



Original Article

# Comparison of demographics 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 common among gender dysphoria (GD) subjects. It has been proposed that prevalence and severity of PD may have differences in male-to-female (MtF) and female-to-male (FtM) individuals. This study was conducted to evaluate 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 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. Totally, 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 both male to female and female to male gender dysphoria subjects, and this should be taken into account 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 4<sup>th</sup> edition of 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 substituted by gender dysphoria (GD) (5).

Although major psychotic disorders in GD persons are relatively uncommon, clinical and experimental evidences 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). It has been proposed that personality disorders, mainly B cluster in are more common GD subjects than general population. Despite clinical evidences, few studies have been conducted to assess PDs among GD subjects using standard tools outside the

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Some previous studies have been 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 total rate of psychiatric co-morbidities were higher in MtF than FtM subjects. Mood and anxiety disorders have been reported more commonly in MtF GD subjects (10). Some recent evidences suggested that MtF GD persons may have higher prevalence more severe form 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 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 had provided informed consent for both participation 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 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 as exclusion criteria.

### Research instrument

- *Westen-Shedler assessment procedure (SWAP)*: SWAP is relatively new method for assessment of PDs integrating the clinical and experimental measurements which based on semi-structured interview (12). SWAP used a dimensional approach rather than categorical, focuses on extent of personality syndromes from less to more severe. The SWAP-200 comprises 200 statements illustrating personality characteristics. 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. Score  $\geq 60$  in each personality prototype

was considered as PD and score  $\geq 55$  means the subject has PT (12).

Various studies have been shown the validity and reliability of SWAP-200 and its translations (13,14). Moreover, 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 as 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 evaluation of demographic characteristics, school refusal was defined as refusal to attend school (before university) for at least 1 month. Any sexual activity with or without intercourse were considered as sexual activity. Unemployment was defined as lack of part time of full time job, excluding the students. The age at which the individuals first felt discomfort with his or her sexual identity was considered as age of onset. The age of onset was categorized as childhood (elementary school or before) and childhood (after elementary school).

Age and personality dimensions scores were compared between MtF and MtF GD subjects using independent T-Test. Mann-Whitney U test was used to compare average number of personality disorders between these two groups. Difference in nominal and ordinal variables such as prevalence of each personality disorder and trait, level of education and school refusal in MtF and FtM individuals were evaluated by  $\chi^2$  test. Potential factors affecting the presence of 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 with the removing variables with  $P$  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

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

Mean age MtF subjects was  $23.8 \pm 6.6$  years which was not statistically different from FtM ( $23.1 \pm 4.8$  years) subjects ( $t=0.35$ ;  $P=0.65$ ). Current rate of unemployment was higher in MtF subjects; eighteen (90%) FtM and 7 (35%) MtF subjects were

employee 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 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, P 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. 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 ( $z=-1.04$ ;  $P=0.375$ ). Mean number of PD

and PT was also similar in 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 $\pm$ SD	$1.15 \pm 1.13$	$0.75 \pm 0.78$	$Z=-1.04$ ; $P=0.327$
Total personality traits and disorders	Mean $\pm$ SD	$1.75 \pm 1.25$	$1.85 \pm 1.34$	$t=-0.24$ ; 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; $P=0.02$
Boarderline	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; $P=0.069$
Boarderline	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; <i>P</i> =0.248
Dependent	47.77±5.78	41.25±5.83	1.93; df=38; <i>P</i> =0.061
Avoidant	44.26±6.62	40.42±5.89	3.05; df=38; <i>P</i> =0.004
Depressive	44.66±7.78	42.17±7.13	1.05; df=38; <i>P</i> =0.299
Passive- aggressive	45±4.63	43.2±7.12	0.94; df=38; <i>P</i> =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, <i>P</i> value
Level of education	High school or before	15 (62.5%)	5 (31.2%)	3.75; df=1; <i>P</i> =0.053
	University and higher	9 (37.5%)	11 (68.8%)	
Divorce of parents		10 (41.7%)	7 (43.8%)	0.17; df=1; <i>P</i> =0.796
School refusal		9 (37.5%)	9 (56.2%)	0.15; df=1; <i>P</i> =0.693
Age at onset	Childhood	11 (45.8%)	12 (75%)	3.34; df=1; <i>P</i> =0.068
	Adulthood	13 (54.2%)	4 (25%)	
Sexual activity	with same biological sex	16 (66.7%)	11 (68.8%)	0.34; df=2; <i>P</i> =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; <i>P</i> =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)	<i>P</i> 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 to low prevalence of GD and conservative culture in Iran, few information is

available about demographic characteristics and psychiatric co-morbidities in these subjects. Our study aimed to assess differences in demographic

characteristics and PDs of individuals with GD in Iran.

In current study, school refusal was more common in MtF individuals than FtMs. Similarly, in Asgari *et al.* (18) study most of MtF subjects had only finished high school (45%) whereas most of FtM subjects had at least achieved a bachelor's degree. It could be proposed that peers rejection especially in adolescence may have a role in 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 school refusal rate between MtF and FtM individuals; although the rate of school refusal in both groups was significantly higher than general population. In our study, rate of unemployment in FtM subjects was lower than MtFs which could be attributed to higher function in FtM subjects. Better high function scores in our study supports this claim. Also the higher rate of employment in FtM subjects might be related to higher level of education in this group.

In the present study, mean number of PD was slightly in MtF ( $1.15 \pm 1.13$ ) and FtM ( $0.75 \pm 0.78$ ) subjects; although the difference didn't reach significance level. 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 were resulted inconsistency; some authors suggested that MtF persons have more severe psychopathological profile (11,20). Meybodi *et al.* (11) found higher prevalence of PDs among MtF than FtM subjects. In contrast, some other investigations did not show 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 feeling of abandonment, loneliness, shame and social isolation in comparison to FtM subjects, using maladaptive early schemas. According to this study, gender plays an important role in development of special maladaptive early schemas in GD persons, especially in MtFs, who are more vulnerable and non-adaptive comparing to 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 by means of Millon clinical multi-axial inventory (MCMI-III) represented that GD subjects achieved higher scores in dependent, histrionic, antisocial, passive-aggressive, borderline, paranoid scales than control group. In Meybodi *et al.* (11) study, schizoid, schizotypal and avoidant PDs were more prevalent in MtF group. Madeddu *et al.* (6) found avoidant, histrionic and borderline PDs more prevalent in MtF persons; although the differences were insignificant. Higher rate of cluster B PDs emphasizes the need for thorough evaluation of sex reassignment therapy candidates. Cluster B characteristics including identity instability and compulsion should take into account during this assessment. We didn't 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 be a manifestation of borderline personality (25). However, recent evidences do 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 psychological health index, showed as high function score in DSM prototype, indicates psychological capacities in creating meaningful relationships, using talents and recognizing alternative options. Matsumoto *et al.* (26) evaluated stress-coping strategies in GD subjects and its 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 FtM group.

Lower level of education and adult onset of GD were significantly correlated with presence of PD in our GD persons. However, odds ratio for identified risk factors has wide range of 95% confidence interval due to small sample size; though, this result should interoperate with caution. Moreover, small sample size didn't 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 further evaluate in future studies.

### Conclusion

Personality disorders mainly histrionic and narcissistic PDs are frequent among GD subjects which should be considered during evaluation of sex reassignment therapy candidates. MtF GD subjects

showed more abnormal personality profile in histrionic, schizotypal and avoidant scales and achieved lower scores in psychological health index scale. In addition, MtF persons had lower level of education and higher rate of unemployment. These findings may stress additional psychological and social support for MtF GD subgroup.

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