

RESEARCH ARTICLE

Offending and clinical characteristics of adults with autism spectrum disorder: Experience at forensic psychiatry center in Türkiye between 2012 and 2022

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Abstract

The forensic and clinical need for better understanding of criminal offending in adults with ASD is increasingly recognized. To date, few studies have examined the differences and similarities between criminal offenders with and without ASD with respect to demographics, offending profiles, and clinical characteristics. This study, conducted in Turkey, is the first to conduct such as comparison using a national database of forensic files. Computerized search of the forensic records of 11,853 adults assessed between January 1, 2012, and January 1, 2022, for criminal responsibility by the Turkish Council of Forensic Medicine found 74 adults diagnosed with ASD; they ranged in age from 18 to 40. [Correction added after first online publication on 04 December 2024. The value 11,583 has been revised to 11,853.] The demographic, clinical, and offending characteristics of these adults were compared to 100 adults without ASD selected from the remaining 11,779 records based on age (18–40 years) and year of assessment (10 from each year). The ASD group was younger, more likely to be unemployed and not living on their own. The ASD group was more likely to have comorbid intellectual disability, ADHD, and OCD, while the non-ASD group was more likely to have co-morbid personality disorders. The ASD group was more likely to commit unplanned simple (non-penetrative) sexual and violent offenses against strangers; the non-ASD group was more likely to commit planned, qualified (penetrative) crimes against known persons. Impulsivity and manipulability were more often contributory in persons with ASD; revenge was more often contributory in persons without ASD. Adults with ASD were more likely to commit crimes on social media. In conclusion, this study found that adult offenders with and without ASD differed in demographics, psychiatric co-morbidities, and types of offending behaviors. These differences may have implications for the prevention of criminal offending in persons with ASD and addressing their needs once they are in the criminal justice system.

Lay Summary

More needs to be known about how criminal offending in adults with ASD is the same or different from adults without ASD. This study, conducted in Turkey, used a national forensic 10 year database to address this question. Compared to adults without ASD, adults with ASD were more likely to: commit impulsive rather than planned offenses, commit non-penetrating than penetrating sexual and violent offenses, offend against strangers than familiars, and to offend on social media. This information may inform efforts to prevent criminal offending in adults with ASD and to treat once they are in the criminal justice system.

KEYWORDS

adults, autism, criminal responsibility, forensic psychiatry, offense, Turkey, violence

INTRODUCTION

ASD is a complex neurodevelopmental disorder characterized by difficulties in social interaction and communication and repetitive behaviors (Association AP, 2013). It is a heterogeneous disorder that presents a wide range of symptoms in different individuals and is associated with various comorbidities such as mood disorders, anxiety disorders and attention deficit hyperactivity disorder (ADHD) (Association AP, 2013; Burns et al., 2023; Rim et al., 2023). The accepted global prevalence estimate for ASD is now 1% (Organization WH, 2023; Zeidan et al., 2022). Reasons for an apparent increase in the prevalence of ASD over time are multifactorial and still controversial (Fombonne, 2018). Against a background of speculation in the news media (e.g., Terence McCoy, Washington Post, May 21, 2014) (McCoy, 2014) that the core features of ASD might render persons with the disorder more vulnerable to committing crimes and perhaps certain types of crimes, King and Murpy in 2014 published a widely cited systematic review of research on people with ASD in the criminal justice system (CJS) (King & Murphy, 2014). Noting that the literature was of poor quality overall, they concluded that people with ASD did not seem to have excess representation in the CJS and did not seem to have a distinctive profile of offending behaviors. Among the recommendations they made for future research was a call for studies comparing offenders with ASD to offenders without ASD from the same forensic population. In 2023, Collins et al. published a systematic review of the literature on autistic people and the CJS to determine whether the recommendations of King and Murphy had been followed (Collins et al., 2023). They concluded that nearly 10 years later only modest progress had been made and, specifically, that “Few studies compared the offending behavior of autistic and non-autistic behaviors to identify unique characteristics or similarities between these populations.” The present study, conducted in Türkiye, contributes to filling this still existent gap in the literature by comparing the demographic, clinical and offending behaviors of criminal offenders with and without ASD in a nationwide forensic database collected over a 10 year period.

