

Minnesota Multiphasic Personality Inventory-2 Profiles of Patients with Gender Identity Disorder Requesting Sex Reassignment Surgery

Sagar Karia, Sanhita Jamsandekar, Alpa Alure, Avinash De Sousa, Nilesh Shah

ABSTRACT

Background: Gender identity disorder (GID) is a distressing disorder characterized by a persistent unhappiness with one's own sex and a desire to be of the opposite sex as well as seeking sex reassignment surgery for the same. The aim of the study was to assess the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) profiles in patients with GID and examine differences in the profiles based on original gender of the patients. **Methodology:** Twenty-seven patients with GID that fulfilled the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision criteria for the same were participants of the study. They were administered the MMPI-2 and the scores across various scales were statistically analyzed. Before analysis, the sample was divided into groups according to gender, i.e., male-to-female and female-to-male patients who were requesting sex reassignment surgery. **Results:** No significant elevation of scores on any of the scales was noted in keeping with the fact that patients with GID usually demonstrate minimal psychopathology. All patients showed elevation on at least one subscale other than the masculinity-femininity subscale. No differences across gender were noted indicating that gender was probably not a determinant of psychopathology in GID. **Conclusions:** MMPI-2 profiles in patients with GID failed to reveal major psychopathology though the MMPI still remains a useful tool in the assessment of this population.

Key words: Gender, gender identity disorder, masculinity-femininity, Minnesota Multiphasic Personality Inventory-2

INTRODUCTION

Gender identity disorder (GID) is a distressing condition where there is a strong and persistent desire of wanting to belong to a sex opposite to what the patient is in and there is a persistent request towards sex reassignment surgery for the same.^[1] The patient often has a

discomfort with his/her biological sex and seeks help via a psychiatric consultation to get a formal approval for sex reassignment surgery to look like the opposite sex.^[2]

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Karia S, Jamsandekar S, Alure A, De Sousa A, Shah N. Minnesota multiphasic personality inventory-2 profiles of patients with gender identity disorder requesting sex reassignment surgery. Indian J Psychol Med 2016;38:443-6.

Access this article online	
Website: www.ijpm.info	Quick Response Code 
DOI: 10.4103/0253-7176.191378	

Department of Psychiatry, Lokmanya Tilak Municipal Medical College, Mumbai, Maharashtra, India

Address for correspondence: Dr. Avinash De Sousa
Department of Psychiatry, Lokmanya Tilak Municipal Medical College, Carmel, 18, St. Francis Road, Off S.V. Road, Santacruz West, Mumbai - 400 054, Maharashtra, India. E-mail: avinashdes888@gmail.com

GID often presents to the psychiatrist when referred from the plastic surgeon whom these patients approach for sex reassignment and is often plagued with comorbid psychopathology, anxiety, lack of parental and family support and extreme psychological distress.^[3] A variety of psychological tests, rating scales, sex role inventories, projective tests, neuropsychological assessments, and psychopathology scales have been used in the assessment of individual with GID.^[4] The Minnesota Multiphasic Personality Inventory-2 (MMPI-2) has been used in many studies to understand psychopathology in patients with GID with varying results.^[5,6] Some studies with the MMPI demonstrate depression and varied psychopathology^[7] while some studies fail to demonstrate any psychopathology and may point towards GID being an isolated disorder.^[8] MMPI-2 in the assessment of GID has been used in various phases and levels of care. Studies have used MMPI-2 in the general psychopathological assessment of these cases,^[9] studies have examined sex differences based on the original gender of these patients^[10] and a study has also evaluated MMPI profiles at various stages of therapy viz., during the hormonal replacement therapy phase and during the sex reassignment surgery phase and compared both profiles.^[11] Indian studies on psychological assessment of patients with GID is scarce, and it is relatively uncommon as a disorder compared to other psychiatric conditions. We undertook this study under the premise that levels of psychopathology may be minimal in patients with GID but nevertheless wanted to compare any major differences in MMPI profiles depending on the gender of origin. The aim of this study was to assess MMPI-2 profiles in patients that presented to the psychiatry department seeking a sex reassignment surgery. These MMPI-2 profiles were then compared based on the original gender of the patients.

METHODOLOGY

The sample for the study consisted of 27 patients with GID that on clinical assessment met the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision (DSM-IV-TR)^[12] criteria for GID in adulthood and presented to the psychiatric outpatient department of tertiary care center with chief complaints of gender dysphoria and wanted to undergo sex reassignment surgery. All cases were assessed were by two senior psychiatrists and one clinical psychologist to ensure that the DSM-IV-TR criteria were fulfilled and to confirm the diagnosis. These patients were collected over a 3 years period between January 2013 and January 2016. Our tertiary center is providing specialized and comprehensive psychiatric, psychological, surgical, and endocrine care for patients with GID. We totally assessed 37 patients and excluded

ten patients who failed to meet the DSM-IV-TR criteria for GID. Basic sociodemographic data were collected and then the patients were administered the MMPI-2 to assess psychopathology. All patients presented to the center alone. The MMPI-2 is used in the routine psychological assessment of these patients before psychological fitness for sex reassignment surgery. All patients were explained the aims and nature of the current and a written informed consent for the same was taken. The study was approved in a department review board meeting.

