The Bulletin of Legal Medicine, 2020; 25(2): 72-82

The Bulletin of Legal Medicine
Adli Tıp Bülteni

Research Article

Characteristics of the Sociodemographic, Clinical and Crime-Related Actions in Patients with Psychotic Symptoms Evaluated with the Claim of Committing a Crime-Related Action in a University Hospital between 2012 and 2018

Abdulkadir Yıldız*, Faruk Kılıç, Selin Çabuk, Gizem Çağla Aktaş Çallıoğlu

Abstract: **Objective:** The present study aims to investigate characteristics of the sociodemographic, clinical and crime-related actions in patients with psychotic symptoms and also to explore the effects of these characteristics on their criminal behavior and criminal responsibility.

Materials and Methods: In this study, 597 Forensic Medicine Board Reports issued for criminal responsibility assessment between 2012 and 2018 were investigated retrospectively. The reports and patient files of the 182 individuals diagnosed with psychotic symptoms were examined in detail.

Results: The findings obtained in this study showed that 85.7% of the cases were male and the mean age at the time of the crime was 40.87±11.78. Among 182 individuals, 78.6% of them did not have a profession and were unemployed. The mean duration of education was 7.98±3.19 years, 72% of them were single, divorced or separated, the mean disease duration of cases was 10.49±7.98 years, 22.5% of them had a comorbid psychiatric disorder and 14.6% of the comorbid diseases were substance use disorder. The persecutory delusion was the most common delusion with a rate of 45%. 44.5% had a crime-related action history, 77.5% of them had committed violent crime-related actions and most of the crime victims were individuals that patients were familiar with them. 67% of them did not have criminal responsibility, while 12.1% of them diminished criminal responsibility and 11.5% had criminal responsibility.

Conclusion: In the evaluation of criminal responsibility, sociodemographic, clinical and crime-related action characteristics should be considered in a holistic approach. Investigating the risk factors concerning crime-related activities will help us to understand the reasons for the patients to take such actions and will guide the studies about mental health and forensic psychiatry in cases with psychotic symptoms evaluated for criminal responsibility.

Keywords: Psychotic Symptoms, Crime, Violence, Criminal Responsibility

Öz: **Amaç:** Suç olarak nitelendirilen eylemlerde bulunan psikotik belirtili bireylerin sosyodemografik, klinik ve suç olarak nitelendirilen eylemlerle ilgili özelliklerini belirleyerek bu özelliklerinin suç davranışına ve ceza sorumluluklarına etkilerini incelemek amaçlanmıştır.

Gereç ve Yöntem: Süleyman Demirel Üniversitesi Tıp Fakültesi Adli Tıp Anabilim Dalına 2012 – 2018 yılları arasında ceza sorumluluğu değerlendirmesi için gönderilen olgulara düzenlenen 597 Adli Tıp Kurul Raporu retrospektif taranarak psikotik belirtileri bulunan ve bir tanı konulmuş olan 182 yetişkin hastanın raporu ve hasta dosyası Adli Tıp ve Psikiyatri uzmanlarınca ayrıntılı bir şekilde incelenmiştir.

Bulgular: Suç sırasındaki yaş ortalaması 40,87±11,78 olarak saptanan olguların %85,7'si erkekti. Olguların eğitim süreleri ortalamasının 7,98±3,19 yıl olduğu, %78,6'sının meslek sahibi olmadığı ve çalışmadığı, %72'sinin bekar, eşinden ayrılmış veya boşanmış olduğu saptanmıştır. Olguların hastalık süresinin ortalama 10,49±7,98 yıl olduğu, %22,5'inde komorbid bir psikiyatrik hastalık bulunduğu, komorbid hastalıklardan %14,6'sının madde kullanım bozukluğu olduğu belirlenmiştir. Olgularda %45 gibi bir oranla en çok kötülük görme sanrısı saptanmıştır. %44,5'inin daha önce de suç olarak nitelendirilen eylem öyküsünün bulunduğu, %77,5'inin suç olarak nitelendirilen şiddet içerikli eylemlerde bulunduğu, suç mağdurlarının belirgin bir şekilde olguların tanıdıkları bireylerden oluştuğu bulunmuştur. Raporlarda olgulara, %67'sinin "ceza sorumluluğunun bulunmadığı", %12,1'inin "ceza sorumluluğunun azalmış olduğu", %11,5'inin "ceza sorumluluğunun bulunduğu" şeklinde sonuçlar verildiği görülmüştür.

Sonuç: Ceza sorumluluğu değerlendirmelerinde sosyodemografik, klinik ve suç olarak nitelendirilen eylemlerle ilgili özelliklerin bütüncül bir yaklaşımla dikkate alınması gerekmektedir. Suç olarak nitelendirilen eylemler açısından risk faktörlerini belirlemek hastaların söz konusu eylemlerde bulunma nedenlerini anlamaya ve ceza sorumluluğu değerlendirmesi yapılan psikotik belirtili olgularda ruh sağlığı ve adli psikiyatri yönünden yapılacak çalışmalara yön verecektir.

Anahtar Kelimeler: Psikotik Belirtiler, Suç, Şiddet, Ceza Sorumluluğu

DOI: 10.17986/blm.1322

Abdulkadir Yıldız: Asst. Prof., Department of Forensic Medicine, Faculty of Medicine, Süleyman Demirel University, Isparta, Turkey.
e-mail: kadiryildiz05@yahoo.com
ORCID iD: https://orcid.org/0000-0002-4247-8462

Faruk Kılıç: Asst. Prof., Department of Mental Health and Diseases, Faculty of Medicine, Süleyman Demirel University, Turkey.
e-mail: drfarukk33@hotmail.com
ORCID iD: https://orcid.org/0000-0002-2259-4028

Selin Çabuk: Res. Asst., Department of Forensic Medicine, Faculty of Medicine, Süleyman Demirel University, Isparta, Turkey.
e-mail: selincabukk@gmail.com
ORCID iD: https://orcid.org/0000-0002-2096-3010

Gizem Çağla Aktaş Çallıoğlu: Res. Asst., Department of Mental Health and Diseases, Faculty of Medicine, Süleyman Demirel University, Isparta, Turkey
e-mail: agizemcagla@gmail.com
ORCID iD: https://orcid.org/0000-0002-4640-6044

Acknowledgement
* Corresponding Author

Conflict of Interest
The authors declare that they have no conflict of interests regarding content of this article.

