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Minnesota Multiphasic Personality Inventory Characteristics of Parricide Offenders with Schizophrenia in Korea

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Objective This study aims to examine the personality characteristics in parricide offenders, by using the Minnesota Multiphasic Personality Inventory (MMPI) test, which is commonly used in clinical medicine.

Methods A total of 73 parricide offenders with schizophrenia who were admitted to National Forensic Hospital in Gongju city between September 2014 and February 2015, and 104 comparison schizophrenia patients who had been admitted to Dankook University Hospital in Cheonan city the same hospital, completed the Korean version of the MMPI.

Results The parricide offender group showed significantly higher on L, F, Hs, Hy and Pd than the comparison group. The result of the regression analysis indicated that Pd and Si significantly increased the odd ratio of the sexual offender group by 2.77 times and 0.32 times, respectively (p=0.029 and p=0.023). The offenders of parricide may have developed the following characteristics: hypochondriasis, hysteria and psychopathic deviate.

Conclusion These results suggested that the psychopatholgy in the offenders of parricide might be different, compared to the control group.

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Key Words Offenders of parricide, Minnesota Multiphasic Personality Inventory, Psychopathology, Schizophrenia.

INTRODUCTION

Parricide is the act of murdering one's own or spouse's lineal ascendant (Paragraph 2, Article 250, Criminal Law), and a lineal ascendant refers to parents, foster parents, and adoptive parents. In foreign countries, the prevalence rate of parricide was reported to be 2–4% of murder[1-4] and in Korea, a study reported that 5.3% of murder was parricide[5,6] Parricide is very rare in clinical applications, and thus there have been only case reports or small-scale research. As for previous large-scale research, Devaux et al. studied 61 parricide cases that had occurred between 1958 and 1967, and Clark[7] studied 26 and 58 subjects, respectively.

In comparison with criminal offender, parricide is often committed by those who have abnormal family relationship which is exceedingly severe or overly protective or psychological problems such as dependent personality, frequently accompanying psychiatric diseases including schizophrenia. Accompanying psychiatric disorders are mostly schizophrenia, depressive disorder, and alcohol/substance abuse.[8,9] Among them, the most common disorder is schizophrenia. According to previous research, it was reported that 47–60% of parricide offenders had psychosis[10-12] and that more than 50% had schizophrenia.[1,13] In a study performed in Korea, it was reported that 43% of parricide offenders were accompanied by psychiatric disorder[5] Also, among the symptoms of schizophrenia, paranoid delusions were the most common symptom associated with parricide,[4] and it was reported that the risk of parricide increases if the accompanying psychiatric disorder is not properly treated.

In foreign countries, there have been a small number of pre-

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vious studies that reported the psychopathologic characteristics of murderers through the MMPI. In an early study, McKinley and Hathway[14] suggested that the characteristic scales of murderers were PD, Pa, and Ma. In an MMPI comparison study of male prisoners and a normal control group, Rosen and Mink[15] suggested that the most characteristic discrimination scales between the two groups were D and Pd.

In a study of the inmates of state prison, Davis and Sines[16] suggested that the most important characteristics were the Pd and Hy scales. Rader[17] reported that rapists showed increased F, Hs, D, Hy, Pd, Pa, and St; and sexual offenders showed increased Pd, Pt, and Sc. In a comparison study of violent criminal offenders and nonviolent criminal offenders, Jones et al.[18] reported differences in F, Pa, Pt, and Sc. In a review study, Grover[19] reported that the MMPI could be useful for evaluating sex offenders, and that the increases in L, F, Pd, and Sc are characteristic of sex offenders.

There have been a small number of MMPI characteristic studies on murderers in Korea and foreign countries. However, there has been only one MMPI characteristic study on domestic homicide, and there has been no study on parricide. In this study, the MMPI characteristics of parricide offenders were investigated for the first time in Korea. In particular, to correct the confounding factor of schizophrenia, which is the most common psychiatric disorder in parricide, the control group was established as a schizophrenia group.

On the other hand, this study aimed to obtain information for efficient evaluation and treatment by examining the characteristics of parricide offenders in Korea through the MMPI. The MMPI is a self-report evaluation tool for the objective measurement of abnormal behavior and psychopathology. The MMPI is widely used in the clinical applications of psychiatry; it can be easily implemented and can obtain much information in a short time.

