

<Original Article>

Psychological Status as Measured by the MMPI in Japanese Clients with Gender Identity Disorder

Takaharu HORI¹, Hitomi NINOMIYA¹, Tetsufumi KANAZAWA¹,
Shinya KINOSHITA¹, Shota OUCHI¹, Yasuo KAWABATA¹, Hiroshi OKADA²,
Jun KOH¹, and Hiroshi YONEDA¹

¹*Department of Neuropsychiatry, Division of Comprehensive Medicine,
Faculty of Medicine, Osaka Medical College, Takatsuki, Osaka 569-8686, Japan*

²*Graduate School of Psychology, Kansai University, Suita, Osaka, Japan*

Key words: gender identity, GID, MMPI, psychological adjustment, treatment

ABSTRACT

Objective: We aimed to investigate the psychological status of gender identity disorder (GID) clients related to treatment phase and completion of real-life experience (RLE) using the Minnesota Multiphasic Personality Inventory (MMPI) retrospectively, and provide data that can be used to facilitate appropriate psychological support during treatment.

Method: At a GID clinic, 261 male-to-female (MtF) and 138 female-to-male (FtM) clients completed the MMPI. Participants comprised three groups based on treatment status: no treatment, treatment with oral/injected hormones, or sex reassignment surgery.

Results: The mean T-score on MMPI clinical scales was higher than the average ($T = 50$) in GID clients (FtM = 55.3, MtF = 64.2). In addition, T-scores for MtF clients were significantly higher than those for FtM clients on 8 of the 10 clinical scales ($p < 0.01$). As treatment status progressed, the T-scores for 7 scales, excluding Masculinity/Femininity, Hypomania, and Social Introversion, approached those for non-GID individuals. In FtM clients who had hormonal treatment, there was increased psychological stability in those who were open about GID treatment and had completed their RLE.

Conclusion: These findings suggest that the psychological status of GID clients is more similar to non-GID individuals as treatment and RLE progress.

INTRODUCTION

Since inclusion of Gender Identity Disorder (GID) in the International Classification of Diseases (ICD-9) [1], the number of individuals who are open about gen-

der dysphoria has increased in many countries. Individuals with GID often face social problems in their school or workplace. They are at increased risk for suicide related to feelings of guilt or a sense of shame [2]. In addition to observable problems, psychological

Address correspondence to:

Tetsufumi Kanazawa, M.D., Ph.D., Department of Neuropsychiatry, Division of Comprehensive Medicine, Faculty of Medicine, Osaka Medical College, 2-7 Daigakumachi, Takatsuki, Osaka 569-8686, Japan
Phone: +81-72-683-1221 Fax: +81-72-683-4810 E-mail: psy052@poh.osaka-med.ac.jp

issues in childhood GID are easily internalized and may result in social isolation and a concurrent anxiety disorder [3].

In Japan, awareness of individuals with gender dysphoria has gradually increased through education campaigns by hospitals, universities, non-profit groups, and the media. An estimated 8,000 individuals have reportedly been seen by a GID specialist. As educational efforts have increased, legal and social systems have improved so that intervention by a specialist is more easily available. However, this kind of activity is still limited in Japan. Few individuals are actually treated by a team organized by specialists in psychiatry, internal medicine or gynecology for hormonal therapy, and plastic surgery for sex reassignment surgery. Improvements in the legal system and training for specialized social workers are still needed in the conservative sexual climate in Japan [4]. Therefore, medical care for GID individuals is often provided as a result of revealed internalized conflict, such as agitation, sleeplessness, or suicidal feelings, although many individuals have grown up with these issues.