Support Resources
The Authors report no financial support regarding content of this article.

Ethical Declaration
Ethical approval was obtained from Süleyman Demirel University Clinical Research Ethical Committee with date 10.05.2019 and number 69328, and Helsinki Declaration rules were followed to conduct this study.

This article is English version of the manuscript entitled as "Bir Üniversite Hastanesinde 2012-2018 Yılları Arasında Suç Olarak Nitelendirilen Eylemlerde Bulundukları İddiası ile Değerlendirilen Psikotik Belirtili Olgularda Sosyodemografik, Klinik ve Suç Olarak Nitelendirilen Eylemlerle İlgili Özellikler"

Received: 23.07.2019
Revised: 09.08.2019
Accepted: 17.09.2019

p-ISSN: 1300-865X
e-ISSN: 2149-4533
www.adlitipbulteni.com

1. Introduction

When examining the criminal responsibility subject, we should keep in mind that "insanity" is not a psychiatric, but a legal term (1, 2). A legal term can generally be compatible with the medical diagnosis, but it cannot be the total equivalent of medical diagnosis (2). Among the conditions diminishing or removing criminal responsibility by affecting free will or conscious behavior, the most common is "not guilty by reason of insanity" defence. Although insanity is a legal concept, the defence history of insanity was highly influenced by the medical and organic models of abnormal behaviors. Thus, it should be proven that the person was under the influence of a mental disorder when the criminal behavior was committed, for the "not guilty by reason of insanity" defence to be effective (1). Although "not guilty by reason of insanity" defence has a long history, the case of Daniel M'Naughtan, an insane person who attempted to assassinate British Prime Minister Sir Robert Peel in 1843, influenced the recent past (3). A short time after the case review, The House of Lords defined a series of official criteria for insanity known as M'Naughten Rules and stated as follows: "[….] *that to establish a defence on the ground of insanity, it must be clearly proven that, at the time of the committing of the act, the party accused was laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing; or if he did know it, that he did not know he was doing what was wrong*" (4). M'Naughten Rules and its variations state that the defendant must know (i) the quality of the act he committed and (ii) that the act was wrong to be legally responsible for a criminal act were started to be used in the legal systems of countries like United States, England, Canada, Australia, Portuguese and New Zealand (5-7). In these countries, forensic psychiatrists determine whether the individuals who have a mental disorder and are establishing a defence on the ground of insanity are under the influence of insanity when committing the crime-related acts and a two-way evaluation is performed to see whether the individual has criminal responsibility or not (6, 7). Different from this two-way evaluation, criminal responsibility is based on a graded scale in some countries, such as Holland, Belgium, Germany, Greece and China. For example, while the criminal responsibility of an accused party is based on five grades, including full responsibility, mildly diminished responsibility, diminished responsibility, severely diminished responsibility and completely diminished responsibility in Holland, it is based on three grades, including full responsibility, diminished responsibility and completely diminished responsibility in Greece and China (6, 8, 9). In Sweden, "not guilty by reason of insanity" concept is missing, while the "guilty but insane" concept is present. This means that anyone committing a crime is regarded to be guilty and the presence of insanity is evaluated only after the offender is found guilty and this may cause a compulsory treatment decision (2, 6, 10). All named countries other than Sweden have accepted that mental disorders may diminish criminal responsibility within the scope of insanity. While it is universally acknowledged that major mental disorder symptoms, including psychotic symptoms, limit criminal responsibility, personality disorders and psychopathy, seem to be more controversial. For individuals who have mental disorders and commit crime-related actions, these countries prefer to provide rehabilitation in hospitals as an alternative or supplementation to confinement (6).

There are two main constituents in criminal responsibility determination, according to the Turkish Criminal Code (TCC). The first constituent is whether the individual can perceive the legal meaning and results of their actions and the second is whether the individual has the ability to lead his/her behaviors or not. Concerning insanity, while the offender lacks criminal responsibility in the presence of insanity significantly diminishing any of these constituents according to TCC Article No 32/1, the criminal responsibility diminishes in case of insanity, which insignificantly diminishes the behavior leading ability which is the second constituent according to Article No 32/2.

All legal insanity standards cover the presence of a mental disorder causing a significant loss in the ability of an individual to understand the legal characteristics of his behavior and to be aware of its results (11). Individuals committing crime-related actions under the influence of psychotic symptoms meet the legal criteria for insanity based on the details of each case and the valid legal standards (12).

Although some studies show that there is a relative violence risk among the individuals with the mental disorder compared to the general population, many studies also show that the absolute violence risk among mental disorder patients as a group is still very low and only a small ratio of the violence in the society can be attributed to the individuals with a mental disorder (13). Although all psychiatric disorders do not have the same potential about violence behavior, it is considered that violence becomes common also in individuals with a psychiatric disorder in parallel to the increasing crime-related actions in the whole society (14).

Although psychosis terminology is no longer covered in the current classification system used for diagnostic disease codings, psychosis is regarded as a psychiatric

disease that may cause the diminishing or lack of criminal responsibility depending on its severity in older forensic psychiatry books (15). Psychosis is defined as a group of symptoms which include symptoms like disorganized speaking and common disruptions in behavior and the perception of reality in general and it is a group of symptoms which means delusions and/or hallucinations and causes disruptions in the mental capacity, emotional reaction and communication and relationship with others in its narrowest sense. Schizophrenia, schizophreniform disorder, delusional disorder, brief psychotic disorder, substance or medication-induced psychotic disorder and general medical condition-related psychotic disorders are among psychotic disorders (16). Although it was reported that mental disorders increase homicidal violence risk twice in males and six times in females and schizophrenia increases violent behavior six to ten times in males and eight to ten times in females, it is not clarified why some patients with mental disorders commit violent actions while others do not (17). The findings in some studies suggest that the patients with a mental disorder are not more dangerous than the general population, but among these patients, there is a group who presented behaviors, such as committing crime-related actions, alcohol-substance use or non-compliance to treatment in the past, too (18-20). Thus, sensible acting is important to prevent individuals with a mental disorder from the labelization of being associated with violent actions.

