

2018

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### Recommended Citation

Khodarahimi, Siamak; Veiskarami, Hassan Ali; and Ovejero Bruna, Maria Mercedes (2018) "Personality Dimensions and Attributional Styles in Individuals with and without Gender Dysphoria," *Journal of Mind and Medical Sciences*: Vol. 5 : Iss. 2 , Article 21. DOI: 10.22543/7674.52.P284293

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## Research article

# Personality dimensions and attributional styles in individuals with and without gender dysphoria

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### Abstract

This research investigates personality dimensions and attributional styles among individuals with and without gender dysphoria in relationship to gender, educational level, and ethnicity. Participants were 60 men and women with and without gender dysphoria. A demographic sheet and two inventories were used. Results showed that patients with gender dysphoria had significantly higher neuroticism and lower agreeableness compared with individuals without gender dysphoria. No significance differences in extraversion, openness to experience, and conscientiousness (based on the “big five” personality model) were found between those with and without gender dysphoria. Also, individuals without gender dysphoria had higher positive attributional styles compared to patients with gender dysphoria. Finally, there were significant effects for gender and ethnicity on personality dimensions, but not for gender, ethnicity, or the ethnicity by gender interaction on the attributional styles.

### Keywords

: gender dysphoria; personality; attributional style; gender; ethnicity

### Highlights

- ✓ Patients with gender dysphoria have significantly higher neuroticism and lower agreeableness.
- ✓ Patients with gender dysphoria have significantly lower positive attributional style.

**To cite this article:** Khodarahimi S, Veiskarami HA, Ovejero Bruna MM. Personality Dimensions and Attributional Styles in Individuals with and without Gender Dysphoria. *J Mind Med Sci.* 2018; 5(2): 284-293. DOI: 10.22543/7674.52.P284293

## Introduction

Sexuality is, and its variations are, products of an individual's genetic sex, gender identity, gender roles, and sexual orientation. Historically, the concept of gender dysphoria has progressed from homosexuality, transsexualism, and gender identity disorder to the current terminology of psychiatry and clinical psychology (1-3). Gender dysphoria is related to a marked incongruence between one's experienced/expressed gender and his/her assigned gender, and is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning (4-6). In practice, gender dysphoria is a diagnostic term that allows individuals access to care and helps to minimize jeopardy in social, occupational, or legal areas; furthermore, gender dysphoria is distinguished from sexual orientation (7, 8). Overall, contemporary studies have shown an increasing incidence of referrals for gender dysphoria diagnosis and a higher rate of psychiatric and developmental problems in those individuals with gender dysphoria (9). Also, the prevalence of male-to-female transition is consistently higher than female-to-male transition in adults with gender dysphoria (10). Nevertheless, controversy yet surrounds the evidence regarding the prevalence of coexisting or comorbid psychopathology in patients with gender dysphoria (10, 11). In contrast with the literature on gender dysphoria and concurrent psychopathology in the Western countries, there is little evidence about its non-disordered personality correlates in general. Thus, this study investigates the role of gender dysphoria on personality dimensions and attributional styles, and determines the roles of gender, ethnicity, and the educational level within a sample of Iranian adults.

### *Personality, attributional styles and gender dysphoria*

Personality and character correlates of homosexuality, transsexualism, and gender identity disorder as precursor labels of gender dysphoria have been investigated in many studies, with few types of personality disorders evident in individuals with homosexuality, transsexual, and gender identity disorder (12-14). In gay, lesbian, bisexual, and transgender individuals, Grant, Flynn, Odlaug and Schreiber (2012) indicated that about 93.8% exhibited at least one personality disorder (i.e. borderline, obsessive-compulsive and avoidant personality disorders) (15-17). Duišin and colleagues (2014) showed that persons with gender dysphoria have significantly more personality disorders compared to individuals in a control group,

particularly with respect to paranoid and avoidant personality disorders (18, 19). Settineri, Merlo, Bruno and Mento (2015) also indicated that the majority of individuals with gender dysphoria showed personality disorders such as paranoia (20), with a prevalence of comorbid personality disorders being about 60% in adults with gender dysphoria (10). Barisic, Duisin, Djordjevic, Vujovic and Bizic (2017) have indicated that the combination of low neuroticism and psychoticism, and high agreeableness and extroversion were good predictors of a successful outcome for post-operative transition in patients with gender dysphoria after undergoing gender re-assignment surgery. However, there has been a lack of non-Western perspectives regarding the relationship between gender dysphoria and non-disordered personality dimensions and attributional styles in adults (21).