Psychological factors related to GID have been explored. Scores on the Wechsler Adult Intelligence Scale (WAIS) for individuals with GID tend to be higher than average and similar to non-GID individuals in the same age group [5]. Tuber and Coats [6] reported that boys with severe GID had a higher rate of concomitant thought disorder than normal controls. Using the Rorschach test, one researcher found that personality structure in birth-assigned males with gender dysphoria was similar to that in individuals with borderline personality disorder [7]. However, few studies have explored differences in psychological issues between treated and non-treated GID groups. It assumed that psychological stability is not influenced only by the treatment progress, but whether the surroundings of the clients have accepted their will to live with a biologically-opposite sex. In Japan, there has been no previous investigation of psychological status in GID

individuals who have had real-life experience (RLE), which entails living the desired gender role for a minimum of 3 months. So further retrospective survey on RLE was performed in the current study.

Aims of the study

The aim of this study was to examine psychological status related to treatment phase and completion of RLE using the Minnesota Multiphasic Personality Inventory (MMPI) retrospectively [8]. We further aimed to provide data that can be used to more effectively integrate physical treatment and psychological support for GID individuals.

METHOD

The questionnaire including the MMPI-I (Japanese Version) [9,10] was administered to clients who saw a specialist at the GID clinic in the Neuropsychiatry Department of Osaka Medical College between February 2004 and March 2010. The ICD-10 criteria (F64) were adapted for the diagnosis of GID. After diagnosis by multiple psychiatrists and review of MMPI responses by clinical psychologists, the sample included 261 MtF (male-to-female; biological males who desire to live as females), and 138 FtM (female-to-male; biological females who desire to live as males) clients. Age ranges were 15-52 years (25.54 ± 6.82) and 16-54 years (31.78 ± 9.35) for FtM and MtF clients, respectively. The MMPI responses that failed to pass the validity scales were excluded from the analysis ($n = 47$). Prior genetic testing showed no related chromosomal abnormalities, such as Klinefelter's or Turner's syndromes, in any client. It should be noted that some clients had already been treated by gynecologists, urologists, or plastic surgeons when they came to the clinic for the first time. Therefore, we divided them into three groups based on previous treatment (Table I). Group I had not been treated, Group II had been treated with oral/injection hormonal therapy, and Group III had undergone sex

Table 1. Association of treatment status and real-life experience

		All samples	Analyzed sample	RLE Yes	RLE No
FtM	No physical treatment (Group I)	183	162	41	121
	Hormonal therapy (Group II)	63	59	40	19
	SRS (Group III)	44	40	32	8
	Total	290	261	113	148
MtF	No physical treatment (Group I)	42	32	3	29
	Hormonal therapy (Group II)	71	64	16	48
	SRS (Group III)	43	42	34	8
	Total	156	138	53	85
	Overall total	446	399	166	233

FtM: Female to Male, MtF: Male to Female, SRS: sex reassignment surgery, RLE: real-life experience

reassignment surgery (SRS). In addition to treatment, we investigated whether each individual had been living full-time as their preferred gender (RLE). The current retrospective investigation was approved by the ethics committee of Osaka Medical College. Statistical analysis was performed by SPSS software (ver. 19.0). Group difference was performed by ANOVA (Analysis of Variance) and post-hoc analysis, whereas t-test was employed on the two-group difference. Statistical significance was set at <.05.

RESULTS

MMPI results showed differences in psychological status between FtM and MtF clients (Figure 1, indicated p-value is from t-test by the comparison between FtM and MtF groups). Differences in results on some scales of the MMPI were related to previous treatment (Figures 2 and 3). Regarding RLE, in FtM clients treat-

ed by hormonal therapy (Group II), psychological stability increased once they completed their RLE, whereas this tendency was not found in MtF clients (Figures 4 and 5). We investigated the status of RLE only for

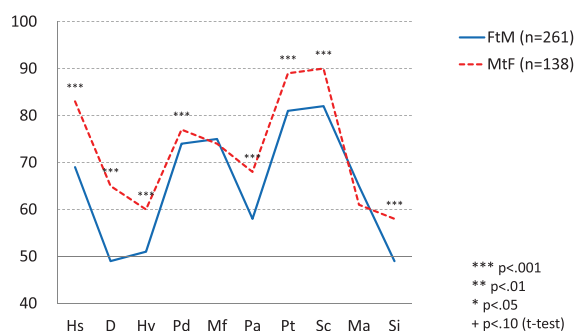


Figure 1. The averaged individual score on MMPI at the clients' first visit.