Although there is a relationship between the lack or diminishing of criminal responsibility and psychotic symptoms, this relationship is determined through sociodemographic, developmental and clinical factors (2).

In addition to harming other individuals or the society, crime-related actions of the individuals with psychotic symptoms have several effects, such as restricting their own freedom and increasing social labelisation against them. Determining risk factors for committing crime related actions in patients included in psychosis diagnosis group and taking necessary precautions may keep these individuals from such actions (21).

The present study aims to investigate the effects of sociodemographic, clinical and crime-related action characteristics of individuals in the psychosis diagnosis group who commit crime-related actions on committing crime-related actions and their criminal responsibilities.

2. Materials and Methods

Retrospectively scanning 597 Forensic Medicine Board Reports issued for the cases transferred to the Department of Forensic Medicine, Faculty of Medicine at the Isparta Süleyman Demirel University from Isparta and nearby cities for criminal responsibility assessment between 2012 and 2018, reports and files of adult patients who had psychotic symptoms and were diagnosed were examined in detail by a Forensic Medicine Expert and a Psychiatrist and the patients with missing information in their files were excluded from this study and 182 adult patients in all were included in this study. Sampling group included patients whose consultation was demanded from Department of Mental Health and Diseases following the examination of investigation and/or legal proceeding files and medical documents (if available) and the completion of medical examination in the Department of Forensic Medicine and who were diagnosed according to Diagnostic and Statistical Manual of Mental Disorders Revised Fourth Edition (DSM-IV-TR) by Psychiatrists. It was observed that a criminal responsibility decision was based on whether the individual was under the effects of the disease at the time of the incident considering a bill of indictment, accused, victim and witness statements, medical documents taken before and after the date of the crime, anamnesis of the patient and relatives if necessary, diagnosis, how the crime took place and statements of the patient and relatives about the crime available in the Forensic Medicine Board Reports. Examining sociodemographic characteristics, clinical symptoms, characteristics of crime-related actions and report results of the cases, their connections with criminal behavior and effects on their criminal responsibility were investigated in this study. “SPSS for Windows 18.0” package program was used for data analysis. Descriptive characteristics and constant variables were given as mean ± standard deviation and discrete variables were given as number and percentage.

Ethical Declaration

Ethical approval was obtained from Süleyman Demirel University Clinical Research Ethical Committee with date 10.05.2019 and number 69328, and Helsinki Declaration rules were followed to conduct this study.

3. Results

3.1. Sociodemographic Characteristics

Data on sociodemographic characteristics are provided in Table 1. In this study, it was detected that a diagnosis was made due to psychotic symptoms in 30.4% of 597 individuals (n=182) who were investigated and/or prosecuted for committing crime between 2012 and 2018 and were sent to the Department of Forensic Medicine for criminal responsibility evaluation with insanity suspicion/allegation.

Table 1. Sociodemographic Characteristics of the Cases

		Mean ± SD	n (=182)	%
Age	Age at the time of medical examination	44.65±11.7		
	Age when the crime was committed	40.87±11.78		
Gender	Male		156	85.7
	Female		26	14.3
Marital Status	Married - living together		51	28
	Married - separated		37	20.3
	Single		59	32.4
	Divorced		35	19.2
Education	None		16	8.8
	Elementary school graduate		112	61.5
	High school graduate		45	24.7
	University graduate		9	4.9
	Education duration	7.98±3.19		
Employment Status	Yes		39	21.4
	No		143	78.6
Lives with	Spouse		9	4.9
	Spouse and child (children)		42	23.1
	Child (children)		13	7.1
	Mother and/or father		64	35.2
	Alone		54	29.7

In this study, 85.7% of the cases was male, and 14.3% of the cases was female and the age distribution was between 22 and 75 at the time of medical examination with a mean age of 44.65±11.7 years. The mean age at the time of the crime was 40.87±11.78, and criminal responsibility evaluation examinations were performed 3.90±2.62 years after the crime-related actions on average.

When the educational conditions of the patients were examined, it was observed that 8.8% of them did not have any education at all and 61.5% of them were elementary school, 24.7% of them were high school and 4.9% of them were university graduates and mean education duration was 7.98±3.19 years.

When the professional statuses of the cases were examined, it was detected that a high ratio of 78.6% of the cases did not have a profession and was unemployed.

Concerning marital status, 48.3% of them were married, 32.4% of them were single and 19.2% of them were divorced. 20.3% of married individuals were living apart from their spouses. In this study, 4.9% of the cases were living only with their spouses, 23.1% with spouse and child(ren), 7.1% only with child(ren), 35.2% with mother and/or father and 29.7% were living alone.

3.2. Clinical Characteristics

Clinical characteristics of the cases are given in Table 2 and mean disease starting age was 33.92±11.07 and disease duration was 10.49±7.98 years based on disease characteristics. Diagnosis distribution of the cases was schizophrenia in 35.2%, not otherwise specified (NOS) psychotic disorder in 54.4%, schizoaffective disorder in 8.2%, brief psychotic disorder in 1.1% and delusional disorder in 1.1%. 53.8% of the cases were under regular medical treatment and follow-up and 70.9% had a history of minimum one hospitalization in the psychiatry services and mean hospitalization count of the patients who had inpatient treatment changed between 1 and 20 and the mean hospitalization count was 2.51±2.36. 19.2% of the cases were using depot antipsychotic and 22.5% had a comorbid psychiatric disease.