The Minnesota Multiphasic Personality Inventory

The MMPI-2 is a 567-item with statements that are used to assess personality, and the subject has to answer true or false based on how the statement applies to him/her. Its validity and reliability have been established. The inventory comprises three validity scales - lie (L), infrequency (F), and correction (K) and ten clinical scales: Hypochondriasis, depression (D), hysteria, psychopathic deviate, masculinity-femininity (Mf), paranoia (Pa), psychasthenia, schizophrenia (Sc), mania (Ma), and social introversion. This inventory is currently the most widely used questionnaire for systematic assessment of psychopathology. Raw scores are converted to uniform T scores relative to normative data using the norms corresponding to the biological sex. Scores of above 80 on the L, 100 on the F, and 70 on the K validity scales are suggestive of response distortion. Scores of 65 or above in the clinical scales were considered to be clinically significant.^[13]

Statistical analysis

Before analysis, the sample was divided into groups according to gender, i.e., male-to-female (MF) and female-to-male (FM) patients who were requesting sex reassignment surgery. The data were analyzed using the computerized software. The intergroup comparison was done using the Mann-Whitney U-test. Effect sizes were calculated using Cohen's *d*.

RESULTS

The groups in the study did not differ as far as age and education. All patients were graduates and working. All except one on the MF group were staying with their parents, and all of them were born and brought up in Mumbai itself. The mean age of the MF group was 28.6 ± 5.6 years ($n = 18$), and that of the FM group was 29.1 ± 5.5 years ($n = 9$). On comparison across various scales of the MMPI, no significant differences across any of the scales were noted [Table 1]. The group had three profiles that were indicative of probable response distortion. All were from the MF group. Even after exclusion of these three and on re-analysis of the data no significant differences across the groups on all

Table 1: Minnesota Multiphasic Personality Inventory scores across both the groups in the study

Scale	MF transsexuals (n=18)		FM transsexuals (n=9)		Statistical analysis		Effect size (Cohen's d)
	Mean	SD	Mean	SD	U	P	
	Validity scales of the MMPI						
L	60	7.53	56	3.00	61.0	NS	0.69
F	70.33	11.63	71.56	11.14	72.0	NS	-0.11
K	52.94	11.34	48.89	10.19	61.0	NS	0.37
Clinical scales of the MMPI							
Hs	61.11	13.73	54.00	4.82	57.5	NS	0.69
D	64.44	14.97	58.67	9.34	63.5	NS	0.46
Hy	60.28	13.41	57.00	8.43	73.5	NS	0.29
Pd	69.00	9.91	72.11	11.52	70.5	NS	-0.29
Mf	78.56	5.15	79.11	9.37	79.5	NS	-0.07
Pa	71.28	11.58	69.22	10.79	78.5	NS	0.18
Pt	60.94	14.72	56.33	9.26	67.5	NS	0.37
Sc	73.33	17.37	68.11	10.01	67.0	NS	0.37
Ma	64.22	11.13	67.44	10.10	68.5	NS	-0.30
Si	45.33	6.34	44.67	3.39	78.0	NS	0.13

Mann-Whitney U-test in the statistical analysis. NS – Not significant ($P \geq 0.05$). MMPI: Minnesota Multiphasic Personality Inventory; SD – Standard deviation; MF – Male-to-female; FM – female-to-male; L – Lie; F – Infrequency; K – Correction; HS – Hypochondriasis; D – Depression; Hy – Hysteria; Pd – Psychopathic-deviate; Mf – Masculinity-femininity; Pa – Paranoia; Pt – Psychasthenia; Sc – Schizophrenia; Ma – Mania; Si – Social introversion

scales were noted (only data of the entire sample shown in this paper). There was no major significance noted even when the effect sizes were calculated [Table 1].

DISCUSSION

None of the groups and patients showed significant psychopathology on the MMPI-2 profiles. This is indicative of previous studies that have reported that psychopathology may be minimal in groups of patients with GID.^[14] The MF group showed a higher score in the paranoia (Pa), and schizophrenia (Sc) scales though clinically insignificant. It is important to note that many patients with GID may show a high score in at least one MMPI subscale other than the Mf scale.^[15] Patients with GID are often ridiculed and face rejection within close family circles. They lose confidence as to who they could confide in and trust or disclose their problems. Even clinicians other than psychiatrists at times may not be very sensitive to their needs.^[16] This leads to a feeling of distrust and cautiousness when speaking to medical professionals and may lead to a false elevation of Pa and Sc scores though this elevation is in no way linked to an underlying psychotic process. Most of the profiles assessed in the study were valid and indicated that the patients were truthful in answering as they were genuinely in distress and sought help for their

problems. No differences across gender were noted indicating as in previous studies done in the GID group, that gender is not a determinant of psychopathology in this population.^[17] The high scores on the Mf scale in both groups in our study indicate that patients readily complied with stereotypes of femininity in MF and masculinity in FM groups. This finding is also consistently reported in literature. High scores in this subscale have been the hallmark of GID cases.^[18]