METHOD

Forensic psychiatric assessment in the Turkish judicial system

Following the proclamation of the Republic in 1923, Türkiye adopted the Continental European legal system. Presently, the judicial system comprises two main branches: the judicial and administrative judiciary. At the top, as a separate classification, is the Constitutional Court, which monitors the constitutionality of laws. The judicial system has a hierarchy consisting of three levels.

The judicial system comprises of Courts of First Instance, Regional Courts of Appeal, and higher courts such as the Court of Cassation. The Council of Forensic Medicine in Türkiye was established under the Ministry of Justice to act as an expert in matters that fall under the jurisdiction of the judiciary. The duties of the Council can be summarized as follows: Providing scientific and technical opinions on forensic medicine issues submitted to it by courts, prosecutor's offices and public institutions and organizations in the areas deemed appropriate by the Institute; conducting specialist and subspecialist trainings in forensic medicine in accordance with the legislation on medical specialization; conducting studies in the field of forensic medicine and forensic sciences; implementing educational programs in this field; organizing symposiums, conferences, and similar activities to assist in the preparation and implementation of educational programs in forensic medicine (Gulmen & Ince, 2014). The 4th Specialized Board of the Council of Forensic Medicine conducts outpatient assessments and prepares reports, while the Expertise Department of Psychiatric Observation carries out inpatient assessments of relevant cases for up to 3 weeks and prepares reports based on the examinations conducted during this period. The 4th Specialized Board of the Turkish Council of Forensic Medicine consists of 3 psychiatrists and 2 forensic medicine specialists. In addition, the Expertise Department of Psychiatric Observation has 8 psychiatrists, 2 forensic medicine specialists and 1 child and adolescent psychiatrist. The assessment of criminal responsibility for psychiatric disorders in Turkish law is based on Article 32 of the Turkish Penal Code (TPC). Cases involving allegations of mental illness and mental weakness are examined in accordance with this article (Boylu, Taşdemir, Aslıyüksek, & Karamustafaoğlu, 2024). In Türkiye, criminal liability in cases of mental disorders is assessed within the framework of the concept of “mental weakness” as defined in the relevant article (Boylu et al., 2023). In this context, it is important to note that although criminal sanctions are not imposed in cases of alleged mental illness, a number of measures are provided for the protection of society, treatment and rehabilitation of the individual. Some of these measures include the referral of individuals to specialized forensic psychiatric facilities for comprehensive assessment, monitoring, and therapeutic intervention for each group such as patients and juvenile delinquent (Tasdemir et al., 2024; Taşdemir et al., 2023).

Participants and procedure

The study analyzed cases of adults who were diagnosed with ASD and whose criminal responsibility was assessed by the Turkish Council of Forensic Medicine between January 01, 2012 and January 01, 2022. The Turkish Council of Forensic Medicine files between 2012 and 2022 were scanned using the Ulusal Yargı Ağı Projesi/

National Judicial Network Project (UYAP) system. UYAP is software used by all organizations of the Ministry of Justice and for judicial, administrative, and audit activities in an electronic environment. The search in the UYAP system included the keywords “Autism Spectrum Disorder,” “Autism Spectrum,” “Asperger,” “Atypical Autism,” and “Pervasive Developmental Disorder.” The study included cases diagnosed with “Autism,” “Atypical Autism,” “Asperger’s,” and “Childhood Autism.” The medical reports of individuals with ASD were evaluated separately by three psychiatrists. The study analyzed psychiatric reports of adults diagnosed with ASD by psychiatric services during or before the forensic examination. A total of 11,853 reports were searched during the study period for individuals who required a criminal responsibility assessment by the Turkish Council of Forensic Medicine. The results showed that 74 of these individuals (0.62%) were diagnosed with ASD.

