

# Comparative Analysis of the Clinical and Criminal Characteristics of Male and Female Perpetrators of Homicide or Homicide Attempts in the Detention Ward

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## ABSTRACT

**Background:** The aim of the study is to compare male and female cases who were in the prisoner service and committed murder/attempted murder in terms of clinical and criminal characteristics.

**Methods:** Information about 101 female and 101 male cases who were admitted to the prisoner service for murder and/or attempted murder were collected through a data form as a result of examining the hospitalization files.

**Results:** The rate of men having psychotic disorders (50.8%) was found to be higher than the rate of women (20.4%). While men's rates of having antisocial personality disorder are higher than women's rates, women's borderline personality disorder rates are significantly higher than men's rates. The rate of women's previous history of suicide (50.5%) is higher than the rate of men's history (35.6%). It was seen that the rate of women admitted to the service to be their first crime was higher (87.1%) than men (46.5%).

**Conclusion:** It is important to take gender-based differences into account and organize personalized treatment during the forensic treatment process. More clinical research on gender differences in homicide crimes is needed.

**Key Words:** Forensic psychiatry, homicide, gender

## ÖZET

**Amaç:** Çalışmanın amacı tutuklu servisinde yatmış olan, cinayet/cinayete teşebbüs suçu işlemiş kadın ve erkek olguların klinik ve suça ilişkin özellikler bakımından karşılaştırılmasıdır.

**Yöntem:** Araştırma için tutuklu servisine cinayet ve/veya cinayete teşebbüs suçu ile yatışı olan 101 kadın olgu ve 101 erkek olguya ait sosyodemografik, klinik ve suça ilişkin bilgiler, yatış dosyalarının incelenmesi sonucu bir veri formu aracılığı ile toplanmıştır.

**Bulgular:** Psikotik bozukluğu olan erkeklerin oranı (%50,8) kadınların oranından (%20,4) daha yüksek bulunmuştur. Erkeklerin antisosyal kişilik bozukluğuna sahip olma oranları kadınlara göre daha yüksekken, kadınların borderline kişilik bozukluğu oranları erkeklerle göre anlamlı derecede yüksektir. Kadınların geçmiş intihar öyküsü oranları (%50,5), erkeklerin intihar öyküsü oranlarından (%35,6) daha yüksektir. Servise ilk suçu nedeniyle başvuran kadınların oranının (%87,1) erkeklerden (%46,5) daha yüksek olduğu görülmüştür.

**Sonuç:** Adli tedavi sürecinde cinsiyete dayalı farkların gözlemlenmesi ve kişiye özgü tedavi düzenlenmesi önemlidir. Homisid suçlarında cinsiyet farklılıklarına ilişkin daha fazla klinik araştırmaya ihtiyaç duyulmaktadır.

**Anahtar Kelimeler:** Adli psikiyatri, cinsiyet, cinayet

**M**urder is one of the most serious violent behaviors, and it has been reported that psychiatric disorders may also have an impact on homicidal behavior (1). Researches have focused on male perpetrators and less attention has been paid to female offenders (2, 3). The average murder rate, defined as the number of intentional homicides per 100,000 people in Turkey between 1997 and 2015, is 4.52. Only 10.84% of perpetrators were women (4).

The rate of psychiatric disorders in prisoners is significantly higher than the general population (1). Although the most common diagnoses are antisocial personality disorder (ASPD) and alcohol and/or substance use disorder, many psychiatric disorders are more common in prisoners than in the general population (5). The rate of men in terms of crime prevalence is found to be higher than women, therefore the literature in this field is based mostly on male case data (6, 7). Many studies on homicide report that the rate of major psychiatric disorders is higher in female criminals than in men (1, 8). It is stated that men are diagnosed with personality disorders at a higher rate and have a higher rate of alcohol/substance abuse (9). It is reported that the victim is more often a family member or an acquaintance in those with severe psychiatric disorders than in those without, and the rate of committing crimes against acquaintances is higher in women than in men (10).

The aim of this research was to collect and evaluate data on the demographic, clinical and criminological characteristics of male and female cases who committed murder or attempted murder, as well as data on clinical practices in psychiatric services; since such a study has not been conducted in our country before, it was thought that it could create a resource in this field in the future.