Based on delusion and hallucination content of the cases at the time of crime-related actions, the highest ratio was for persecutory delusion with 45%, 29.7% of them only had a persecutory delusion, 10.4% of them had both persecutory delusion and auditory hallucination and 4.9% of them had both persecutory delusion and visual hallucination. While 4.9% of the cases had only auditory, 1.6%

of the cases had only visual and 2.2% of them had both auditory and visual hallucinations, 2.7% of them had jealous, 3.8% of them had grandiose and 1.6% of them had bizarre delusions and symptoms could not be detected or other delusions were detected in 37.4% when committing crime-related actions.

The distribution of comorbid diseases was detected as depression in 26.8%, personality disorder in 19.5%, anxiety disorders in 14.6%, substance use disorders in 14.6%, mental retardation in 14.6% and obsessive-compulsive disorder in 9.8% of the cases (Table 3).

3.3. Characteristics of Crime-Related Actions

Data for crime-related actions of the cases are provided in Table 4. A total of 77.5% of the cases were sent with violent crime committing claims, including 45.6% injury, 22% insult and threat, 3.8% damage to property, 4.9% with sexual assaults and 1.1% with homicide while 10.4% were sent with the claim of theft, 2.7% with calumny and 9.3% with the claim of other crimes, such as traffic offenses, forgery, fraud, drug possession and trade, 44.5% had a history of crime-related actions, and 11% had alcohol or substance use at the time of the action. When the relationship between the cases and the victims of the claimed crime-related actions were evaluated, 25.5% of them was family members, 4.4% of them was relatives, 1.5% of them was colleagues, 39.4% of them were acquaintances, such as neighbors or fellow villagers and 29.2% of them were random people.

Based on the report results of the committee of experts, it was detected that 67% of the cases diagnosed with psychotic symptoms did not have criminal responsibility within the scope of TCC Article No 32/1 and 12.1% had diminished criminal responsibility and 11.5% had criminal responsibility within the scope of TCC Article No 32/2 and it was also detected that an opinion was issued in 9.3% claiming that the accused individuals must be kept under surveillance within the scope of Turkish Criminal Procedure Code (CPC) Article No 74 to determine whether they had criminal responsibility.

Table 2. Clinical Characteristics of the Cases

		Mean ± SD	n (=182)	%
Disease duration		10.49±7.98		
Disease starting age		33.92±11.07		
Diagnosis	Schizophrenia		64	35.2
	NOS psychotic disorder		99	54.4
	Schizoaffective disorder		15	8.2
	Brief psychotic disorder		2	1.1
	Delusional disorder		2	1.1
Regular follow-up and treatment	Present		98	53.8
	None		84	46.2
Psychiatry service hospitalization	Present		129	70.9
	None		53	29.1
Depot antipsychotic use	Present		35	19.2
	None		147	80.8
Comorbid psychiatric disease			41	22.5
Symptom at the time of CRA	Persecutory delusion		54	29.7
	Persecutory delusion + auditory hallucination		19	10.4
	Persecutory delusion +visual hallucination		9	4.9
	Jealous delusion		5	2.7
	Grandiose delusion		7	3.8
	Bizarre delusion		3	1.6
	Auditory hallucination		9	4.9
	Visual hallucination		3	1.6
	Auditory + visual hallucination		4	2.2
	Unidentified or Other		66	37.9

CRA= Crime-Related Action, NOS= Not Otherwise Specified

Table 3. Distribution of Comorbid Psychiatric Diseases

	n (=41)	%
Depressive disorder	11	26.8
Personality disorders	8	19.5
Mental retardation	6	14.6
Anxiety disorders	6	14.6
Substance use disorders	6	14.6
Obsessive-compulsive disorder	4	9.8

Table 4. Characteristics of Crime-Related Actions of the Cases

		n (=182)	%
Report results	Full criminal responsibility	21	11.5
	No criminal responsibility	122	67
	Diminished criminal responsibility	22	12.1
	Observance	17	9.3
CRA characteristic	Injuring	83	45.6
	Insult, threatening	40	22
	Theft	19	10.5
	Sexual assault	9	4.9
	Damage to property	7	3.8
	Killing	2	1.1
	Calumny	5	2.7
	Other	17	9.3
Alcohol/ substance use during CRA		20	11
CRA story		81	44.5
Violent CRA		141	77.5
Characteristics of CRA victims	Family	35	25.5
	Relative	6	4.4
	Colleague	2	1.5
	Acquaintance	54	39.4
	Random person	40	29.2

CRA=Crime Related Action

Based on the distribution of violent crime-related actions, a total of 28.4% included verbal violence like insult and threat, a total of 65.2% arose from physical violence, including 2.1% firearm injury, 19.1% injury with sharp, incisive or penetrating tools, 37.6% injury with bare hand or foot, 1.4% homicide and 5% damage to property and 6.4% included sexual violence (Table 5).

Table 5. Distribution of Acts Defined as Violent Crimes

		n (=141)	%
Verbal violence		40	28.4
Physical violence		92	65.2
	Firearm injury	3	2.1
	Injuring with sharp, incisive or perforating tool	27	19.1
	Injury with bare hand	53	37.6
	Killing	2	1.4
	Damage to property	7	5
Sexual violence		9	6.4

4. Discussion

4.1. Sociodemographic Characteristics

Based on the gender distribution of the cases, males had a ratio of 85.7%, which was a higher ratio than females. Almost all studies presented that males committed more crime-related actions than females among individuals with psychotic symptoms (7, 10, 22-24). Considering that the male gender, in general, is more related to violent and illegal behaviors in the whole population, given that males also have an overwhelming ratio among the cases with psychotic symptoms committing crime-related actions can be considered as an expected result. Based on the Turkish Statistical Institute data, 95.6% of the total number of convicts and prisoners in 2017 were male (25).