To create a control group, the study used the remaining pool of 11,779 who had undergone criminal responsibility evaluations by the Council of Forensic Medicine over the same 10 year period and were not diagnosed with ASD. [Correction added after first online publication on 04 December 2024. The value 11,799 has been revised to 11,779.] The study employed a stratified random sampling technique (Cochran, 1946) to select 100 adults without ASD from a pool of 11,779 individuals who had undergone criminal responsibility evaluations by the Council of Forensic Medicine over a 10-year period. The selection was based on two criteria: age (18–40 years) and year of assessment. Ten individuals were randomly chosen from each year, resulting in a final sample size of 100. To ensure an even distribution, 10 cases were selected for each year using a randomization table. The purpose of this group was to compare individuals with ASD with the general forensic psychiatry population at our center. To achieve this, we selected 10 cases each year from 2012 to 2022 via the website <https://www.graphpad.com/quickcalcs/randomN2/>. Cases were selected sequentially from our patient list, with each column representing 1 year. The randomization table was created by selecting and randomizing numbers between 0 and 1500 using a randomization program. Cases outside the age range of 18–40 years were excluded from selection as the age range of ASD cases evaluated by our council was between 18 and 40 years. If numbers appeared outside the scanned list, the next number was selected to achieve a homogeneous distribution within a 10-year span. For further details, please refer to the Supporting Information.

Assessment

The expert team reviewed the relevant literature and created a three-stage data form. The form collected sociodemographic, clinical, and forensic psychiatric data. The survey included general sociodemographic information

for each individual, such as age, gender, education, employment status, and living arrangements. It also included functioning, diagnostic information, comorbid disorders diagnosed at forensic examination, and the presence of substance abuse. The following variables were evaluated as dichotomous scores: forensic information, type of crime, location of crime, whether the crime was planned or impulsive, confession to the crime, whether a statement was taken, prior criminal history, proximity to the victim, whether the crime was committed under the influence of alcohol or substances, non-suicidal self-injury, presence of malingering, IQ level (Kent and Porteus tests), criminal responsibility decisions, and treatment information. Forensic psychiatrists had made the diagnosis of ASD based on the diagnostic criteria in 10th revision of the International Classification of Diseases (ICD-10) (WHO, 1992), Diagnostic and Statistical Manual of Mental Disorders. 4th Edition (DSM-IV) and Diagnostic and Statistical Manual of Mental Disorders. 5th Edition (DSM-5), if the individual did not already have a diagnosis. The determination of cases with malingering was based on the joint opinions of four psychiatry professors and three psychiatry consultants in forensic reports. This information was documented in a file.

Concepts such as “high-functioning ASD,” “atypical autism,” and “Asperger’s Syndrome” used in our article have historical value but are no longer used. We had to use these terms because they were part of the records reviewed. We are aware that they are not currently used in the way we have described above.

Among the cases that underwent forensic psychiatric evaluation, mental status examinations and family interviews were conducted by psychiatrists on the relevant board to confirm the diagnosis of those with a previous diagnosis of autism. However, some of the cases did not have any previous psychiatric applications, and the diagnosis was made for the first time after the examination by the psychiatry committee. Furthermore, the authors made additional assessments of the reasons for and planning of the criminal acts based on the available records for each individual. These assessments were conducted separately by a team of experts, including a neurodevelopmental psychiatrist and three forensic psychiatrists. The team then discussed the assessments and came to a consensus. Possible reasons for the crimes committed included social misunderstandings, obsessions, delusions and/or special interests, impulsivity, social weakness and manipulation, revenge, and idiosyncratic rationalizations or explanations. The method described by Helverschou et al., (2015) was used to conduct these evaluations. After a discussion, a consensus was reached, and the cause of the offense was determined accordingly (Helverschou et al., 2015). Offenses related to or caused by ASD symptoms were assessed using the concepts of social misconceptions, obsessions, delusions, and/or special interests, while cases in which people with ASD were used by others to commit offenses by exploiting ASD symptoms

or comorbid conditions were assessed using the concepts of social fragility and manipulation. The use of “revenge” and “idiosyncratic rationalizations or explanations” was observed in cases in which individuals committed an act and claimed that it was motivated by revenge or a rational reason, according to their own perspectives.