## Material and Methods

The research population includes those who were hospitalized at Bakırköy Research & Training Hospital for Psychiatry, Neurology and Neurosurgery Prisoner Service between 01 January 2010 and 01 April 2017 for diagnosis, treatment and forensic procedures, and who are in prison for murder and/or attempted murder. It consists of 111 female and 481 male patients. The study was conducted through a retrospective examination of the case files. The sample of the research consists of 101 female and 101 male patients. The study started by accessing the files of female patients. First of all, the names of female cases with murder and/or attempted murder crimes were

taken retrospectively from April 2017, and those with recurrent hospitalizations were not included. 111 female cases who were incarcerated for related crimes between January 2010 and April 2017 were reached. The file of 1 case could not be accessed. The data of a total of 9 cases could not be included in the study due to the fact that the crime information in the hospital registration and the inpatient file did not match. Of the 110 female case files examined, 101 were found to meet the inclusion criteria for the study. To identify male cases, the registrations were examined, starting from April 2017 until January 2010, and those with similar recurrent hospitalizations were not included in the study for the second time. When those with recurrent hospitalizations were excluded, the names of 481 male cases related to the relevant crimes were obtained from the registration archive.

In order to equalize the number of male and female cases in the sample, 120 male cases were selected from 481 male cases in the study population by simple random sampling method. The hospitalization files of 5 of 120 male cases could not be accessed. Of the remaining 115 male cases, 14 cases were not included in the study because the information about the crime did not match in the protocol book and the inpatient file. It was determined that 101 of the 115 male cases examined in total met the inclusion criteria for the study. A total of 202 files, 101 files belonging to female cases and 101 files belonging to male cases, were examined and a data form prepared by the researcher was filled in.

The information of all cases was obtained by retrospective review from the inpatient registration book and the data in the inpatient files. A data form containing sociodemographic, clinical and criminal characteristics created by the researcher was used to obtain target data from the cases. Since participants who were hospitalized since 2010 were included in the study and DSM-IV was used until 2013, the diagnoses were classified in accordance with the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV).

Approval was received from Bakırköy Research & Training Hospital Ethical Committee on 04.04.2017 with the protocol number 4.

### *The questionnaire*

The data form consists of demographic questions, clinical questions, and crime-related questions.

**Data analysis**

SPSS (version 26) program was used for statistical analysis of the data. Independent samples t-test was used to determine whether continuous variables differed in terms of gender, and Pearson chi-square test was used to compare categorical variables in terms of gender. While effect sizes in independent sample t-tests were presented as Cohen's d coefficient, effect sizes in chi-square tests were presented as Phi coefficient( $\phi$ ) if the cross-tabs were 2x2 in size, and as Cramer's V coefficient if the cross-tabs were larger. Statistical significance was accepted as  $p < 0.05$  in all analyses.

**Results**

*Comparison of sociodemographic characteristics in terms of sex*

As a result of comparing the demographic characteristics of the participants included in the study in terms of sex, age ( $t(200)=1.290, p=0.198, d=0.18$ ), education period ( $t(200)=0.742, p=0.459, d=0.11$ ) and it was determined that social support status ( $\chi^2=0.181, p=0.671, \phi=0.03$ ) did not differ between women and men. The findings are included in Table 1.

**Table 1: Comparison of sociodemographic characteristics in terms of sex**

	Male (n= 101)	Female (n= 101)	Statistics	p	Effect size
Age (year), Mean $\pm$ SD	30.53 $\pm$ 12,32	32.58 $\pm$ 10,15	$t(200)= 1.290$	0.198	0.18
Education (year), Mean $\pm$ SD	7.50 $\pm$ 2.98	7.11 $\pm$ 4.30	$t(200)= 0.742$	0.459	0.11
Marital status					
Married	20 (%19.8)	45 (%44.6)	$\chi^2(2)= 42.058$	< 0.001	0.46
Single	58 (%57.4)	14(%13.8)			
Divorced	23 (%22.8)	42 (%41.6)			
Working status					
Unemployed	52 (%51.5)	72 (%71.3)	$\chi^2(2)= 8.680$	0.013	0.21
Not regular	17(%16.8)	12 (%11.9)			
Employed	32 (%31.7)	17 (%16.8)			
Social support					
Sufficient	43 (%42.6)	46 (%45.5)	$\chi^2= 0.181$	0.671	0.03
Insufficient/ none	58(%57.4)	55 (%54.5)			