With a mean age of 44.65 years, the age distribution of the cases was between 22 and 75 at the time of medical examination. The mean age at the time of the crime was 40.87 and the criminal responsibility evaluation examinations were performed 3.90 years after the crime-related actions on average. The mean ages detected in the studies changed between 38.10 and 43.96 (7, 10, 21, 23, 24, 26). In our study, the average age at disease onset was detected as 33.92±11.07 and similar to other studies, it was evaluated that the high ratios of committing crime-related actions around the age of 40 could be related to factors, such as the weak social support provided for individuals with a mental disorder in long disease duration and lack of regular and efficient treatment.

When the educational backgrounds of the cases were examined, it was observed that 8.8% of them did not have any education at all and 61.5% of them were elementary school, 24.7% of them were high school, and 4.9% of them were university graduates and mean education duration

was 7.98±3.19 years. Based on the studies in our country, mean education duration was detected as 6.06±3.50 years by Oncu et al. (24), as 7.99±3.81 years by Oncu et al. (21) and as 6.18±3.42 years by Inan et al. (26). In a study conducted in Italy, on cases whose forensic psychiatric evaluations were completed and more than half of which were patients with a schizophrenia spectrum disorder, it was detected that 68.9% did not have any education at all or were secondary school graduates in line with the ratios detected in our study (23).

When the professional statuses of the cases were examined, a high ratio of (78.6%) cases did not have a profession, was unemployed and had a low socioeconomic level. In studies comparing patients with psychotic symptoms who committed or did not commit crime-related actions, unemployment ratios of the individuals who committed crime-related actions were observed to be significantly higher compared to cases who did not commit such actions (21, 27). Again, the studies on schizophrenia patients who committed crime-related actions presented that high unemployment ratio (28) and low socioeconomic level (7, 21, 29, 30) were among the common characteristics of these cases. Low education levels, unemployment and lack of a profession should primarily be considered as an expected result of their disease for the individuals in the psychosis diagnosis group. It was considered that the provision of employment opportunities in suitable areas for individuals with psychotic symptoms who have the opportunity to work based on the characteristic of their diseases could be helpful for their rehabilitation phases.

Based on marital status, 28% of the cases were married and were living with their spouses while the ratio was 32.4% for single individuals and 20.3% for married cases living apart from their spouses and 19.2% of the cases were divorced. Similar to our study, many studies in the literature show that unmarried patients commit more crime-related actions (7, 8, 21, 23, 24, 26, 28).

In this study, 4.9% of the cases were living with the spouse, 23.1% with spouse and child(ren), 7.1% with child(ren), 35.2% with mother and/or father and 29.7% were living alone. In a study on cases with psychotic symptoms who committed crime-related actions in Australia, the ratio of homeless individuals was reported as 18.03% (27) and in a study carried out on 1476 patients mostly including schizophrenia, schizotypal and delusional disorder patients whose forensic psychiatric evaluations were completed, the ratio of homeless individuals was 41% and the ratio of the patients living alone was 72% (10). In a study conducted in our country, the ratio of homeless individuals among the cases with psychotic symptoms who committed crime-related actions was detected as 2.9%, while the ratio was 15.7% for the patients living alone (21). As also detected in our study, it was considered that the significantly lower ratio of the cases with psychotic symptoms who are homeless or are living alone in our country compared to Europe is based on social and sociocultural differences and the mothers, fathers and children provide care to patients with psychotic symptoms who need care in our country.

4.2. Clinical Characteristics

In our study, it was detected that a diagnosis was made due to psychotic symptoms after the medical examinations performed by Forensic Medicine Experts and Psychiatrists in 30.4% of 597 individuals (n=182) who were investigated and/or prosecuted for committing a crime and were sent to the Department of Forensic Medicine for criminal responsibility evaluation with insanity suspicion/allegation between 2012 and 2018. In a study conducted in a forensic psychiatry unit in Portugal on 274 patients without criminal responsibility due to mental disorders, 50.5% of the patients were diagnosed with schizophrenia (7). In a study carried out on 61 patients without criminal responsibility due to mental disorders in Italy, it was reported that 54.1% of the patients were diagnosed with schizophrenia, delusional disorder, schizoaffective disorder, substance use related psychotic disorder, schizophrenia spectrum disorder and other psychotic disorders (23) and in a study conducted in Sweden on 1476 patients for whom judicial authorities decided upon compulsory psychiatric treatment and who were evaluated in forensic psychiatry unit, 59% were diagnosed with schizophrenia, schizotypal and delusional disorder (10). Since the sampling groups in the mentioned studies included patients with a mental disorder without criminal responsibility, it was evaluated that the higher rates of diagnosis with psychotic symptoms among all cases compared to our study constituted an expectable result.

In this study, 35.2% of the cases were diagnosed with schizophrenia, 54.4% with NOS psychotic disorder, 8.2% with schizoaffective disorder, 1.1% with a brief psychotic disorder and 1.1% with delusional disorder. Mean disease duration was found as 10.49±7.98. In a study, including schizophrenia patients presenting homicidal behavior, it was reported that mean disease duration was 12.65 ± 8.94 years and long disease duration was related to homicidal behavior tendency (28). In a study comparing patients with psychotic symptoms who committed or did not commit crime-related actions, the mean disease duration of the individuals who committed crime-related actions was found 13.14±8.55 years, but a statistical difference was

not found among the two groups (21). In a study comparing patients with psychotic symptoms who presented homicidal behavior and the patients with psychotic symptoms who did not commit crime-related actions between 1988 and 2001, chronicity of the disease was among the significant factors in presenting homicidal behavior (31). In another study, it was reported that 40.3% of the patients who were diagnosed with schizophrenia and related disorders, did not have criminal responsibility and committed crime-related violent actions committed crime-related actions after a disease duration of 10 years and 20.8% committed them after a disease duration of 5-10 years (8). The disease duration of individuals who committed crime-related actions and were diagnosed with psychotic symptoms in our study was found in line with the literature and when long disease duration combined with factors, such as the lack of social support, suitable treatment and follow-up, they were considered to be effective in their committing of crime-related actions, mainly violent actions.