### *Theoretical approaches of Gender Dysphoria*

Gender identity is influenced by a combination of biology, socialization, and culture (22). According to the biological approach, the way the fetus develops and functions depends on its innate sensitivity to particular hormones, prenatal brain-sexing, and the availability of the relevant hormones in brain (23-25). Both experimental and clinical investigations of neurological and hormonal substrates of gender dysphoria in adults involve some degree of biological gender differentiation in men's and women's psychological functioning (10, 26). From the biological approach, the benefits of clinical treatment of gender dysphoria are translated into a reduction of social exclusion, and the process of sex-reassignment surgery using biomedical treatment may decrease family psychopathology or stress (27).

From a socio-cultural perspective, family and social learning theories suggest that role-modeling of gender distinction, gender-specific behaviors, and the negative effect of a disturbed relationship with one or both parents may play a part in the development of gender dysphoria (28-31). Overall, socio-cultural theories assume that gender differences in gender dysphoria may be influenced by self-perceived gender roles, gender socialization, and the presence of socio-structural power differentials within a culture (32). Also, individuals with gender dysphoria may suffer from social bias, discrimination, and prejudice, and their basic civil justice might be denied due to stereotypes that are reinforced by labels of mental illness (33, 34). In case of gender dysphoria, Berlin (2016) suggested that both nature and nurture may influence feelings of self-expression and gender identity, particularly in Middle Eastern cultures.

From a psychological perspective, the embryonic markers of gender identity may emerge very early in development (35, 36). Psychological theories suggest that child-rearing and mother-blame may be related to gender dysphoria, and they conceptualize an etiology related to over-involved mothers and distant fathers, as these may disturb typical gender socialization in males (37). According to Zucker and Bradley (1995), the common psychological trait in mothers of boys with gender dysphoria is the need to be nurtured by a female child (38). Corbett (1999) suggested that parental influence and social reinforcement are major variables related to gender dysphoria development (39). This approach speculates that confusion about one's individual personality and sexual identity affects the ability to be intimate, thereby interfering with sexual development (40-42).

From a psychological perspective, psychosocial factors are often conceptualized as having a perpetuating rather than causal role on the emergence of gender dysphoria (10, 43). Lopez, Stewart and Jacobson-Dickman (2016) concluded that those who are validated in their gender dysphoria by supportive family and social environments have more favorable psychological outcomes (44). With respect to gender-linked roles and psychosocial capabilities or resources, the psychological perspective predicts that these variables may play a role in the differences between individuals with and without gender dysphoria with regard to personality traits and attributional styles (45, 46).

## **Materials and Methods**

### *The present study*

According to a biopsychosocial perspective (47, 48), biological differences, modes of familial interaction, and social and cultural factors might produce gender roles conflicts that emerge as gender dysphoria in childhood; in turn, these factors may influence their personality dimensions and attributional styles. Specifically, the present study suggests that complex interactions involving socialization with gender roles in familial and social contexts, the early experience of dysfunctional gender roles, power of gender roles in a person's family life, social stigma and biases, and instrumental outcomes of gender roles may influence personality domains (i.e., neuroticism, extraversion, openness to experience, agreeableness and conscientiousness) and attributional styles (i.e. negative and positive attributional styles) in patients with gender dysphoria.

From an integrative conceptual perspective, the present study assumes that individuals with gender dysphoria encounter numerous psychosocial constraints during their sexual maturity toward their gender identity within a culture. As such, these constraints may influence their personality and attributional style in a negative way. This study further assumes that social stigma, prejudice, and discrimination toward individuals with gender dysphoria and gender non-conformity may also influence their personality dimensions—based on the “Big Five” personality model—and attributional style (43-46). This study thus hypothesizes that in this sample of Iranian adults: (a) the personality dimensions and attributional styles would differ in individuals with and without gender dysphoria; and (b) gender, educational level, and ethnicity—factors related to biological and socio-cultural development—could exert a significant role on personality dimensions and attributional styles.

### *Participants*

The sample consisted of 60 men (30 individuals with gender dysphoria and 30 without gender dysphoria) from Shiraz City, Fars province; Iran. Gender classification of was based on their biological sex in this study. This sample further consisted of 30 males and 30 females (15 individuals with gender dysphoria and 15 individuals without gender dysphoria in each group). The mean and standard deviation of age for individuals with and without gender dysphoria were 28.84 ( $S=1.24$ ) and 30.35 ( $S=1.64$ ) respectively. The educational level ranged from diploma ( $N=30$ ) and skill degree ( $N=18$ ) to bachelor degree ( $N=12$ ). The ethnicity of this sample was included Fars ( $N=43$ ), and Turkish ( $N=17$ ); all participants were Muslims.

