Brief Report

The Prevalence and Demographic Characteristics of Gender Dysphoria in Mazandaran, Iran During 2016 - 2022

Maryam Khosravi [1], Fatemeh Sheikhmoonesi (iD) [1, *], Ali Aalishah [2], Seyyed Taha Yahyavi (iD) [3], Abbas Alipour (iD) [4]

[1] Psychiatry and Behavioral Sciences Research Center, Addiction Institute, Mazandaran University of Medical Sciences, Sari, Iran
[2] Department of Forensic Psychiatry, Mazandaran Legal Medicine Organization, Sari, Iran
[3] Department of Psychiatry, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran
[4] Department of Community Medicine, Faculty of Medicine, Mazandaran University of Medical Sciences, Sari, Iran

[*]*Corresponding Author:* Psychiatry and Behavioral Sciences Research Center, Addiction Institute, Mazandaran University of Medical Sciences, Sari, Iran. Email: fmoonesi@yahoo.ca

Abstract

Background: Recent studies have shown an increase in the prevalence of individuals with gender dysphoria (GD). However, there is limited research on the epidemiology of GD in Iran.

Objectives: This study aimed to determine the prevalence and demographic characteristics of GD among individuals referred to the Forensic Medicine Organization (FMO) in Mazandaran, Iran, from 2016 to 2021.

Methods: This descriptive study involved reviewing medical records of individuals with confirmed GD who were referred to the FMO of Mazandaran province for permission to undergo sex reassignment surgery (SRS). Data were analyzed using the Mann-Whitney U test and chi-square test.

Results: The prevalence of GD was 123 per 100,000 people. From 2016 to 2022, 71 individuals with GD were referred to the FMO in Mazandaran province. Of these, 27 (38%) were male-to-female (MTF) and 44 (62%) were female-to-male (FTM), showing a significant difference ($\chi^2 = 4.07$, P = 0.05). The average age was 26.9 ± 5.91 years. One individual (1.4%) was married, 65 (91.5%) were single, and five (7%) were divorced. Twenty-one (28.2%) were undergoing hormone therapy before referral to forensic medicine. Fifty-five participants (77.5%) wore clothing of the opposite sex in public places.

Conclusions: From 2016 to 2022, the age of individuals with GD referring to forensic medicine decreased, possibly due to increased awareness and reduced stigma associated with GD.

Keywords: Gender Dysphoria, Iran, Prevalence

1. Background

Gender dysphoria (GD) involves a mismatch between an individual's experienced gender and their assigned gender at birth (1). Global prevalence data are limited, with incidence rates varying across countries due to cultural factors that influence the presentation and distress associated with GD (2). Studies estimate the prevalence of male-to-female (MTF) transsexuals to range from 1:11,900 to 1:45,000, and female-to-male (FTM) transsexuals from 1:30,400 to 1:200,000 (3, 4).

Diagnoses of GD in individuals assigned male and female at birth have increased over the past decade, altering the sex ratio (5, 6). In 1987, Iran legalized sex reassignment surgery (SRS) for individuals with GD, requiring permits from the Forensic Medicine Organization (FMO) (7). Iran was the first country in the Middle East and the second worldwide, after Thailand, to perform SRS (8). However, little is known about the annual number of individuals seeking or receiving this treatment.

2. Objectives

This study assessed the prevalence and demographic characteristics of GD among individuals referred to the FMO in Mazandaran, Iran, from 2016 to 2021.

3. Methods

This study employed a descriptive research design. The Mann-Whitney U test was utilized to compare two groups after assessing the normality of the data using the Kolmogorov-Smirnov test. Chi-square tests were applied to compare qualitative variables, including sex, marital status, residence, education, smoking/drug use, cross-dressing/hormone therapy, and psychiatric disorders, based on medical records. The present study was approved by the Ethics Committee of Mazandaran University of Medical Sciences under the code IR.MAZUMS.REC.1402.517.