While determining the qualified forms of the crimes, the definitions in the TPC were utilized. Accordingly, for example, if there is no touching or only a momentary touching for a sexual offense, the crime of simple sexual assault occurs, while if this crime is committed by inserting an “organ or other object into the body,” the qualified form of the relevant crime occurs.

While evaluating criminal responsibility, an evaluation was made according to Articles 32 and 34 of the TPC and accordingly, an evaluation was made in the context of “knowing the legal meaning and consequences of the act committed—whether the ability to perceive and direct their behavior is sufficient.” While Article 32 of the TPC is an article that reduces criminal responsibility due to mental illness (such as psychotic spectrum, intellectual disability, dementia) (Boylu, Taşdemir, Ashyüksel, & Karamustafalıoğlu, 2024; Boylu, Taşdemir, Doğan, & Duran, 2024; Taşdemir et al., 2024), Article 34 regulates situations that eliminate responsibility due to temporary medical reasons (such as delirium, encephalitis) (Boylu et al., 2023). Social misunderstanding; social vulnerability situations are classified according to the common opinion of experts specific to each case. For example, a simple sexual offense committed by an individual with autism due to social misunderstanding.

Statistical analyses

The statistical data were analyzed with IBM SPSS 28.0. The Kolmogorov–Smirnov normality test was used to check the data distribution. A *t*-test for independent samples was used to compare normally distributed data and a non-parametric Mann–Whitney *U*-test was used for non-normally distributed variables. The chi-square test was used for the comparison of categorical variables. A *p*-value of less than 0.05 was considered statistically significant. For each row, the chi-square values were calculated separately by splitting them into “the value in this row” and “the values in other rows.”

Ethical approve

Our study was discussed by the Scientific Research Committee and Ethics Committee the Council of Forensic Medicine of Türkiye at the meeting held on August 09, 2023 and the approval of the Ethics Committee was granted under the number 21589509/2023/735.

Community involvement statement

The study did not include any members from the autism community, either as a group or as individuals.

RESULTS

In terms of demographic characteristics; the mean age of the ASD group was significantly younger than that of the non-ASD group ($p < 0.001$). The ASD group was more likely to be single. The proportion of people with special education and a college degree was significantly higher in the ASD group than in the non-ASD group, while the proportion of people with no education and a primary school degree was significantly higher in the non-ASD group ($p < 0.001$). The ASD group had a significantly higher proportion of people who had never worked, while the non-ASD group had a significantly higher proportion of people with regular employment. The non-ASD group had a significantly higher proportion of people living alone than the ASD group ($p < 0.001$). It is important to note that the mean age at diagnosis in the ASD group was 14.31 (± 7.70). Details can be found in Table 1.

Among the comorbid disorders, intellectual disability (ID) (16 mild ID, 3 moderate ID), obsessive-compulsive disorder (OCD) ($p < 0.001$), and ADHD (0.004) were significantly more common in the ASD group. Conversely, personality disorders ($p < 0.001$) were statistically more common in the group without ASD. In addition, alcohol, and substance use was significantly lower in the ASD group ($p < 0.001$). In terms of treatment, the non-ASD group received significantly less medication ($p < 0.001$). The study found that criminal responsibility was full in the non-ASD group, whereas it was reduced or abolished in the ASD group ($p < 0.001$). Details are shown in Table 2.

The analysis showed that the ASD group had higher rates of simple violent offenses (simple assault, simple sexual assault, threats, insults, etc.) and simple (non-penetrative) sexual offenses ($p < 0.001$), while the non-ASD group had statistically significantly higher rates of qualified violent offenses ($p = 0.011$) and theft/looting ($p = 0.006$). In addition, the ASD group was more likely to commit crimes impulsively, while the non-ASD group was more likely to commit crimes in a planned manner ($p < 0.001$). The study found that the ASD group were more likely to talk about committing crimes on social media ($p = 0.011$). The reasons for committing crimes differed between the two groups, with impulsivity ($p = 0.006$), social vulnerability, and manipulation ($p = 0.004$) being more common in the ASD group, while revenge ($p = 0.003$) was more common in the non-ASD group. In the non-ASD group, all the participants were classified as fit to negotiate, while 10 participants in the ASD group were classified as unfit to negotiate and consequently referred directly for psychiatric evaluation.