*SD: Standard deviation, p < 0.05*

*Comparison of crime-related characteristics in terms of sex*  
While the rate of women being admitted to the service due to the risk of suicide (65.4%) is higher than the rate of men (47.4%), the rate of men being admitted to the

service for other treatments (52.6%) is higher than the rate of women being admitted to the service for other treatments (34.6%) ( $\chi^2= 5,211, p= 0,022, \phi=0,18$ ). Crime-related findings are included in Table 2.

**Table 2: Comparison of crime-related characteristics in terms of sex**

	Male (n= 101)	Female (n= 101)	Statistics	p	Effect size
<b>Reasons for admission to the prisoner service</b>					
Treatment	75 (%74.3)	81 (%80.2)	$\chi^2= 1.013$	0.314	0.07
Criminal responsibility	26 (%25.7)	20 (%19.8)			
<b>Reason for treatment</b>					
Suicide	36 (%47.4)	53 (%65.4)	$\chi^2= 5.211$	0.022	0.18
Other treatments	40 (%52.6)	28 (%34.6)			
<b>Crime</b>					
Murder	87 (%86.1)	93 (%92.1)	$\chi^2= 1.836$	0.175	0.10
Attempted murder	14 (%13.9)	8 (%7.9)			
<b>Previous crime</b>					
Yes	54 (%53.5)	13 (%12.9)	$\chi^2= 37.541$	<0.001	0.43
No	47 (%46.5)	88 (%87.1)			
Duration of stay in prison (days), Mean $\pm$ SD	1916.9 $\pm$ 1573.4	754.5 $\pm$ 1023.8	$t(200)= 6.224$	<0.001	0.88
<b>Repeated incarceration</b>					
No	49 (%48.5)	96 (%95.0)	$\chi^2= 53.989$	<0.001	0.52
Yes	52 (%51.5)	5 (%5.0)			
<b>Who the crime was committed against</b>					
Acquaintance	56 (%55.4)	91 (%90.1)	$\chi^2= 30.606$	<0.001	0.39
Unknown	45 (%44.6)	10 (%9.9)			
<b>Psychiatric history before treatment</b>					
No	69 (%69.0)	54 (%55.1)	$\chi^2= 4.063$	0.044	0.14
Yes	31 (%31.0)	44 (%44.9)			

*SD: Standard deviation, p < 0.05*

Comparison of diagnosis and clinical features according to sex

Findings regarding the comparison of diagnoses are summarized in Table 3.

**Table 3: Comparison of diagnosis of cases according to sex**

	Male (n= 101)	Female (n= 101)	Statistics	p	Effect size
<b>Malingering</b>					
No	91 (%90.1)	100 (%99.0)	$\chi^2= 7.788$	0.005	0.20
Yes	19 (%9.9)	1 (%1.0)			
<b>Substance use</b>					
No	42 (%41.6)	83 (%82.2)	$\chi^2= 35.279$	<0.001	0.42
Yes	59 (%58.4)	18 (%17.8)			
<b>Diagnosis in Axis I</b>					
No	36 (%35.6)	8 (%7.9)	$\chi^2= 22.780$	<0.001	0.34
Yes	65 (%64.4)	93 (%92.1)			
<b>Type of diagnosis in the Axis I</b>	(n = 65)	(n = 93)	$\chi^2(3)= 18.808$	<0.001	0.35
Psychotic disorders	33 (%50.8)	19 (%20.4)			
Mood disorders	17 (%26.2)	26 (%28.0)			
Anxiety disorders	13 (%20.0)	44 (%47.3)			
Others	2 (%3.1)	4 (%4.3)			
<b>Diagnosis in Axis II</b>					
No	47 (%46.5)	69 (%68.3)	$\chi^2= 9.800$	0.002	0.22
Yes	54 (%53.5)	32 (%31.7)			
<b>Type of diagnosis in the Axis II</b>	(n = 54)	(n = 32)	$\chi^2(2)= 45.032$	<0.001	0.72
Antisocial personality disorder	50 (%92.6)	7 (%21.9)			
Borderline personality disorder	2 (%3.7)	15 (%46.9)			
Mental retardation	2 (%3.7)	10 (%31.3)			