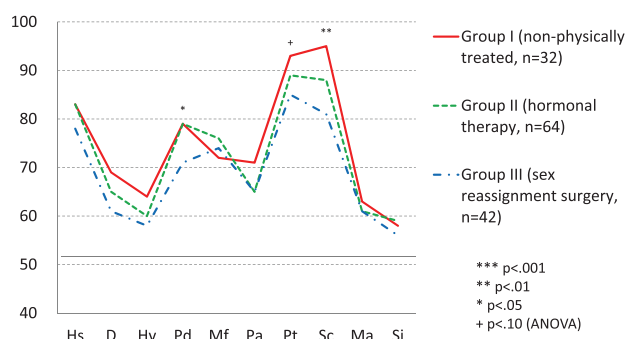
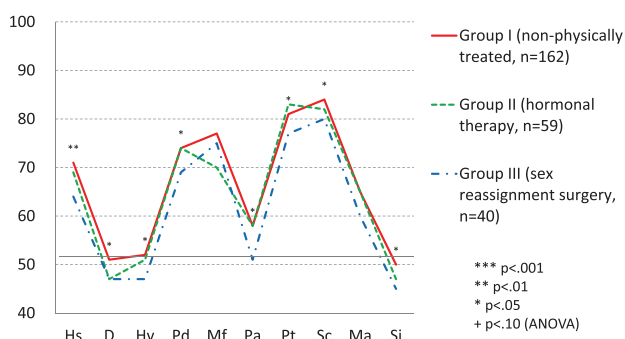


Figure 2 and 3. The averaged individual score on MMPI divided by previous treatment for FtM (Figure 2) and MtF (Figure 3)

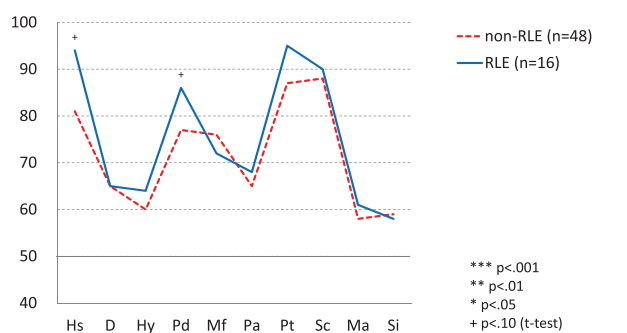
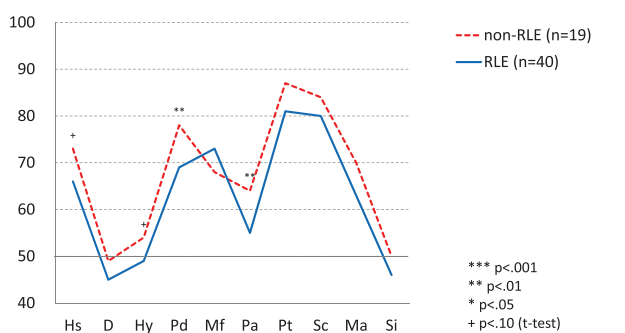


Figure 4 and 5. The averaged individual score on MMPI for the clients with hormonal treatment (Group-II) [FtM (Figure 4) and MtF (Figure 5)]

Abbreviation

- | | | |
|----------------------------|----------------------------|-------------------------|
| FtM-Female to Male | Hy: Hysteria | Sc: Schizophrenia |
| MtF-Male to Female | Pd: Psychopathic Deviate | Ma: Hypomania |
| ANOVA-Analysis of Variance | Mf: Masculinity/Femininity | Si: Social Introversion |
| Hs: Hypochondriasis | Pa: Paranoia | |
| D: Depression | Pt: Psychasthenia | |

the group being treated with hormonal therapy (Group II) because most of Group I had no RLE, whereas most of Group III had completed their RLE. In Group II, 68% of FtM clients were open about their gender dysphoria and lived as the preferred gender. On the other hand, only 25% of MtF clients had completed their RLE.