In our study, 46.2% of the cases did not have regular psychiatric treatment and follow-up. This finding of our study is consistent with the EUFEST study (32), stating 42% of the treatment noncompliance. Depot antipsychotic use was detected as 19.2% in our cases. It is inevitable that the active arrangement of the regular follow-ups and treatments, including depot antipsychotic treatments, considering the crime-related risks in the individuals in the psychosis diagnosis group, would be preventive for crime-related actions.

In this study, it was detected that 22.5% of the cases had a comorbid psychiatric disorder and 19.5% of these were personality disorders and 14.6% were substance use disorders. Based on the studies abroad, it was detected that comorbid diseases were at higher rates compared to the studies in our country and high substance use disorder rates were especially € interesting. Substance use disorder rates of patients in psychosis diagnosis group committing crime-related actions were reported as 44.3% by White et al. (27) and as 32% by Heinrich and Sam (29). Comorbid disease ratios in our country were detected as 25% by Oncu et al. (24) and as 13.1% by Inan et al. (26). Alcohol-substance use ratios when committing the crime were determined as 14.2% by Oncu et al. and as 10% by Ural et al. (33) and Belli et al. determined the ratios as 5.2% for alcohol and as 2.2% for drugs (34). Lower comorbid disease ratios in our study and other studies in our country compared to Europe may be due to lower alcohol-substance use in our country compared to western countries. Detection of the facts that 11% of the cases in our study (n=20) were under the effects of alcohol or substance while committing crime-related actions and that 60% of these patients committed violent acts was found in line with studies showing that alcohol-substance use was a risk factor for crime-related violence acts (8, 23, 28).

Many studies showed that delusions are related to violent actions (8, 33, 35). In the studies, it was stated that emotions, such as skepticism, hostility, nervousness and anger occurring due to persecutory delusions, caused the patients to present violent behavior (35-37). High violence crime and persecutory delusion rates in patients determined to be in the psychosis diagnosis group in our study support that the delusions and hallucinations are effective in violent crime-related actions.

4.3. Characteristics of the Crime-Related Actions

Given that 77.5% of the individuals with psychotic disorder commit crime-related violent actions in our study is in line with literature information stating that violent behavior risk is high for the individuals in the psychosis diagnosis group (17, 23). Concerning the quality of violence, it was observed that 28.4% of the cases in our study committed verbal, 65.2% committed physical and 6.4% committed sexual violence and among cases applying physical violence, 37.6% did not use any tools and 5% damaged property. In terms of the essence of violence, committing physical violence without substantial verbal violence and crime weapon were found in line with the data acquired from other studies (33, 38) and this condition made us consider that the individuals in the psychosis diagnosis group were facing impulse control issues as an effect of their diseases and were committing crime-related actions without planning.

Because 44.5% of the cases also committed crime-related actions before was found in line with the literature information stating that history of crime-related actions was an important data to determine the recurrence risk of such actions (8, 24, 39, 40).

It was detected that the victims of the crime-related actions significantly included family members, relatives and acquaintances of the cases. Our results have a significant similarity with other studies on this subject (8, 24, 28, 33). It was considered that this condition could arise from individuals in the psychosis diagnosis group needing the care of their families because of their diseases, their social relations mostly being restricted with their families and relatives and their delusions being towards these individuals as a natural result.

Based on the results of the reports issued for cases by a committee of experts, 67% of the cases did not have a

criminal responsibility within the scope of TCC Article No 32/1 and 12.1% diminished responsibility within the scope of TCC Article No 32/2. In line with our study, a study conducted in China showed that 74% of the 1108 schizophrenia-diagnosed cases who committed the crime did not have a crime responsibility and 21% of them diminished criminal responsibility (9) and in many similar studies, most of the patients with no or diminished crime responsibility were in psychosis diagnosis group (7, 10, 39, 41). Considering that psychosis in general covers disorganized behavior and deteriorations in reality perception, mental capacity, emotional reaction, reality perception ability and the communication and relationship with others (16), lacking or diminished criminal responsibility in individuals with psychotic symptoms can be an expected result of the disease. However, the main issue in determining criminal responsibility is to examine the mental condition, free will and intentional acting ability of the offender when the crime was committed (1). The examination to be performed is based on forensic psychiatric inspection and medical examination. The important thing here is not whether the individual had any psychiatric presentation before or after the incident but the presence or lack of criminal responsibility (consciousness and freedom of action) when the crime was committed (42). Within this concept, based on the nature of the crime, it was observed that an opinion stating that 11.5% of the cases evaluated not to be under the influence of disease while committing the crime and that 9.3% of the cases should be kept under supervision within the scope of CPC No 74 to be able to make this distinction was issued. For the individuals in the psychosis diagnosis group without any causality relation between the disease symptoms and the crime and for whom a view stating that they had full criminal responsibility was issued, giving liberty-restricting penalties should be discussed - since they may exacerbate the symptoms and increase the destruction- and a solution should be found. In addition to hindering the treatments, it is obvious that giving liberty-restricting penalties to individuals with psychotic symptoms would not serve the corrective and deterrent aims of punishment. Although it was stated in Items 32 and 57 of Turkish Criminal Code that rehabilitation will be applied in hospitals with high security and safety precautions to individuals with diminished or no criminal responsibility due to insanity, no regulation covering such rehabilitation was applied for individuals who have both insanity and full criminal responsibility For individuals in the psychosis diagnosis group but evaluated to have full criminal responsibility since there was no causality connection between the committed crime and disease, it was considered that completing the penalty duration of their crimes under treatment and follow-up in hospitals with high security instead of prison would be a way of solution. Also, the doctors evaluating criminal responsibility should present their medical views on the health precaution conditions under which the execution should be performed due to the disease/diseases of the individual and on the fact that the individual should not be kept in prison in their reports even if this is not covered in the laws and not asked by concerned authorities.