### *Assessment Instruments*

A demographic questionnaire gathered information about the participants' status, gender, educational level, and ethnicity. Two standardized inventories were applied: (1) the NEO Personality Inventory-Revised (NEO PI-R), and (2) the Attributional Style Questionnaire (ASQ).

The NEO Personality Inventory-Revised (NEO PI-R; Costa & McCrae, 1992) consists of 240 personality items and three validity items. The NEO PI-R is based on the Five-Factor model and measures the interpersonal, motivational, emotional, and attitudinal styles of adults and adolescents. The NEO PI-R was designed to provide a general description of five domains in the normal personality relevant to clinical situations. These domains include: Neuroticism, Extraversion, Openness to Experience, Agreeableness,

and Conscientiousness. Internal consistency coefficients range from .86 to .95 for domain scales; stability coefficients ranging from .51 to .83 have been found in three-year, six-year, and seven-year longitudinal studies based on the original NEO-PI factors. Test-retest reliability over 6 years for the factors are: N= .83, E= .82, O= .83, A= .63, C= .79 (44). The reliability and validity of the NEO-PI-R have been confirmed by several studies in the Iranian population (49). The reliability of the NEO PI-R domains using Cronbach's alpha internal consistency in this study was: N= .93, E= .88, O= .87, A= .88, C= .89.

The Attributional Style Questionnaire (ASQ; Peterson et al., 1982) is the most widely used psychometric instrument for measuring attributional style. It contains 12 hypothetical events, 6 of them describing positive events ('you meet an old friend who compliments you at your appearance') and 6 describing negative events ('you go out on a certain date and it goes badly'). Events are divided afterwards into an equal number of achievement and interpersonal contexts. The perceived cause of such event is rated along the dimensions of locus (that is due to the person or the situation), stability (likely or unlikely to occur again), and globality (limited in its influence or widespread) using seven-point scales. Scores can be computed for any dimension related to positive and negative events (45). Test-retest coefficient was calculated at .64. The reliability and validity of ASQ has been supported in many studies (50-52). Psychometric properties of ASQ have confirmed in Iranian samples (53). The reliability of the ASQ for positive and negative subscales using Cronbach's alpha internal consistency in this study is .87 and .86.

#### *Procedure*

According to Wilson, VanVoorhis, and Morgan (2007), sample size was considered adequate for comparisons between individuals with and without gender dysphoria (54). All participants with gender dysphoria in the clinical group were recruited from several outpatient psychological clinics. Individuals with gender dysphoria were independently diagnosed based on clinical criteria by two clinical psychologists. The presence of gender dysphoria in clinical sample was further affirmed by a team of medical professionals. This clinical group was selected applying the purposive sampling method within an ex post facto design in which the sample is selected to include people of interest and exclude those who do not suit the purpose (55, 56). Individuals without gender dysphoria were screened for

psychiatric disorders as diagnosed by two clinical psychologists and, after their approval, they were recruited for this study. A clinical interview was used to screen the control group for psychopathology. Individuals in the control group were matched to the clinical sample based on their biological sex, ethnicity, the level of education, and age. Therefore, the two samples were equivalent on several relevant demographic variables. As a part of the ethical code for this research, the authors guaranteed confidentiality. After reading the Informed Consent Form, participants had the opportunity to ask questions about the study giving informed consent, after which the questionnaires were administered.

## **Results**

Table 1 presents mean and standard deviations for each group for the analyzed variables. To verify the first hypothesis regarding differences between gender dysphoric and non-dysphoric groups, seven t-tests for independent samples were computed to compare means on all variables of interest. Findings indicated that individuals without gender dysphoria had higher agreeableness,  $t(58) = -3.54, p < .001$  and higher positive attributional style,  $t(58) = -4.14, p < .0001$  than individuals with gender dysphoria. However, individuals with and without gender dysphoria did not differ on neuroticism,  $t(58) = 1.80, p < .07$ ; extraversion,  $t(58) = -1.24, p < .22$ ; openness to experience,  $t(58) = -.14, p < .88$ ; conscientiousness,  $t(58) = 1.01, p < .31$ , and negative attribution style,  $t(58) = -.05, p < .95$ .