DISCUSSION

Compared to the average T-score of 50 for an adult on the MMPI scales, the average of T-scores for the investigated sample were elevated. In particular, for the Masculinity-Femininity (Mf) scale, significantly higher T-scores were noted in both MtF and FtM groups, implying an intense interest or identification with the biologically opposite sex. Higher scores on Schizophrenia (Sc), Paranoia (Pa), Depression (D), and Psychasthenia (Pt) clinical scales of the MMPI for MtF clients suggest that they may feel slighted and suspicious of their surroundings [11,12]. Subsequently, this anxious feeling can lead to depression, represented in higher scores for the D scale. Both FtM and MtF clients had shown higher Sc and Pa scores. A distinctive trend for the FtM clients, on the other hand, was high scores on the Psychopathic Deviate (Pd) scale. An elevation in score on this scale indicates poor social adjustment, difficulty with authority figures, and a tendency for antisocial conduct. The most important finding regarding the comparison between MtF and FtM clients is that MtF clients obtained higher T-scores on most scales. Of the 10 scales, 8 scales were higher for MtF clients, with p-values on t-tests significantly different at the 0.01 level. The two scales in which there were no significant differences between MtF and FtM clients were Mf and Hypomania (Ma). In Japan, compared with FtM individuals whose onset age is younger and who seldom get legally married as a female, the situation for MtF individuals is more complicated. In MtF individuals, onset age is later, and more than 25% get married as a male [15], similar to Swedish MtF individuals [16]. This behavior is possibly due to the unawareness of their propensities, or may result from wishful thinking that gender dysphoria can be reduced or eliminated by marrying a partner of the opposite sex. This may also be because of increased stigma for acting in a gender-variant way in biological males compared to biological females. However, efforts to adjust to society while refusing to face internalized gender dysphoria complicate the situation.

In an analysis of the different physical treatment levels (Groups I, II, and III), there was not a significant difference in Mf score. There were lower scores for other scales in groups with more progression in their treatment. For individuals with strong beliefs on self-

perceived gender who are willing to have physical treatment, it is assumed that their gender identity has been established regardless of the treatment level, and the current retrospective observation supported this. It should be noted that scores on the Ma scale, similar to the Mf scale, did not change at the different treatment levels. Although Ma generally refers to level of excitability, this score was not higher at the time of the first visit (shown in Figure 1). This stability on the Ma scale implies that the mood of GID clients is not remarkably transitional as treatment progresses. An important effect on psychological status is whether individuals living as the preferred sex are accepted in their surroundings. In general, it is assumed that FtM individuals, compared to MtF individuals, easily achieve being a member of society as the preferred gender [17]. The cause of this inequality is possibly related to not being able to change skeletal structure or reduce thyroid cartilage, or eliminate a beard or mustache except by hormonal therapy. Being regarded as a male is attributable to maleness observed, whereas being recognized as a female can occur with an absence of these male characteristics. It is difficult to be regarded as a female when more thyroid cartilage, a beard or mustache, and a low voice are observed [18].

Our findings should be interpreted cautiously. This retrospective survey was conducted in an area where there is a limited understanding of GID, therefore certain transgender people could be over/under represented around this area. Thus, sampling bias cannot be ruled out. In addition, in this study, neither an intelligence scale such as the WAIS nor a scale measuring social adjustment was administered. Therefore, it was not possible to examine which, if any, MMPI scores were affected by the client's intelligence level or social situation. Finally, we considered time reportedly spent living as the preferred sex and the sex indicated on school or company IDs opposite from the client's biological sex as evidence of RLE. Therefore, while our current data can be considered reliable regarding the psychological influence of RLE the information was obtained through self-report. Moreover, if RLE is interpreted narrowly, it should be defined as living as the preferred sex in all social situations. However, the official universal definition of RLE includes a person receiving medical services or voting in an election as their preferred sex. Therefore, the present study's definition of RLE was not strictly defined in terms of self-reporting.