We can name the inaccessibility of data on the treatments received by the cases, their accordance with the treatment and the effects of provided treatments on criminal behavior and the lack of clinical diagnosis scales among the limitations of our study since this is a retrospective study.

Determination of criminal responsibility is quite a complicated subject that requires a careful examination. It is interesting that while education, socioeconomic levels, employment ratios and regular follow-up and treatment ratios were low for the individuals with psychotic symptoms who committed crime-related actions in our study, disease duration was long, especially persecutory delusion among all delusions were observed at a high ratio, and previous crime-related actions had a high ratio. It is also interesting that crime-related violence actions are also committed against family members and acquaintances rather than random people. Although the effects of psychotic symptoms on criminal responsibility and their relationship with criminal behavior are known by the experts of the subject, the characteristics of sociodemographic, clinical and crime-related actions should be considered in criminal responsibility evaluations with a holistic approach. Our descriptive study would be helpful for psychiatrists and forensic medicine experts concerning crime risk to analyze the behavioral variables defined as a crime in individuals with psychotic symptoms, mainly violence crimes.

References

1. Berman ME, Coccaro EF. Neurobiologic correlates of violence: relevance to criminal responsibility. Behav Sci Law 1998; 16(3), 303-318. https://doi.org/10.1002/(SICI)1099-0798(199822)16:3%3C303::AID-BSL309%3E3.0.CO;2-C
2. Tsimploulis G, Niveau G, Eytan A, Giannakopoulos P, Sentissi O. Schizophrenia and Criminal Responsibility: A Systematic Review. J Nerv Ment Dis 2018; 206(5), 370-377. https://doi.org/10.1097/NMD.0000000000000805
3. Kelly BD. Criminal insanity in 19th-century Ireland, Europe and the United States: Cases, contexts and controversies. Int J Law Psychiatry 2009; 32, 362–68. https://doi.org/10.1016/j.ijlp.2009.09.005

4. United Kingdom House of Lords Decisions (1843) Daniel M'Naughten's case. http://www.bailii.org/uk/cases/UKHL/1843/J16.html.
5. Radovic S, Meynen G, Bennet T. Introducing a standard of legal insanity: The case of Sweden compared to The Netherlands. Int J Law Psychiatry. 2015;40: 43–49. https://doi.org/10.1016/j.ijlp.2015.04.009
6. Grossi LM, Green D An international perspective on criminal responsibility and mental illness. Practice Innovations. 2017; 2:2–12. https://doi.org/10.1037/pri0000037
7. Almeida J, Graça O, Vieira F, Almeida N, Santos JC. Characteristics of offenders deemed not guilty by reason of insanity in Portugal. Medicine, Science and the Law 2010;50(3):136-139. https://doi.org/10.1258/msl.2010.100003
8. Ntounas P, Katsouli A, Efstathiou V, Pappas D, Chatzimanolis P, Touloumis C ve ark. Comparative study of aggression–Dangerousness on patients with paranoid schizophrenia: Focus on demographic data, PANSS, drug use and aggressiveness. Int J Law Psychiatry 2018;60:1-11. https://doi.org/10.1016/j.ijlp.2018.06.001
9. Hu J, Yang M, Huang X, Liu X, Coid J. Forensic psychiatry assessments in Sichuan province, People's Republic of China, 1997–2006. The Journal of Forensic Psychiatry and Psychology 2010;21(4):604-619. https://doi.org/10.1080/14789941003642504
10. Degl'Innocenti A, Hassing LB, Lindqvist AS, Andersson H, Eriksson L, Hanson FH ve ark. First report from the Swedish national forensic psychiatric register (SNFPR). Int J Law Psychiatry 2014;37(3):231-237. https://doi.org/10.1016/j.ijlp.2013.11.013
11. Smith SR. Neuroscience, ethics and legal responsibility: The problemof the insanity defense: Commentary on "the ethics of neuroscience and the neuroscience of ethics: A phenomenological-existential approach". Sci Eng Ethics. 2012;18:475–81. https://doi.org/10.1007/s11948-012-9390-7
12. Dietz PE. Mentally disordered offenders. Patterns in the relationship between mental disorder and crime. Psychiatr Clin North Am. 1992;15:539–551. https://doi.org/10.1016/S0193-953X(18)30222-3
13. Mulvey EP. Assessing the Evidence of a Link Between Mental Illness and Violence. Psychiatric Services 1994, 45(7): 663-68. https://doi.org/10.1176/ps.45.7.663
14. Tırtıl L, Biçer Ü, Oral G. Adli Psikiyatri. Dokgöz H (Ed) Adli Tıp ve Adli Bilimler, Akademisyen Kitabevi, Ankara, 2019: 541-81
15. Dinçmen K. Adli Psikiyatri, Birlik Yayınları, İstanbul 1984.
16. Stahl SM. Stahl'ın Temel Psikofarmakolojisi. Alkın T (Çev. Ed.) İstanbul Tıp Kitapevi, 2015, s.79.
17. Richard-Devantoy S, Olie J-P, Gourevitch R. Risk of homicide and major mental disorders: a critical review. L'Encephale 2009;35(6):521-530. https://doi.org/10.1016/j.encep.2008.10.009
18. Yee NYL, Large MM, Kemp RI, Nielssen OB. Severe nonlethal violence during psychotic illness. Aust N Z J Psychiatry 2011; 45:466-72. https://doi.org/10.3109/00048674.2011.541417
19. Taylor PJ, Gunn J. Homicides by people with mental illness: myth and reality. Br J Psychiatry 1999; 174:9-14. https://doi.org/10.1192/bjp.174.1.9
20. Shaw J. Mental disorder and clinical care in people convicted of homicide: National clinical survey. Br J Psychiatry 1999; 318. https://doi.org/10.1136/bmj.318.7193.1240
21. Öncü F, Sercan M, Ger C, Bilici R, Ural C, Uygur N. Sosyoekonomik etmenlerin ve sosyodemografik özelliklerin psikotik olguların suç işlemesinde etkisi. Türk Psikiyatri Derg 2007; 18, 4-12.
22. Kalenderoğlu A, Yumru M, Selek S, Savaş HA. Gaziantep Üniversitesi tıp fakültesi adli psikiyatri birimine gönderilen olgularin incelenmesi. Nöropsikiyatri Arşivi 2007; 44, 86-90
23. Lombardi V, Veltri A, Montanelli C, Mundo F, Cesari GRD, Maccari M ve ark. Sociodemographic, clinical and criminological characteristics of a sample of Italian Volterra REMS patients. Int J Law Psychiatry 2019;62:50-55. https://doi.org/10.1016/j.ijlp.2018.09.009
24. Öncü F, Soysal H, Uygur N, Özdemir F, Türkcan S, Yeşilbursa D ve ark. Zorunlu klinik tedavi sonrası yineleyici suç işleyen adli psikiyatri olgularının tanı ve suç niteliği açısından değerlendirilmesi. Düşünen Adam, Psikiyatri ve Nörolojik Bilimler Dergisi 2002;15(3):132-148.
25. Türkiye İstatistik Kurumu. URL: http://tuik.gov.tr/PreTablo.do?alt_id=1070 Access Date: 20.05.2019.
26. İnan S, Yıldızhan E, Öncü F. İnsana Yönelik Ciddi Suç İşleyen Adli Psikiyatri Olgularının Hastalık Öyküleri, Sosyodemografik ve Suç Özellikleri. Turk Psikiyatri Derg 2018;29(4). DOI : https://doi.org/10.5080/u22822
27. White P, Chant D, Whiteford H. A comparison of Australian men with psychotic disorders remanded for criminal offences and a community group of psychotic men who have not offended. Australian and New Zealand journal of psychiatry 2006;40(3):260-65.
28. Belli H, Ozcetin A, Ertem U, Tuyluoglu E, Namli M, Bayik Y ve ark. Perpetrators of homicide with schizophrenia: sociodemographic characteristics and clinical factors in the eastern region of Turkey. Compr Psychiatry 2010;51(2):135-141. https://doi.org/10.1016/j.comppsych.2009.03.006
29. Heinrichs RW, Sam EP. Schizophrenia and Crime: How Predictable Are Charges, Convictions and Violence? International Journal of Mental Health and Addiction 2012;10(1):122-131. https://doi.org/10.1007/s11469-010-9308-z
30. Eriksson Å, Romelsjö A, Stenbacka M, Tengström A. Early risk factors for criminal offending in schizophrenia: a 35-year longitudinal cohort study. Soc Psychiatry Psychiatr Epidemiol 2011;46(9):925-932. https://doi.org/10.1007/s00127-010-0262-7
31. Fazel S, Buxrud P, Ruchkin V, Grann M. Homicide in discharged patients with schizophrenia and other psychoses: a national case-control study. Schizophr Res 2010;123(2-3):263-269. https://doi.org/10.1016/j.schres.2010.08.019
32. Kahn RS, Fleischhacker WW, Boter H, Davidson M, Vergouwe Y, Keet IP ve ark. Effectiveness of antipsychotic drugs in first-episode schizophrenia and schizophreniform disorder: an open randomised clinical trial. The