In this study, the psychopathologic characteristics of parricide offenders were examined for the first time in Korea by comparing the psychiatric clinical characteristics of 73 parricide offenders with schizophrenia and 104 comparison patients with schizophrenia through the MMPI.

METHODS

Subjects

The research subjects were 125 patients who had been diagnosed with schizophrenia by a psychiatrist based on the DSM-IV-TR. The parricide offenders who had received a psychiatric evaluation, or had been hospitalized in the National Forensic Hospital, Ministry of Justice between January 2000 and December 2014 were personally interviewed. Among them, for 52 patients, the MMPI could not be implemented due to the refusal of the test, etc., the result of the MMPI could not be examined, or the patients had been diagnosed with a mental disability and organic brain disorder. Thus, the final parricide offender group included 73 patients excluding these 52 patients. The control group included 104 adult patients who had been diagnosed with schizophrenia by a psychiatrist among the patients who had visited a university hospital in city A with a population of about 500,000. Patients with mental disability or organic brain disorder were excluded from the research subjects. In the medical checkup and physical examination for all the research subjects, there was no particular abnormal finding in terms of internal medicine.

The Institutional Review Board of Dankook University Hospital (DK-2015-09-004) approved the present study. All participants were interviewed personally and given a full verbal explanation and short form document with information about the study, including the study's purpose and procedure. Informed written consent was obtained from each participant before the study began.

Assessments

Epidemiological questionnaire

The questionnaires for epidemiological characteristics consisted of questions on sex, age, socioeconomic status, and recent work or academic achievement.

MMPI

The MMPI is an objective personality test that is the most widely used and has been the most actively studied. In the 1940s McKinley and Hathaway at the University of Minnesota in the United States originally made the MMPI as a method for the objective measurement of abnormal behavior. Thus, the primary purpose of the MMPI is a measurement for psychiatric diagnosis and classification, and it is not for the measurement of general personality characteristics. However, under the assumption that the concept of pathologic classification can be applied to the behavior explanation of normal persons to a certain extent, general personality characteristics can also be evaluated through the MMPI to a certain extent. This response is scored based on 10 clinical scales for measuring the type of major abnormal behavior and four validity scales for measuring the test-taking attitude of a subject. In Korea, the MMPI was first standardized in 1963, and the MMPI that was restandardized in 1989 by the clinical psychology department of the Korean Psychological Association has been widely used in clinical and counseling applications in hospitals and schools.[20,21] The MMPI consists of 383 questions; and for each question, a subject is made to select an answer between 'Yes' and 'No.'

Statistical analysis

The data was processed using SPSS 15.0 (Korean version). In the statistical analysis, a cross tabulation analysis was performed for an epidemiologic survey evaluation (e.g., gender). An ANCOVA test considering age and sex was used for the analysis of the MMPI scores between both groups. A chi-square test was used to compare the frequencies between the parricide group and comparison group, which had a score of higher quartile. The odd ratio to the parricide group was calculated using a logistic regression analysis. All the statistical analyses were considered statistically significant when the p-value was below 0.05.

RESULTS

The parricide offender group included 62 males (84.9%) and 11 females (15.1%), and the comparison group included 39 males (37.5%) and 64 females (61.5%). Thus, there was a significant frequency difference between both groups (χ^2= 39.47, p<0.001). The average age of the parricide offender group was 41.23±9.45 and the comparison group was 31.84± 11.77, resulting in a significant difference between both groups (t=28.48, p<0.001) (Table 1).

The parricide offender group had L, F, Hs, Hy, Pd score of 53.42±11.19, 61.73±11.43, 55.05±10.59, 55.56±12.73, 59.27±11.06, and the comparison group had L, F, Hs, Hy, Pd score of 58.92±14.35, 50.26±10.89, 51.78±9.59, 51.81±9.89, 55.08±11.53, resulting in a significant difference between both groups (F=7.51, p=0.007; F=45.68, p<0.001; F=4.59, p= 0.033; F=4.87, p=0.029; F=5.88, p=0.016) (Table 2).

