescence, may have a higher rate of school refusal in MtFs. In Iranian culture, feminine characteristics in males are traditionally denounced, whereas girls with masculine characteristics are encouraged. However, it is requisite to consider cultural issues. In Terada *et al.* (19) study in Japan, no

difference was observed in the school refusal rate between Mtf and FtM individuals, although the rate of school refusal in both groups was significantly higher than in the general population. In our study, the unemployment rate in FtM subjects was lower than MtFs, which could be attributed to higher function in FtM subjects. Better high function scores in our study support this claim. Also, the higher employment rate in FtM subjects might be related to a higher level of education in this group.

In the present study, the mean number of PD was slightly in MtF (1.15±1.13) and FtM (0.75±0.78) subjects, although the difference did not reach significance. On the other hand, FtM subjects had higher functional scores. Studies concerning differences in psychiatric co-morbidities and personality disorders between MtF and FtM GD subjects resulted in an inconsistency; some authors suggested that MtF persons have a more severe psychopathological

profile (11,20). Meybodi et al. (11) found a higher prevalence of PDs among MtF than FtM subjects. In contrast, other investigations did not show a significant difference in PDs between MtF and FtM subjects (7,21). However, even those studies declared that some specific personality disorders are more prevalent among MtF subjects (21).

Moreover, MtF persons are more likely to have severe PDs and lower function (22). Similarly, Hatami et al. (23) showed that MtF subjects indicated more feelings of abandonment, loneliness, shame, and social isolation than FtM subjects, using maladaptive early schemas. According to this study, gender plays an essential role in developing special maladaptive early schemas in GD persons, especially in MtFs, who are more vulnerable and non-adaptive than FtMs. In our study, cluster B PDs including histrionic, narcissistic, and anti-social personality disorders, were prevalent in both groups, but histrionic PD was more prevalent in MtFs. Moreover, schizotypal and dependent personality dimensions scores were higher in MtF individuals. Investigations concerning differences in PD between MtF and FtM GD individuals have shown controversial results; Nourian et al. (24) study on MtF GD subjects using Millon clinical multi-axial inventory (MCMI-III) represented that GD subjects achieved higher scores in dependent, histrionic, anti-social, passive-aggressive, borderline, paranoid scales than the control group. In Meybodi et al. (11) study, schizoid, schizotypal, and avoidant PDs were more prevalent in the MtF group. Madeddu et al. (6) found avoidant, histrionic, and borderline PDs more prevalent in MtF persons, although the differences were insignificant. A higher cluster of B PDs emphasizes the need to thoroughly evaluate sex reassignment therapy candidates. Cluster B characteristics, including identity instability and compulsion, should be considered during this assessment. We did not diagnose borderline PD in any GD subjects in our study. Borderline PD was found as the most frequent PD in GD subjects in older investigations. Even it has been proposed that transsexualism may manifest borderline

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personality (25). However, recent evidence does not support this idea. Similar to our findings, borderline PD was diagnosed only in 1.8% of GD subjects in Meybodi et al. (11) study.

FtM persons achieved better high function scores in our study. High scores in the psychological health index, shown as a high function score in the DSM prototype, indicate psychological capacities in creating meaningful relationships, using talents, and recognizing alternative options. Matsumoto *et al.* (26) evaluated stress-coping strategies in GD subjects and their relation to demographic characteristics. They found that FTM GID patients were significantly more reliant on positive reappraisal strategies, which could not explain by other demographic characteristics. Miyajima et al. (20) showed higher reward dependence and cooperativeness in FtM than MtF subjects. This might promise better social functioning and adjustment in the FtM group.

The lower level of education and adult onset of GD were significantly correlated with the presence of PD in our GD persons. However, the odds ratio for identified risk factors has a wide range of 95% confidence interval due to the small sample size; though, this result should interoperate with caution.

Moreover, the small sample size did not allow us to evaluate the risk factors for PD separately in MtF and FtM groups. While our study was not powered to evaluate contributed variables for PD, these preliminary findings should be further evaluated in future studies.

### Conclusion

Personality disorders, mainly histrionic and narcissistic PDs, are frequent among GD subjects and should be considered when evaluating sex reassignment therapy candidates. MtF GD subjects showed more abnormal personality profiles on histrionic, schizotypal, and avoidant scales and scored lower on the psychological health index scale. In addition, MtF persons had a lower education level and a higher unemployment rate. These findings may stress additional psychological and social support for the MtF GD subgroup.

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