*p* < 0.05

Men and women did not differ in terms of total number of hospitalizations ( $t(199)=1.448$ ,  $p=0.149$ ,  $d=0.21$ ), number of hospitalizations to the forensic service ( $t(199)=1.086$ ,

$p=0.279$ ,  $d=0.15$ ) and length of stay in the forensic service ( $t(199)=0.536$ ,  $p=0.593$ ,  $d=0.08$ ). Other findings regarding the comparison of clinical features are summarized in Table 4.

**Table 4: Comparison of clinical features of cases according to sex**

	Male (n= 101)	Female (n=101)	Statistics	p	Effect size
<b>Total number of hospitalizations, Mean ± SD</b>	3.12 ± 2.88	2.59 ± 2.23	$t(199)= 1.448$	0.149	0.21
<b>Number of hospitalizations to the forensic service, Mean ± SD</b>	2.47 ± 2.50	2.13 ± 1.93	$t(199)= 1.086$	0.279	0.15
<b>Length of stay in the forensic service (days), Mean ± SD</b>	117.21 ± 207.36	137.78 ± 323.67	$t(199)= 0.536$	0.593	0.08
<b>Treatment during hospitalization</b>					
Follow-up without medication	13 (%12.9)	9 (%8.9)	$\chi^2(2)= 0.821$	0.663	0.06
Pharmacological treatment	74 (%73.2)	77 (%76.2)			
Pharmacological + ECT	14 (%13.9)	15 (%14.9)			
<b>Need for close observation during hospitalization</b>					
No	38 (%37.6)	22 (%21.8)	$\chi^2= 6.069$	0.014	0.17
Yes	63 (%62.4)	79 (%78.2)			
<b>Self mutilation history</b>					
No	69 (%68.3)	82 (%81.2)	$\chi^2= 4.433$	0.035	0.15
Yes	32 (%31.7)	19 (%18.8)			
<b>Suicide attempt just before hospitalization</b>					
No	75 (%74.3)	73 (%72.3)	$\chi^2= 0.101$	0.751	0.02
Yes	26 (%25.7)	28 (%27.7)			
<b>Suicide history</b>					
No	65 (%64.6)	50 (%49.5)	$\chi^2= 4.543$	0.033	0.15
Yes	36 (%35.6)	51 (%50.5)			
<b>Suicide during hospitalization</b>					
No	101 (%100.0)	99 (%98.0)	$\chi^2= 2.020$	0.155	0.10
Yes	0	2 (%2.0)			
<b>Recidivism</b>					
No	48 (%47.5)	53 (%52.5)	$\chi^2= 0.495$	0.482	0.05
Yes	53 (%52.5)	48 (%47.5)			

*SD: Standard deviation, p* < 0.05

## Discussion

The rates of being married or divorced among women included in the study were found to be higher than male participants. In a study from Finland in which 91 female and 658 male cases who committed the crime of homicide found that 67% of the female cases were in a relationship, 50% were living with their partners, and 41% of the male cases were found to be living with their partners at the time of the crime (11). The fact that the marriage rate of female cases is higher than male cases' in our sample may be due to factors such as prioritizing the concept of traditional family in Turkey and encouraging women to get married (12); it is thought that this may be related to the higher history of repetitive crime in male cases, and therefore the longer time spent in prison (13).

In the sample of our study, there is no difference between male and female subjects in terms of education period, but it is noteworthy that most of the general sample's education period is 8 years or less. It is known that the risk of committing crime is associated with low education level (14). It has been thought that low education level may be associated with the risk of committing crime in patient groups, regardless of sex (15).