In regards to L, F, Hs, Pd of parricide offender group above a score of 60, there were 20 subjects (27.4%), 35 subjects (47.9%), 26 subjects (35.6%), 36 subjects (49.3%), and L, F, Hs, Pd of the comparison group included 46 subjects (44.2%), 19

Table 1. Epidemiological characteristics between parricide offenders group and comparison group

Rating scale	Offenders of parricide group (N=73) Mean±SD	Comparison group (N=104) Mean±SD	F or χ^2	p value
Age*	41.14±9.51	31.84±11.77	31.25	<0.000
Sex†			39.39	<0.001
Male	62 (84.9%)	39 (37.5%)		
Female	11 (15.1%)	65 (62.5%)		
Education level (N, %)†			0.65	0.419
High school or less	41 (56.2%)	52 (50.0%)		
More than high school	32 (43.8%)	52 (50.0%)		

These data represent mean±SD. *by independent t test, or N (%), †by chi-square test, significant p value<0.05

Table 2. MMPI profile between the offenders of parricide of group and control group

Variables of MMPI	Offenders of parricide group (N=73) Mean±SD	Comparison group (N=104) Mean±SD	F	p value
L	53.43±11.19	58.92±14.35	7.51	0.007
F	61.73±11.43	50.26±10.89	45.68	0.000
K	49.37±12.39	47.85±11.36	0.72	0.399
Hs	55.05±10.59	51.78±9.59	4.59	0.033
D	55.84±13.45	53.50±11.35	1.56	0.214
Hy	55.56±12.73	51.81±9.89	4.87	0.029
Pd	59.27±11.06	55.08±11.53	5.88	0.016
Mf	53.88±9.90	51.44±10.76	2.34	0.128
Pa	66.36±17.48	64.70±16.48	0.41	0.522
Pt	60.16±13.24	59.07±12.21	0.32	0.571
Sc	64.27±11.09	61.73±13.95	1.68	0.197
Ma	55.88±12.32	56.38±12.15	0.07	0.786
Si	55.15±10.98	54.85±11.81	0.03	0.862

These data represent mean±SD, by ANCOVA adjusted for sex, by general linear model, significant p value<0.05. MMPI: Minnesota Multiphasic Personality Inventory, L: lie, F: infrequency, K: defensiveness, Hs: hypochondriasis, D: depression, Hy: hysteria, Pd: psychopathic deviate, Mf: masculinity-femininity, Pa: paranoia, Pt: psychasthenia, Sc: schizophrenia, Ma: hypomania, Si: social introversion

subjects (18.3%), 22 subjects (21.2%), 33 subjects (31.7%). Thus, there was a significant frequency difference between both groups (χ^2=5.20, p=0.023; χ^2=17.82, p<0.001; χ^2=4.54, p=0.033; χ^2=5.58, p=0.018) (Table 3).

In the logistic regression model of the parricide offender group and the comparison group, the relative risk of Pd was 2.77 times higher (confidence interval 1.11–6.91), which showed a statistical significance (χ^2=4.78, p=0.029) and the relative risk of Si was 0.32 times higher (confidence interval 0.12–0.85), which showed a statistical significance (χ^2=5.20, p=0.023) (Table 4).

DISCUSSION

In this study, the control group included the subjects having schizophrenia, not the general population, because the high scores of the Sc or Pa sub-scales of the MMPI, which are characteristics of schizophrenia, are expected to found in the parricide group having schizophrenia but not among the general population. In other words, it was assumed that the high scores of the Sc or Pa sub-scales of the MMPI represents not the characteristics of the parricide group but the characteristics of the schizophrenia group, and thus the schizophrenia

Table 3. MMPI profile between the offenders of parricide group and control group: the frequency of persons above 60T

Variables of MMPI	Offenders of parricide group (N=73) N (%)	Comparison group (N=104) N (%)	χ^2	p value
L	20 (27.4)	46 (44.2)	5.20	0.023
F	35 (47.9)	19 (18.3)	17.82	0.000
K	15 (20.5)	15 (14.4)	1.14	0.285
Hs	26 (35.6)	22 (21.2)	4.54	0.033
D	27 (37.0)	28 (26.9)	2.03	0.154
Hy	24 (32.9)	24 (23.1)	2.08	0.149
Pd	36 (49.3)	33 (31.7)	5.58	0.018
Mf	22 (30.1)	25 (24.0)	0.82	0.366
Pa	44 (60.3)	57 (54.8)	0.52	0.470
Pt	38 (52.1)	44 (42.3)	1.64	0.200
Sc	42 (57.5)	54 (51.9)	0.54	0.461
Ma	21 (28.8)	38 (36.5)	1.17	0.280
Si	21 (28.8)	37 (35.6)	0.90	0.342