The study was marred by the fact that the sample size was small ($n = 27$) and may not be indicative of all patients with GID. The MMPI-2 was the tool for the research and was also used in the assessment for psychological fitness for surgery. This may have led to cautionary approach while answering the MMPI and could have given us misleading results. We did not combine MMPI in our study with other projective tests such as the Rorschach, human figure drawings, and the thematic apperception tests that may have added more value to a psychopathological understanding of our subjects. Probable longitudinal testing in these subjects during different phases of the disorder (before and after surgery, precontemplation, and postcontemplation phases) would probably have added greater yield to psychological assessment rather than a cross-sectional model followed by us. Nevertheless, data on patients with GID in India are sparse, and the MMPI-2 findings in our study are in keeping with a study on larger samples done in specialized centers worldwide. Further studies in larger samples and diverse settings are warranted.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Cohen-Kettenis PT, Pfäfflin F. The DSM diagnostic criteria for gender identity disorder in adolescents and adults. *Arch Sex Behav* 2010;39:499-513.
2. Byne W, Bradley SJ, Coleman E, Eyler AE, Green R, Menvielle EJ, et al. Report of the American Psychiatric Association task force on treatment of gender identity disorder. *Arch Sex Behav* 2012;41:759-96.
3. Hoshiai M, Matsumoto Y, Sato T, Ohnishi M, Okabe N, Kishimoto Y, et al. Psychiatric comorbidity among patients with gender identity disorder. *Psychiatry Clin Neurosci* 2010;64:514-9.
4. Eagly AH. The his and hers of prosocial behavior: An examination of the social psychology of gender. *Am Psychol* 2009;64:644-58.
5. de Vries AL, Kreukels BP, Steensma TD, Doreleijers TA, Cohen-Kettenis PT. Comparing adult and adolescent transsexuals: An MMPI-2 and MMPI-A study. *Psychiatry Res* 2011;186:414-8.

6. Simon L, Zsolt U, Fogd D, Czobor P. Dysfunctional core beliefs, perceived parenting behavior and psychopathology in gender identity disorder: A comparison of male-to-female, female-to-male transsexual and nontranssexual control subjects. *J Behav Ther Exp Psychiatry* 2011;42:38-45.
7. Zucker KJ, Bradley SJ, Owen-Anderson A, Kibblewhite SJ, Wood H, Singh D, *et al.* Demographics, behavior problems, and psychosexual characteristics of adolescents with gender identity disorder or transvestic fetishism. *J Sex Marital Ther* 2012;38:151-89.
8. Smith YL, Van Goozen SH, Kuiper AJ, Cohen-Kettenis PT. Sex reassignment: Outcomes and predictors of treatment for adolescent and adult transsexuals. *Psychol Med* 2005;35:89-99.
9. Smith YL, van Goozen SH, Kuiper AJ, Cohen-Kettenis PT. Transsexual subtypes: Clinical and theoretical significance. *Psychiatry Res* 2005;137:151-60.
10. de Vries AL, Cohen-Kettenis PT. Clinical management of gender dysphoria in children and adolescents: The Dutch approach. *J Homosex* 2012;59:301-20.
11. Gómez-Gil E, Vidal-Hagemeijer A, Salamero M. MMPI-2 characteristics of transsexuals requesting sex reassignment: Comparison of patients in pre-hormonal and presurgical phases. *J Pers Assess* 2008;90:368-74.
12. American Psychiatric Association. *Diagnostic and Statistical Manual for the Classification of Psychiatric Disorders – 4th Edition Text Revised (DSM-IVTR)*. New York, U.S.A: American Psychiatric Publishing; 2000.
13. Friedman AF, Levak RW, Nichols DS, Webb JT. *Psychological Assessment with the MMPI-2*. UK: Routledge; 2014.
14. Gómez-Gil E, Zubiaurre-Elorza L, Esteva I, Guillamon A, Godás T, Cruz Almaraz M, *et al.* Hormone-treated transsexuals report less social distress, anxiety and depression. *Psychoneuroendocrinology* 2012;37:662-70.
15. Heylens G, Verroken C, De Cock S, T'Sjoen G, De Cuypere G. Effects of different steps in gender reassignment therapy on psychopathology: A prospective study of persons with a gender identity disorder. *J Sex Med* 2014;11:119-26.
16. Mayer KH, Bradford JB, Makadon HJ, Stall R, Goldhammer H, Landers S. Sexual and gender minority health: What we know and what needs to be done. *Am J Public Health* 2008;98:989-95.
17. Connell R. Gender, health and theory: Conceptualizing the issue, in local and world perspective. *Soc Sci Med* 2012;74:1675-83.
18. Woo M, Oei TP. The MMPI-2 Gender-Masculine and Gender-Feminine Scales: Gender roles as predictors of psychological health in clinical patients. *Int J Psychol* 2006;41:413-22.