51.5% of the male subjects and 71.3% of the female subjects included in the study did not work in any job before going to prison. In the study by Türkcan et al., where they examined 1831 cases applying to forensic psychiatry, the unemployment rate was 50.2% (16). In Öncü et al.'s (2007) study, in which they compared 70 male cases followed in the forensic ward due to preventive treatment and 70 male cases followed in the acute ward in terms of socioeconomic factors in the patients' committing crimes, unemployment and social insecurity were found to be two separate independent variables that increase the risk of committing crimes (17). The high unemployment rates in our study, consistent with research, can be explained by the low education level of the subjects, a history of repeated crimes and prisons, a higher incidence of psychiatric disorders, alcohol and substance use disorders, and ASPD.

Social support was found to be inadequate in more than half of the cases in the study. Just as negative socioeconomic factors are effective in both the emergence and prognosis of psychiatric disorders, cases with psychiatric disorders may be deprived of this support due to their illness (18). It was thought that it became difficult for them to receive visits due to the presence of a pre-existing psychiatric disorder and the fact that our hospital accepts cases from many provinces of Turkey, as it is a high security service,

and therefore the physical distance between patients and their relatives increases.

In our study, 78.2% of female cases and 62.4% of male cases were kept under close observation. It is reported that antisocial characteristics and criminal history increase rates of physical restraint (19). Since nearly half of our patients hospitalized for treatment were referred due to the risk of suicide or homicide, it was thought that the rate of close observation was high in relation to these risks.

The average length of stay in prison for female cases was lower than males'. It was thought that the longer sentence periods were due to the crime of murder being punished with long-term imprisonment, and the fact that the average sentence period in male cases was found to be longer than in female cases was related to the higher rates of repeat crime in male cases. Studies examining hospital readmissions and recidivism emphasize the negative impact of unemployment, lack of education, and inadequacy of social support systems (19). It is thought that one of the reasons for the high rate of repetitive crime in male cases is the higher number of individuals diagnosed with ASPD in this group.

In a study examining the psychiatric hospitalizations of prisoners, 45.1% of the cases were detainees and convicts brought for emergency treatment; while 26.8% of the cases were sent by the court to determine the risk to society, 12.7% were the convicts who will complete their sentences in the hospital after trial, it was stated that these cases were transferred to various psychiatric units and medium security services (20). Since the prisoner service, where we conducted our study, there may be differences in the indications for hospitalization and diagnosis distribution. The majority of our sample consists of cases hospitalized for treatment purposes. In high security services of developed countries, the majority of cases consist of psychiatric patients who have committed a crime and whose criminal liability has been removed, and people who may or may not have committed a crime but are dangerous (18).

It was stated that being in prison increased the risk of suicide by 9 times in women and 3 times in men compared to those in the general population (21). It is emphasized that weakness in social support, previous suicide attempts, and previous psychiatric history should be taken into consideration to prevent the risk of suicide in prisons (22). Although the lack of social support stands out for both genders in our sample, the fact that the female cases were entering prison for the first time and that almost all of them were diagnosed with an Axis I psychiatric disorder may explain the higher past suicide rates in women than in men.

It was observed that 92.1% of female cases were diagnosed in the Axis I. Of those diagnosed on Axis I, 20.4% were diagnosed with psychotic disorders, 28% with mood disorders, and 47.3% with anxiety disorders. Most of the 31.7% women diagnosed in the Axis II were diagnosed with BPD. It was observed that 64.4% of male cases were diagnosed in the Axis I field. Of those diagnosed on Axis I, 50.8% were diagnosed with psychotic disorders, 26.2% were diagnosed with mood disorders, and 20% were diagnosed with anxiety disorders. Of the 54 men diagnosed in the Axis II field, 92.6% were diagnosed with ASPD. In a study examining 961 male and 126 female homicide offenders, 77.4% of males and 70.8% of females were diagnosed with schizophrenia, 15.1% of males and 29.2% of females were diagnosed with major depressive or manic episodes. In another study examining 4572 homicide offenders found that 7% of female cases had schizophrenia, 14% had a mood disorder, and 11% had a personality disorder, and in male cases, these rates were 6%, 5%, and 6%, respectively (23). Although there are different rates from country to country, it is noteworthy that ASPD is more common in men and BPD in women, in line with our study. Other studies have used psychosis spectrum differences, probably due to differences in sample selection and forensic psychiatric functioning (24). Substance use disorder and ASPD diagnoses have been shown to be strongly associated with criminal behavior (25). Recidivism rates of individuals with both ASPD and substance use disorder have significantly increased, and as is known, the coexistence of these two diagnoses is quite common (25). Our results support the relationship between alcohol/substance use and homicide.