TABLE 1 Comparison of the socio-demographic characteristics of ASD and non-ASD offenders.

			ASD or non-ASD offender						
			ASD		Non-ASD		<i>p</i>	<i>X</i> ² / <i>df</i>	Odds ratio Cohen's <i>d</i>
			<i>n</i>	<i>n</i> %	<i>N</i>	<i>n</i> %			
Age (Mean ± SD)			23.86 (±5.55)		28.21 (±6.31)		<0.001	−4.717	0.73
Sex	Male		70	94.6%	89	89.0%	0.194	1.690	2.163
	Female		4	5.4%	11	11.0%			
Marital status	Single		70	94.6%	77	77.0%	0.002	10.043	5.227
	Married		3	4.1%	13	13.0%	0.043	4.076	0.283
	Divorced		1	1.4%	10	10.0%	0.02	5.372	0.123
Educational status	No education		2	2.7%	8	8.0%	0.138	2.203	0.319
	Elementary		4	5.4%	33	33.0%	<0.001	19.342	0.116
	Secondary school		11	14.9%	30	30.0%	0.02	5.409	0.407
Employment status	High school		26	35.1%	24	24.0%	0.109	2.575	1.715
	College		11	14.9%	5	5.0%	0.026	4.957	3.317
	Special school		20	27.0%	0	0.0%	<0.001	30.537	2.852
	Never worked		55	74.3%	52	52.0%	0.003	8.951	2.672
	Irregular employment		14	18.9%	24	24.0%	0.423	0.643	0.739
	Regular employment		5	6.8%	24	24.0%	0.003	9.104	0.229
	Living with		4	5.4%	28	28.0%	<0.001	14.466	0.147
Leisure	Alone		63	85.1%	68	68.0%	0.01	6.711	2.695
	With family		3	4.1%	3	3.0%	0.706	0.142	1.366
	With friends		4	5.4%	1	1.0%	0.085	2.957	5.657
	Government organization		19	25.7%					
	No activity		18	24.3%					
	Organized or social activities		37	50.0%					
Social networks	Activities alone or hobbies		6	8.1%					
	Live alone		29	39.2%					
	Just live with family		39	52.7%					
Nation	Few friends		69	93.2%	97	97.0%	0.242	1.368	0.427
	Turkish citizen		5	6.8%	3	3.0%			
ASD_Subtypes	Foreign nationals		21	28.4%					
	Asperger		20	27.0%					
Diagnosis age	Childhood autism		33	44.6%					
	Atypical autism		14.31 (±7.70)						
ASD diagnosed during forensic assessment	No		64	86.5%					
	Yes		10	13.5%					

Note: Bold values indicate statistical significance.

Abbreviations: ASD, people with autism spectrum disorder; non-ASD, people without autism spectrum disorder.

($p < 0.001$). The ASD group was found to have fewer previous convictions ($p < 0.001$). While the rate of committing a crime on social media in the ASD group was statistically significantly higher than the control group ($p < 0.001$), the rate of committing a crime against a person they knew was statistically significantly lower than the control group ($p = 0.008$). In cases where social media was a place of crime, the ASD group was more dominant. Further details can be found in Table 3.

When the cases were divided into two groups according to whether they had a previous diagnosis of autism or not,

that is, according to whether autism was diagnosed for the first time in forensic psychiatric assessment, it was found that 64 cases had a previous diagnosis of autism and 10 cases were diagnosed with autism for the first time in forensic psychiatric evaluation. There was no statistically significant difference between these two groups in terms of age, marital status, employment status, type of crime, and reason for committing the crime, but the difference between the two groups in terms of sex ($p = 0.028$) and educational status ($p = 0.016$) was significant. Details about this comparison are shared as Supporting Information.