Lancet 2008;371(9618):1085-1097. https://doi.org/10.1016/S0140-6736(08)60486-9
33. Ural C, Öncü F, Belli H, Soysal H. Adli psikiyatrik süreç içindeki şizofreni hastalarının şiddet davranışı değişkenleri: bir olgu kontrol çalışması. Turk Psikiyatri Derg 2013;24:17-24. https://doi.org/10.5080/u6913
34. Belli H, Özçetin A, Ertem Ü, Alpay E, Bahçebaşı T, Kıran Ü ve ark. Şizofreni hastalarında bazı sosyodemografik özellikler ve tedavi ile ilişkili etkenler. Anadolu Psikiyatri Dergisi 2007;8(2):102-112.
35. Krakowski M, Czobor P, Chou JC-Y. Course of violence in patients with schizophrenia: relationship to clinical symptoms. Schizoph Bull 1999;25(3):505-517. https://doi.org/10.1093/oxfordjournals.schbul.a033397
36. Arango C, Barba AC, González-Salvador T, Ordóñez AC. Violence in inpatients with schizophrenia: a prospective study. Schizoph Bull 1999;25(3):493-503. https://doi.org/10.1093/oxfordjournals.schbul.a033396
37. Appelbaum PS, Robbins PC, Monahan J. Violence and delusions: Data from the MacArthur violence risk assessment study. Am J Psychiatry 2000;157(4):566-572.
38. Nordström A, Kullgren G. Victim relations and victim gender in violent crimes committed by offenders with schizophrenia. Soc Psychiatry Psychiatr Epidemiol 2003;38(6):326-330. DOI: https://doi.org/ 10.1007/s00127-003-0640-5
39. Türkcan S, İncesu C, Canbek Ö, Can Y, Sercan M, Uygur N. 1831 adli olgunun tanı dağılımı ve tanı-suç bağlantısının değerlendirilmesi. Düşünen Adam, Psikiyatri ve Nörolojik Bilimler Dergisi 2000;13(3):132-137.
40. Valdiserri EV, Carroll KR, Hartl AJ. A study of offenses committed by psychotic inmates in a county jail. Psychiatric Services 1986;37(2):163-166. https://doi.org/10.1176/ps.37.2.163
41. Ferranti J, McDermott BE, Scott CL. Characteristics of female homicide offenders found not guilty by reason of insanity. J Am Acad Psychiatry Law 2013;41(4):516-522.
42. Biçer Ü, Tırtıl L, Kurtaş Ö, Aker T. Adli Psikiyatri. Koç S, Can M (Ed) Birinci Basamakta Adli Tıp, 2. Baskı, İstanbul Golden Print 2012;242-252