In a study examining the behavior of malingering in 20 homicide offenders sent to forensic psychiatry to determine criminal responsibility, it was determined that almost half of the cases had personality disorders and substance use, and 30% of the cases malingered (26). In our sample, criminal responsibility was asked for 24 out of 101 female cases and 27 out of 101 male cases. Only 1 out of the female cases and 19 out of the male cases were diagnosed with malingering behavior. It is thought that the higher rate of malingering behaviors diagnosed in male cases is related to the higher rate of ASPD in male cases.

In the study of Rossegger et al. (2009) examining female cases who committed violent crimes, it was stated that 46.7% of female cases had a previous criminal record, while this number was stated to be 60.8% for men (14). It is thought that the higher rate of repetitive crime in male cases than in female cases in our sample is related to the higher number of cases with ASPD, the lower number of

Axis I diagnoses in men than in female cases, the lower number of past treatment histories than in female cases, and the higher rate of alcohol/substance abuse.

In studies conducted on serious psychiatric illnesses and violent crimes against individuals, it has been found that the victim is more often a family member or acquaintance in those with severe psychiatric illness than in those without, and the rate of committing crimes against acquaintances is higher in women than in men (10, 27-29). Women who use violence are also reported to be more likely to have experienced trauma, substance abuse and mental health problems, and to target people they are in close relationships with or know (7, 14). In our female sample, the rate of crime committed against acquaintances is 90.1%. The higher rate of committing a crime against acquaintances in female cases than in male cases is due to the higher rate of major psychiatric disorders in women, the higher rate of diagnosis in the Axis I area, the lower rate of Axis II diagnoses, and the lower rate of major psychiatric disorder in male cases. It was thought that factors such as the relatively low rate of Axis I diagnosis, the high rate of Axis II diagnosis and especially the ASPD, and the high rate of alcohol/substance abuse may be related to the higher rate of crime committed against strangers.

This study has some important limitations. First of all, our study was designed as a retrospective file scan. This caused us to only benefit from file information while collecting data. For this reason, some data may have been missing. Personality disorder diagnoses may not be written on the file in order to prevent stigmatization, and this may have affected the statistics regarding the distribution of diagnoses. In the operation of the Prisoner Service, the treatment team changes periodically, so different physicians made the diagnosis. The study data are between January 2010 and April 2017. Until 2013, diagnoses were made according to DSM-IV TR, and after 2013, they were diagnosed according to DSM-5. Since most of the data were diagnosed according to DSM-IV, this was taken as the basis when collecting the data.

## Conclusion

Female cases are more likely to have attempted suicide before coming to the service and have a history of attempted suicide, while male cases are more likely to have a history of self-mutilation. While the rate of women having a diagnosis in the Axis I field is higher than men, the rate of men having a diagnosis in the Axis II field is higher than women. It has been observed that most of the crimes

committed by women are against acquaintances. Based on these results, it is thought that more gender-sensitive treatment strategies are needed in forensic psychiatry. Repeating our findings on male and female cases who committed murder and were hospitalized for forensic psychiatric treatment in larger sample groups where they are evaluated cross-sectionally or prospectively will increase our knowledge in this field.

## Declarations

### Ethics Approval

Ethical approval was received from Bakırköy Research & Training Hospital Ethical Committee (04.04.2017;4).

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None.

### Conflicts of Interest

None.

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### Authors' Contributions

**AK:** Writing–review&editing, Writing–original draft, Methodology, Formal analysis, Data curation, Conceptualization. **EC:** Writing–review&editing, Writing–original draft, Validation, Conceptualization. **ÖDB:** Writing–review&editing, Validation, Supervision, Resources, Methodology, Data curation, Conceptualization.

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