This study reveals that GID clients showed some psychological instability regardless of treatment level. Indications of instability were characteristic of MtF clients, but decreased as physical treatment progressed in both MtF and FtM groups. For MtF clients, their gen-

eral stability increased as a result of completing their RLE. Our findings can contribute to developing strategies to improve psychological support for GID individuals who pursue physical treatment and desire to make a healthy adjustment to living as the preferred sex.

Declaration of interests

None

REFERENCES

1. SLEE VN. The International Classification of Diseases: ninth revision (ICD-9). *Ann Intern Med* 1978;88:424-6.
2. IMBIMBO C, VERZE P, PALMIERI A et al. A report from a single institute's 14-year experience in treatment of male-to-female transsexuals. *J Sex Med* 2009;6:2736-45.
3. WALLIEN MS, SWAAB H, COHEN-KETTENIS PT. Psychiatric comorbidity among children with gender identity disorder. *J Am Acad Child Adolesc Psychiatry* 2007;46:1307-14.
4. MCLELLAND M, DASGUPTA R. *Genders, transgenders and sexualities in Japan*. London and New York: Routledge, 2005.
5. LOTHSTEIN LM. Psychological testing with transsexuals: a 30-year review. *J Pers Assess* 1984;48: 500-7.
6. TUBER S, COATES S. Indices of psychopathology in the Rorschachs of boys with severe gender identity disorder: a comparison with normal control subjects. *J Pers Assess* 1989;53:100-12.
7. MURRAY JF. Borderline manifestations in the Rorschachs of male transsexuals. *J Pers Assess* 1985;49:454-66.
8. HATHAWAY SR. A coding system for MMPI profile classification. *J Consult Psychol* 1947;11:334-7.
9. ABE M. Comparison between Japanese and Americans by the MMPI. Psychological papers to commemorate the 35th anniversary of Dr. Ohwaki's professorship at Tohoku University, 1959.
10. JAPANESE MMPI RESEARCH GROUP. *Japanese MMPI handbook*. Kyoto: Sankeibo press, 1973.
11. TERADA S, MATSUMOTO Y, SATO T, OKABE N, KISHIMOTO Y, UCHITOMI Y. Suicidal ideation among patients with gender identity disorder. *Psychiatry Res*. 2011;190:159-62.
12. MELENDEZ RM, PINTO R. 'It's really a hard life': love, gender and HIV risk among male-to-female transgender persons. *Cult Health Sex*. 2007;9:233-45.
13. ESPELAGE DL, CAUFFMAN E, BROIDY L, PIQUE-RO AR, MAZEROLLE P, STEINER H. A cluster-analytic investigation of MMPI profiles of serious male and female juvenile offenders. *J Am Acad Child Adolesc Psychiatry*. 2003;42:770-7.
14. FAUSTMAN WO, KING RJ, FAULL KF, MOSES JA JR, BENSON KL, ZARCONI VP, CSERNANSKY JG. MMPI measures of impulsivity and depression correlate with CSF 5-HIAA and HVA in depression but not schizophrenia. *Journal of affective disorders*. 1991;22:235-9.
15. OKABE N, SATO T, MATSUMOTO Y, IDO Y, TERADA S, KURODA S. Clinical characteristics of patients with gender identity disorder at a Japanese gender identity disorder clinic. *Psychiatry Res* 2008;157:315-8.
16. LANDEN M, WALINDER J, LUNDSTROM B. Clinical characteristics of a total cohort of female and male applicants for sex reassignment: a descriptive study. *Acta Psychiatr Scand* 1998;97:189-94.
17. ROWLAND D, INCROCCI L. *Handbook of gender identity disorders*. New Jersey: John Wiley & Sons, Inc., 2008.
18. KESSLAR S, McKENNA W. *Gender: An ethnomethodological approach*. Chicago: The University of Chicago Press, 1978.

Received February 17, 2014

Accepted March 27, 2014