TABLE 2 Comparison of the clinical characteristics of ASD and non-ASD offenders.

		ASD or non-ASD offender						
		ASD		Non-ASD		<i>p</i>	<i>X</i> ² / <i>df</i>	Odds ratio
		<i>n</i>	<i>n</i> %	<i>n</i>	<i>n</i> %			
Comorbid diagnosis	None	11	14.9%	29	29.0%	0.028	4.800	0.427
	Intellectual disability	19	25.7%	5	5.0%	<0.001	15.290	6.564
	OCD	14	18.9%	1	1.0%	<0.001	17.335	23.100
	ADHD	6	8.1%	0	0.0%	0.004	8.398	2.471
	Substance related diagnosis	6	8.1%	10	10.0%	0.669	0.182	0.794
	Psychosis	5	6.8%	12	12.0%	0.249	1.326	0.531
	Affective disorders	5	6.8%	6	6.0%	0.839	0.41	1.135
	Anxiety disorders	5	6.8%	4	4.0%	0.417	0.619	1.739
	Personality disorders	3	4.1%	31	31.0%	<0.001	19.641	0.094
	Other	0	0.0%	2	2.0%	0.221	1.497	1.755
Alcohol abuse	No	63	85.1%	51	51.0%	<0.001	21.935	5.503
	Yes	11	14.9%	49	49.0%			
Substance abuse	No	68	91.9%	52	52.0%	<0.001	31.621	10.462
	Polysubstance abuse	3	4.1%	36	36.0%	<0.001	24.958	0.075
	Marijuana	3	4.1%	7	7.0%	0.409	0.681	0.561
	MDMA	0	0.0%	5	5.0%	0.051	3.809	1.779
Pre-incident alcohol use	No	74	100.0%	92	92.0%	0.013	6.205	0.554
	Yes	0	0.0%	8	8.0%			
Pre-incident substance use	No	73	98.6%	92	92.0%	0.050	3.833	6.348
	Yes	1	1.4%	8	8.0%			
Non-suicidal self-injury	No	57	77.0%	60	60.0%	0.018	5.598	2.235
	Yes	17	23.0%	40	40.0%			
Malingering	No	59	79.7%	76	76.0%	0.560	0.340	1.242
	Symptom over-report	15	20.3%	22	22.0%	0.783	0.076	0.901
	Symptom underreport	0	0.0%	2	2.0%	0.221	1.497	1.755
IQ score (mean + SD)		77.30 (±14.35)		73.11 (±5.06)		0.399	0.853	0.389
Criminal responsibility	Full capacity	41	55.4%	90	90.0%	<0.001	27.356	0.138
	No criminal responsibility	13	17.6%	9	9.0%	0.093	2.826	2.155
	Reduced criminal responsibility	20	27.0%	1	1.0%	<0.001	27.147	36.667
Pharmacological treatment	No	10	13.5%	77	77.0%	<0.001	68.565	0.047
	Antipsychotics	12	16.2%	11	11.0%	0.315	1.009	1.566
	Antidepressants	6	8.1%	6	6.0%	0.587	0.294	1.382
	Antiepileptic	5	6.8%	3	3.0%	0.242	1.368	2.343
	Antipsychotics and antidepressants	10	13.5%	0	0.0%	<0.001	14.338	2.563
	Antipsychotics and antiepileptic	9	12.2%	1	1.0%	0.002	9.782	13.708
	Antidepressants and antiepileptic	1	1.4%	0	0.0%	0.244	1.359	2.370
	Antipsychotics, antiepileptics, and antidepressants	18	24.3%	2	2.0%	<0.001	20.835	15.750
	Psychostimulants	3	4.1%	0	0.0%	0.042	4.125	2.408

Note: Bold values indicate statistical significance.

Abbreviations: ADHD, attention deficit and hyperactivity disorder; ASD, people with autism spectrum disorder; non-ASD, people without autism spectrum disorder, OCD, obsessive-compulsive disorder.