These data represent N (%), by chi-square test, significant p value<0.05. MMPI: Minnesota Multiphasic Personality Inventory, L: lie, F: infrequency, K: defensiveness, Hs: hypochondriasis, D: depression, Hy: hysteria, Pd: psychopathic deviate, Mf: masculinity-femininity, Pa: paranoia, Pt: psychasthenia, Sc: schizophrenia, Ma: hypomania, Si: social introversion

Table 4. Parameter estimates for logistic model of the offenders of parricide group and control group

Variables	Parameter estimate	Standard error	Chi-square	p value	Odds ratio
Sex	-2.67	0.46	34.19	<0.001	0.069 (0.03–0.17)
Education level	-0.32	0.40	0.62	0.432	0.73 (0.33–1.60)
Hs	0.44	0.56	0.63	0.428	1.56 (0.52–4.68)
D	0.08	0.53	0.02	0.880	1.08 (0.38–3.08)
Hy	-0.25	0.60	0.18	0.676	0.78 (0.24–2.52)
Pd	1.02	0.47	4.78	0.029	2.77 (1.11–6.91)
Mf	-0.55	0.46	1.40	0.237	0.58 (0.23–1.43)
Pa	0.51	0.51	1.00	0.317	1.66 (0.62–4.46)
Pt	0.43	0.48	0.78	0.376	1.53 (0.60–3.96)
Sc	0.06	0.50	0.01	0.911	1.06 (0.40–2.82)
Ma	-0.28	0.45	0.40	0.529	0.75 (0.31–1.83)
Si	-1.16	0.51	5.20	0.023	0.32 (0.12–0.85)

These data represent by bivariate logistic regression analysis, significant p value<0.05. MMPI: Minnesota Multiphasic Personality Inventory, L: lie, F: infrequency, K: defensiveness, Hs: hypochondriasis, D: depression, Hy: hysteria, Pd: psychopathic deviate, Mf: masculinity-femininity, Pa: paranoia, Pt: psychasthenia, Sc: schizophrenia, Ma: hypomania, Si: social introversion

patients were chosen as the control group of this study.

In Korea, there has been a previous study on the clinical characteristics of patients with schizophrenia who have committed parricide.[22] Among the 122 patients with schizophrenia who were hospitalized in the Forensic Hospital, Ministry of Justice between November–December 2007, 48.4% had committed parricide. They mostly showed an early onset of schizophrenia, but when the symptoms became more severe,[23] there was much violence in the family.[11,13] Many of the subjects were not receiving drug treatment at the time of the incident. Their major symptoms included threat/control override, Capgrass, delusional perceptions, and directive auditory hallucinations.

The study of Kalichman[24] is the only previous research that reported the psychopathologic characteristics of parricide offenders using the MMPI. Kalichman compared the MMPI characteristics of 16 females and 20 males who had murdered their spouse with the MMPI characteristics of the control group consisting of 19 males who had murdered a stranger. The result showed that the male parricide offenders had a lower Ma scale score than the control group. The result of the present study is different from that of Kalichman. In the present study, the Ma scale of the parricide offenders was relatively lower than the average of the control group, but there was no statistically significant difference.

In a review study that synthesized 14 previous studies on murderers, Craig[25] suggested that the most common characteristic was the increase in the Pd scale, the increase in the Pa scale, or the increases in both the Pd and Sc scales. Craig mentioned that the increase in the Pd scale is the most common characteristic in previous studies, but this result is not a pathognomonic psychopathological finding of murderers. In addition, the increases in more than two MMPI scales were reported as the characteristic of murderers, where the increases in the Pd-Ma, Pd-D, Sc-Pa-Pd, Sc-Ma-Pd, and D-Hy-Hy scales were reported, respectively. In some studies, the increases in most scales, which are not characteristic, were reported.

In a MMPI study of 305 murderers in military prison[26] reported significant increases in the Pd, Pa, and Sc scales, and the result of the discriminant analysis indicated that the Hy and D scales had the largest discrimination power. In a recent MMPI study of 110 murderers in prison[27] suggested that the most important characteristic were the increases in the Pd and D scales.

For the L, F, and K validity scales, the parricide offender group showed an inverse V shape (^), while the control group showed a V shape (∨). This suggests that the parricide offender group complains of more psychological inconvenience or pain, and has a higher possibility of expressing externalized maladaptive behavior in actual daily life due to the lack of coping strategies for the adaptive handling of mental problems or stress, compared to the control group.