4. Results

The results indicated that the prevalence of GD was 123 per 100,000 among individuals referred to the FMO in Mazandaran during 2016 - 2022. During this period, 71 individuals with GD were referred to the FMO in Mazandaran province. Of these, 27 (38%) were MTF and 44 (62%) were FTM, representing a significant difference ($\chi^2 = 4.07$, P = 0.05). The average age was 26.9 ± 5.91 years. One individual (1.4%) was married, 65 (91.5%) were single, and five (7%) were divorced. Twenty-one (28.2%) were undergoing hormone therapy before referral to forensic medicine. Fifty-five participants (77.5%) wore clothing of the opposite sex in public places. Regarding residence, 46 individuals with GD (64.8%) lived in urban areas, while 25 (35.2%) resided in rural areas. Educational attainment was distributed as follows: Primary education (10 individuals, 14.1%), high school education (33 individuals, 46.5%), and university education (28 individuals, 39.4%). Table 1 shows the demographic characteristics of individuals with GD referring to FMO in Mazandaran province by year.

In Table 2, the frequency of people with GD referring to FMO by biological gender and their comparison is presented.

5. Discussion

According to a nationwide study assessing the prevalence of GD in Iran between 2012 and 2017, the prevalence was estimated at 0.0000146, with a MTF to FTM ratio of 0.5 (9). This MTF/FTM ratio is similar to the findings of our study. However, the prevalence of GD in our study was higher, possibly due to increased public awareness and reduced social stigma, leading more individuals with GD to seek SRS. Other studies have also reported an increase in the number of individuals with GD seeking medical assistance in Iran and other countries (10, 11).

In the present study, the average age of individuals with GD was 26.9 ± 5.91 years, consistent with other research findings (9, 11). Notably, individuals seeking SRS were younger in 2022 (21.89 years) compared to 2016 (35.45 years). This trend may reflect a shift in Iranian society from traditional to modern values, resulting in greater acceptance of GD and prompting younger individuals to seek help earlier.

It was observed that FTM individuals were statistically significantly more likely than MTF individuals to cross-dress before obtaining permission from the FMO. This may be attributed to Iranian cultural norms, where men and women have distinct clothing styles. It is generally more socially acceptable for a biologically female individual to wear boys' clothing, whereas wearing women's clothing is often taboo for MTF individuals due to societal and familial expectations.

The study also revealed that most individuals with GD had a co-occurring psychiatric disorder, aligning with other studies conducted in Iran. Hedjazi SA et al. (2021) reported a prevalence of co-occurring psychiatric disorders of 32.7% among individuals with GD referred to the FMO in Khorasan Razavi province, Iran (11). This underscores the need for improved mental health services and treatment of psychiatric disorders within this population.

5.1. Limitations

The use of forensic records limited the data available for this study, as key variables such as sexual orientation and family history were not included.

Table 1. Demographic Characteristics of Individuals with Gender Dysphoria Referring to Forensic Medicine Organization in Mazandaran Province, Iran by Year

Year	Average Age	Biological Sex		Marital Status			Birth Order	Residence	
		Male	Female	Single	Married	Divorced		City	Village
2016	35.45	1	10	10	0	1	2.82	6	5
2017	28.36	5	6	10	0	1	1.82	10	1
2018	29.11	4	5	8	0	1	2.56	4	5
2019	26.83	2	4	6	0	0	2.33	5	1
2020	24.93	9	6	14	1	0	1.93	11	4
2021	26.90	1	9	9	0	1	2.20	7	3
2022	21.89	5	4	8	0	1	1.89	3	6

Table 2. Frequency of People with Gender Dysphoria Referring to Forensic Medicine Organization in Mazandaran Province, Iran by Biological Sex

Variables and Subscales	FTM	MTF	Chi-square	Degree of Freedom	P-Value
Residence			6.211	1	0.013
City	28	18			
Village	16	9			
Education			12.366	2	0.002
Primary	4	6			
Secondary	17	16			
University	23	5			
Marital status			108.620	2	0.001
Single	38	27			
Married	1	0			
Divorced	5	0			
Being employed	41	11	1.704	1	0.192
Smoker	4	9	28.521	1	0.001
Substance user	3	5	42.606	1	0.001
Hormone therapy	9	11	1.535	1	0.700
Wearing cloths of the other sex	37	18	21.423	1	0.001
History of psychiatric disorder	36	24	3.17	1	0.52

Abbreviations: FTM, female-to-male; MTF, male-to-female.