To test the second hypothesis involving the roles of gender, education, and ethnicity, multivariate analysis of covariance (MANCOVA) was conducted by participants' status as the fixed variable, and gender, educational level, and ethnicity as covariates, and the five personality dimensions and positive and negative attribution styles as dependent variables. An overall multivariate effect was found for participants status; Wilks'  $\lambda = .435; F(7, 43) = 7.61; p = .0001$ , gender; Wilks'  $\lambda = .301; F(7, 43) = 13.57; p < .0001$ , educational level; Wilks'  $\lambda = .836; F(7, 43) = 1.14; p < .355$ ; ethnicity; Wilks'  $\lambda = .680; F(7, 43) = 2.75; p < .01$ ; gender\*ethnicity interaction; Wilks'  $\lambda = .838; F(7, 43) = 1.21; p < .365$ . These analyses indicate that while ethnicity and gender were significant, neither education nor the gender by ethnicity interaction affected the dependent variables. Tests of between subjects effects for ethnicity only showed significant differences on neuroticism,  $F(1, 59) = 5.11, p < .02$ , (Tables 2, 3).

**Table 1.** Mean and Standard Deviations of Personality Dimensions and Attribution Styles in Clinical and Control Groups and the Total Sample

Variables	Subscales	Groups					
		Clinical Group		Control Group		Total Sample	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
NEO-PI-R	Neuroticism	91.69	14.97	101.42	22.99	96.55	19.83
	Extraversion	107.19	13.96	102.23	14.91	104.71	14.49
	Openness to Experience	103.23	7.56	102.81	12.91	103.02	10.48
	Agreeableness	112.28	13.29	101.96	8.26	107.47	12.30
	Conscientiousness	106.69	13.54	111.00	16.75	108.85	15.24
ASQ	Negative	-4.10	.90	-4.12	.95	-4.11	.92
	Positive	6.15	1.02	5.14	.70	5.64	1.00

Notes: GD= Gender Dysphoria, NEO-PI-R= NEO Personality Inventory-Revised, ASQ= Attribution Style Questionnaire.

**Table 2.** Tests of Between Subjects Effects for Gender Differences in Personality Dimensions and Attribution Style

Scales	Factors	Gender						<i>F</i>	<i>P</i>
		Males		Females		Total Sample			
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
NEO-PI-R	Neuroticism	104.74	17.97	87.7 2	18.33	96.55	19.83	22.43	.0001
	Extraversion	95.62	12.68	114. 52	8.87	104.71	14.49	56.99	.0001
	Openness to Experience	100.41	8.17	105. 84	12.04	103.02	10.48	2.78	.10
	Agreeableness	106.87	14.25	108. 12	10.02	107.47	12.30	2.01	.16
	Conscientiousness	105.67	13.28	112. 28	16.69	108.85	15.24	2.13	.15
ASQ	Negative	-4.16	.83	-4.05	1.01	-4.11	.92	.62	.43
	Positive	5.67	1.24	5.62	.69	5.64	1.00	.07	.93

Notes: GD= Gender Dysphoria, NEO-PI-R= NEO Personality Inventory-Revised, ASQ= Attribution Style Questionnaire

**Table 3.** Tests of Between Subjects Effects for Ethnic Differences in Personality Dimensions and Attribution Style

Scales	Factors	Ethnicity						<i>F</i>	<i>P</i>
		Fars		Turk		Total Sample			
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
NEO-PI-R	Neuroticism	97.72	21.04	91.00	11.81	96.55	19.83	5.11	.02
	Extraversion	104.63	15.25	105.11	10.82	104.71	14.49	3.68	.06
	Openness to Experience	103.77	10.73	99.44	8.86	103.02	10.48	.27	.60
	Agreeableness	106.44	11.53	112.11	15.39	107.47	12.30	1.37	.24
	Conscientiousness	109.12	15.83	107.56	12.74	108.85	15.24	.26	.60
ASQ	Negative	-4.17	.99	-3.82	.30	-4.11	.92	.96	.33
	Positive	5.67	1.04	5.51	.88	5.64	1.00	2.72	.10

Notes: GD= Gender Dysphoria, NEO-PI-R= NEO Personality Inventory-Revised, ASQ= Attribution Style Questionnaire

## Discussions

Results for the first hypothesis regarding the Big Five personality model showed that individuals with gender dysphoria had significantly higher neuroticism and lower agreeableness scores compared to individuals without gender dysphoria, but no differences on extraversion, openness to experience, and conscientiousness dimensions of five big personality model. These findings are congruent with the previous literature regarding the potential roles of social, familial, and childhood factors on gender roles personality factors in individuals with showing sexual diversity, as represented by homosexuality, transsexualism, gender identity disorder, gender dysphoria, and their personality dysfunctions (57-59).