In this study, the MMPI clinical scales that showed a statistically significant difference between the parricide offender group and the control group were the Hs, Hy, and Pd scales. This result is consistent with the results of the studies on other criminal offender groups in Korea and foreign countries. In this study, the parricide group shows high scores in the F, Hs, Hy, and Pd scales among the MMPI sub-scales. The F scale represents how different a person's report is with that of general population, a higher F scale score indicating more severe psychopathologic state. The Hs scale, which is a hypochondriasis scale, represents neurotic anxiety such as excessive anxiety or obsession about body symptoms. The Hy scale, which is a hysteresis scale, represents how much a person uses denial as a method of avoiding psychological distress. When the score of the Hs scale is high, a person may show denial, repression, or hysterical conversion. The Pd scale, which is a aggressiveness scale, represents hostile and aggressive interpersonal relation as well as rebellious, impulsive, and antisocial tendency of behavior. The reliability of the MMPI scale with respect to the parricide group was low. In particular, the high scores in the F scale in the parricide group indicated that the problematic domain is broad, the problematic degree is severe, the psychopathologic state is serious, and effective defense mechanisms are lacking. The high scores in the Hs-Hy scales indicated that the subjects of the parricide group have a strong desire for affection, attention, and sympathy, and are very dependent. This means that they express strong hostility and rage to those who do not satisfy their desire for attention. The Hy-Pd pair scale is an important index that represents if one properly controls and suppresses socially unallowable impulses such as aggression and hostility. For the parricide offender group, the Pd scale score was higher than the Hy scale score. This indicates that they excessively control their emotion on ordinary days, and explosively express anger and hostility periodically. In particular, when they have increased stress and persecutory delusion, their judgment could lapse, and they could show explosive emotional response to a trivial external stimulus. In addition to the Pd, Hs, and Hy scales that showed a difference between the parricide offender group and the control group, the Pa and Sc scales also had high scores. However, the Pa and Sc scales are the major scales observed in schizophrenia. In this study, the control group, which was a schizophrenia group, also had high Pa and Sc scale scores, and thus there was no significant difference between the two groups. If the parricide offender group had been compared with a general control group, the Pa and Sc scores as well as the Pd, Hs, and Hy scores would have shown a significant difference.

The result of the logistic regression analysis showed that the clinical scale best representing the characteristics of the parricide offender group among the MMPI scales was the Pd and Si scale. The increase in the Pd scale was also observed in many studies on other types of criminal offender groups as well as a parricide offender group. This result indicates that the antisocial personality characteristics of criminal offenders with schizophrenia, which are different from the characteristics of general patients with schizophrenia, need to be understood. More importantly, appropriate intervention on this is required in the treatment of parricide offenders. These individuals could display a periodic behavior pattern of appropriate behavior followed by a sudden explosive emotional response exhibiting chronic and fixed personality problems and impulse control disorder. Therefore, drug treatment and cognitive behavior therapy need to be performed together so that anger management and their ability to control their impulses could be improved.

The limitations of this study are as follows. First, it is possible that the parricide offender group could not answer accurately due to secondary gain or various environmental factors as well as legal problems. Thus, although the reliability of the test was demonstrated to a certain extent through the validity scale of the MMPI, examining each psychopathologic characteristic could be limited due to the limitation of a self-report test. Second, our research team compared the frequency of more than 60 points between the parricide offender group and the general control group, but it was similar to the result of score comparison for the clinical scales. This study was based on a small patient group, and thus, the inherent MMPI characteristics of a parricide offender group need to be examined based on a larger patient group through discriminant analysis or cluster analysis in the future. Third, schizophrenia was used as the control group, but detailed factors such as age and economic status could not be adjusted. Also, the control group was the schizophrenia patient group who had visited a university hospital, but this is limited in representing the characteristics of general schizophrenia.

In this study, the psychopathologic characteristics of parricide offenders were examined for the first time in Korea by comparing the psychiatric clinical characteristics of parricide offenders and comparison persons through the MMPI. In the future, studies based on a larger number of parricide offenders need to be performed by supplementing the aforementioned disadvantages. There are various detailed types of parricide offenders, and thus, efforts need to be made to examine the clinical characteristics depending on these detailed types. In addition, studies where other murderer groups are used as the control are also needed for the analysis of the clinical characteristics of parricide offenders.

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