Footnotes

Authors' Contribution: F. Sh. contributed to the concept and design. M. Kh. and A. A. contributed to data collection and conception. S. T. Y. and A. B. A. contributed to data analysis and interpretation. F. Sh. and M. Kh. contributed to the drafting of the article. All authors agreed on the final manuscript.

Conflict of Interests Statement: Fatemeh Sheikhmoonesi is one of the editorial board members and a reviewer of this journal.

References

1. Boland RJ, Verduin ML, Ruiz P. *Kaplan and Sadock's Synopsis of Psychiatry*. **12**. Philadelphia, USA: Wolters Kluwer; 2022.

2. Zucker KJ. Epidemiology of gender dysphoria and transgender identity. *Sex Health*. 2017;**14**(5):404-11. [PubMed ID: 28838353]. https://doi.org/10.1071/SH17067.

3. Tsujimura A, Kiuchi H, Soda T, Takezawa K, Fukuhara S, Takao T, et al. The Pattern of Sexual Interest of Female-to-Male Transsexual Persons With Gender Identity Disorder Does Not Resemble That of Biological Men: An Eye-Tracking Study. *Sex Med*. 2017;**5**(3):e169-74. [PubMed ID: 28823313]. [PubMed Central ID: PMC5562498]. https://doi.org/10.1016/j.esxm.2017.04.003.

4. Oda H, Kinoshita T. Efficacy of hormonal and mental treatments with MMPI in FtM individuals: cross-sectional and longitudinal studies. *BMC Psychiatry*. 2017;**17**(1):256. [PubMed ID: 28716082]. [PubMed Central ID: PMC5513327]. https://doi.org/10.1186/s12888-017-1423-y.

5. Chao KY, Chou CC, Chen CI, Lee SR, Cheng W. Prevalence and Comorbidity of Gender Dysphoria in Taiwan, 2010-2019. *Arch Sex Behav*. 2023;**52**(3):1009-17. [PubMed ID: 36692628]. [PubMed Central ID: PMC10102133]. https://doi.org/10.1007/s10508-022-02500-7.

6. Claahsen-van der Grinten H, Verhaak C, Steensma T, Middelberg T, Roeffen J, Klink D. Gender incongruence and gender dysphoria in childhood and adolescence-current insights in diagnostics, management, and follow-up. *Eur J Pediatr*. 2021;**180**(5):1349-57. [PubMed ID: 33337526]. [PubMed Central ID: PMC8032627]. https://doi.org/10.1007/s00431-020-03906-y.

7. Vahedi M, Alimardani A, Behrouzih MR, Rayejian Asli M. Gender Dysphoria in Iran: legal and Islamic Jurisprudence Perspectives:

Gender Dysphoria in Iran. *Bioeth Health Law J.* 2021;**1**(1):1-10 (e4). https://doi.org/10.22037/bhl.v1i1.38128.

8. Najafipour M, Najafipour F. Transsexualism in Iran. *Int J Sci Eng Res.* 2018;**9**(1). https://doi.org/10.5812/ijpbs.69086.

9. Talaei A, Hedjazi A, Badieyan Moosavi N, Dadgarmoghaddam M, Lotfinejad N, Khorashad BS. The Epidemiology of Gender Dysphoria in Iran: The First Nationwide Study. *Arch Sex Behav.* 2022;**51**(4):1881-9. [PubMed ID: 35511409]. https://doi.org/10.1007/s10508-021-02250-y.

10. Chen M, Fuqua J, Eugster EA. Characteristics of Referrals for Gender Dysphoria Over a 13-Year Period. *J Adolesc Health.* 2016;**58**(3):369-71. [PubMed ID: 26903434]. [PubMed Central ID: PMC5344189]. https://doi.org/10.1016/j.jadohealth.2015.11.010.

11. Hedjazi SA, Talaei A, Moosavi NB, Fotovat A, Niroumand S. Epidemiological assessment of people with gender dysphoria referred to forensic medicine in Khorasan Razavi, Iran. *J Fundam Mental Health.* 2021;**23**(3).