In line with Rosqvist, Nordlund and Kaiser (30), this study suggests that gender dysphoria, as an atypical developmental process, may influence personality dimensions in Iranian society. The present study also suggests that if one considers gender dysphoria as part of a developmental process then it is reasonable to assume that this atypical identity style may influence the lenses of people with gender dysphoria for self-exploration and introspection within their social and cultural contexts; particularly when their gendered-identity roles are not socially acceptable in that particular culture. Individuals with gender dysphoria may continuously attempt to overcome the socio-cultural barriers of their real world from the perspective of their own unusual gender identity styles. Thus, biopsychological personal dysfunctions and socio-cultural restrictions may amplify neuroticism and reduce agreeableness while also decreasing their positive attributional style.

The present findings are congruent with predictions of Big Five personality model in general life transitions (60). According to this model (44), personality is associated with a range of main life outcomes like gender identity and gender-linked roles. The theory predicts that gender identity relates to the psychological characteristics of being either male or female, in other words the self-perceptions of masculinity and femininity, variables that likely influence individual's personality dimensions. Such assumptions may account for the higher neuroticism and lower agreeableness found in individuals with gender dysphoria. These results are also consistent with the literature that suggests the influence of identity disorder on personality dimensions in abnormal ways (18, 21). Such personality characteristics highlight the enduring effect of gender identity and socio-cultural conflict during gender

socialization in childhood and adulthood adjustment in men and women with gender dysphoria.

Furthermore, results of the first hypothesis in attributional style indicated that individuals with gender dysphoria had significant lower positive attributional style than participants in the control group, while no differences were found in negative attributional style. These findings are consistent with predictions of attributional style conceptualizations and gender identity in general (61-63). In line with Maier, Peterson, and Schwartz (2000), the attributional reformulation of interpersonal and gender-linked roles by those with gender dysphoria may be influenced by their socio-cultural context in a culture (43). Specifically, patients with gender dysphoria often encounter many negative social stigmas because of their atypical needs and life style, and in turn, they may use more negative attributional styles for solving of their interpersonal and general life problems. According to attributional theory, patients with gender dysphoria when realizing their non-conforming gender identity may experience social exclusion in a culture; and this process may in part induce a negative attributional style for dealing with problems.

Results from the second hypothesis demonstrated significant effects for influences of gender and ethnicity on personality dimensions in this study. Tests of between subjects' effects for gender showed that males had significantly higher scores on neuroticism compared to females; and women had significantly higher scores on extraversion than men. These findings are consistent with earlier investigations that supported the role of biological sex on big five personality dimensions (64-66). Further, tests of between subjects' effects for ethnicity only showed significant differences on neuroticism; and individuals with Fars ethnicity had greater neuroticism than participants with Turkish ethnicity, a finding consistent with previous research on ethnicity and the big five personality dimensions (67, 68). Thus, both gender and ethnicity can influence personality dimensions beyond that of gender identity orientation through socialization and social recognition procedures which take place during the childhood development in familial and social contexts. The present study speculates that the development and effects of gender dysphoria are cultural bound. Finally, the test of the second hypothesis did not support roles for gender and ethnicity on attributional style (43, 62), effects that may be explained in the light of situational or non-persistent causal interpretations of events in this sample. Given the lack of multicultural differences on gender,

ethnicity and attributional style, this subject warrants further investigation particularly within a cross-cultural context.

## Conclusions

In conclusion, this study contributes to the understanding of gender psychology as it demonstrates how gender dysphoria may influence personality and attributional styles in a specific cultural context. Furthermore, the study may offer applications for addressing social policies for individuals with gender dysphoria. And these results may be useful for clinicians and educators who educate, diagnose, and treat patients with gender dysphoria in that they highlight the relevance of cultural factors in understanding sexual diversity.

The present study is limited by the small sample size and by the fact that it relied only on self-report inventories. Further investigations should apply both experimental and longitudinal designs for the purpose of better understanding sociocultural factors in the development of gender dysphoria by using both psychological and biological measures in men and women from different cohorts and cross-cultural samples.

## Conflict of interest disclosure

There are no known conflicts of interest in the publication of this article, and there was no financial support that could have influenced the outcomes. The manuscript was read and approved by all authors.

## Compliance with ethical standards

Any aspect of the work covered in this manuscript that has involved human patients has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript.

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