DISCUSSION

This study, conducted in Türkiye, is the first to our knowledge to use a national forensic database to

compare adult offenders with and without ASD on a wide range of sociodemographic, clinical, and offending variables. Significant differences were found across all three domains. The analysis of the results indicates that,

TABLE 3 Comparison of the legal characteristics of ASD and non-ASD offenders.

		ASD or non-ASD offender						
		ASD		Non-ASD		<i>p</i>	<i>X</i> ²	Odds ratio
		<i>n</i>	<i>n</i> %	<i>n</i>	<i>n</i> %			
Types of crime	Simple violent crimes (simple injury, verbal violence etc.)	42	56.8%	26	26.0%	<0.001	16.898	3.736
	Qualified violent crimes (murder, overkill etc.)	1	1.4%	19	19.0%	<0.001	13.021	0.058
	Simple sexual crime	17	23.0%	9	9.0%	0.011	6.533	3.016
	Qualified sexual crime	2	2.7%	9	9.0%	0.091	2.848	0.281
	Vandalism	5	6.8%	6	6.0%	0.839	0.041	1.135
	Theft or looting	4	5.4%	20	20.0%	0.006	7.618	0.229
	Fraud	1	1.4%	3	3.0%	0.473	0.515	0.443
	Financial offenses	2	2.7%	8	8.0%	0.138	2.203	0.319
Impulsive or planned	Planned	22	29.7%	72	72.0%	<0.001	30.594	0.165
	Impulsive	52	70.3%	28	28.0%			
Crime place	House and apartment inside	13	17.6%	26	26.0%	0.187	1.739	0.607
	Street	31	41.9%	54	54.0%	0.114	2.495	0.614
	Workplace	15	20.3%	20	20.0%	0.965	0.002	1.017
	School	2	2.7%	0	0.0%	0.098	2.734	2.389
	Social media	13	17.6%	0	0.0%	<0.001	18.986	2.639
Admission of guilt for the crime	No	14	18.9%	21	21.0%	0.735	0.115	0.878
	Yes	60	81.1%	79	79.0%			
Reason of the crime	Unknown	0	0.0%	3	3.0%	0.133	2.259	1.763
	Social misunderstandings	8	10.8%	4	4.0%	0.080	3.072	2.909
	Obsessions, delusions, and/or special interests	9	12.2%	5	5.0%	0.086	2.949	2.631
	Impulsivity	21	28.4%	12	12.0%	0.006	7.423	2.906
	Social fragility and manipulability	6	8.1%	0	0.0%	0.004	8.398	2.471
	Revenge	5	6.8%	24	24.0%	0.003	9.104	0.229
	Idiosyncratic rationalizations or explanations	25	33.8%	52	52.0%	0.017	5.721	0.471
Fitness to plead	No	10	13.5%	0	0.0%	<0.001	14.338	2.563
	Yes	64	86.5%	100	100.0%			
Criminal record	No	65	87.8%	34	34.0%	<0.001	50.264	14.020
	1–2 Record	2	2.7%	6	6.0%	0.305	1.054	0.435
	3–5 Record	3	4.1%	23	23.0%	<0.001	12.011	0.141
	5–10 Record	1	1.4%	8	8.0%	0.050	3.833	0.158
	>10 Record	3	4.1%	29	29.0%	<0.001	17.634	0.103
Relationship with the victim	Stranger	40	54.1%	41	41.0%	0.088	2.913	1.693
	Family	12	16.2%	17	17.0%	0.891	0.019	0.945
	Friend	13	17.6%	15	15.0%	0.649	0.208	1.208
	Neighbor	8	10.8%	15	15.0%	0.420	0.651	0.687
	Known person	1	1.4%	12	12.0%	0.008	6.976	0.1

Note: Bold values indicate statistical significance.

Abbreviations: ASD, people with autism spectrum disorder; non-ASD, people without autism spectrum disorder.

from a sociodemographic perspective, the group of people with ASD is characterized by a younger age profile and lower rates of marriage and employment. With regard to clinical characteristics, the study indicates that individuals with ASD frequently present with additional psychiatric comorbidities, including ID, ADHD, and OCD. Furthermore, a lower prevalence of alcohol and

substance use was observed in the ASD group, and non-suicidal self-injury (NSSI) behaviors were observed less frequently in this group. With regard to the profile of criminal offenses, the present study indicates that individuals with ASD predominantly engaged in impulsive, simple (non-penetrative) sexual, or violent acts. The underlying motives for these offenses were primarily

impulsivity and manipulability. Notably, social media emerged as a prominent location for criminal activities among the ASD group the incidence of the victim being a known person was comparatively lower.

Sociodemographic characteristics

Given the lack of data regarding the prevalence of ASD in Türkiye, this study is unable to provide insight into whether individuals with ASD are under- or over-represented in the CJS compared to the general Turkish population. It can be stated with certainty that the rate of ASD in this forensic population (0.006, 74/11,853) is lower than the accepted global prevalence of ASD (1%) (Zeidan et al., 2022). With regard to sociodemographic characteristics, the adult offenders with ASD were younger, within the 18-to-40-year age range, in comparison to those without ASD. The subjects were more likely to be single, not living independently, and unemployed. These characteristics are broadly consistent with the demographics reported for young adults with ASD in other Western countries (Brett et al., 2016; Kurasawa et al., 2018; Noterdaeme & Hutzelmeyer-Nickels, 2010; Zuckerman et al., 2017). The age at which the group with ASD received their first diagnosis (14 years) appears relatively late. However, the significance of this is unclear due to a lack of information on the age at which ASD is diagnosed in the Turkish general population. Studies on the sociodemographics of ASD in comparison to the general population in Türkiye are only just beginning (Boylu, Taşdemir, Doğan, & Özcanlı, 2024; Doeniyas et al., 2023).

Clinical characteristics

It is notable that the adult offenders with and without ASD did not differ in mean IQ (77.30 ± 14.35 and 73.11 ± 5.06 , respectively) and exhibited similar rates of symptom over-report, that is, malingering (approximately 1 in 5 of each group). The adult offenders with ASD exhibited higher rates of ID, OCD, and ADHD compared to those without ASD. Conversely, the group without ASD demonstrated higher rates of personality disorders, polysubstance use, and alcohol abuse. The elevated prevalence of psychiatric comorbidities in the ASD group may contribute to the observed higher rate of psychotropic medication use.

Both ID and ADHD are associated with impulsivity (Alamdarloo et al., 2020; Bexkens et al., 2014; El Archi et al., 2023), and these comorbidities may be a factor in the higher rate of impulsivity in offenses committed by adults with ASD (see section on offending characteristics, below). The prevalence of alcohol and substance use prior to the incident was minimal among the ASD group, rendering this factor an unlikely explanation for the

observed impulsivity. A previous study of adults with ASD on an inpatient forensic unit in Türkiye indicated that psychiatric comorbidities contributed more to the commission of crime than the core characteristics of ASD (Boylu, Taşdemir, Doğan, & Özcanlı, 2024). A recent study from Sweden has found that in a nationally representative sample limited to violent offenders, those with and without ASD did not differ with respect to externalizing behavior problems in childhood or rates of ADHD, suggesting that ADHD is an important factor in violent offending regardless of ASD status (Hofvander et al., 2019; Siponen et al., 2023). A population-based study revealed a correlation between ADHD symptoms, impulsivity, cyberdeviance, and criminal behavior in adults (Panagiotidi & Overton, 2021), indicating a potential link between ADHD and criminality. The prevalence of OCD in individuals with ASD has been reported to range between 9% and 22% in the literature (Hollocks et al., 2019; Hossain et al., 2020; Lai et al., 2019; Van Steensel et al., 2011). There is a paucity of knowledge regarding the prevalence of OCD in forensic populations. However, it is generally accepted that the incidence of criminal behavior among OCD patients is lower than that observed in the general population (Freckelton, 2020). The group with ASD was markedly less likely to have a criminal record and was more likely to be deemed unfit to plead.

Offending characteristics

With regard to the type of crime, adult offenders with and without ASD exhibited comparable rates of vandalism, fraud, and financial offenses. However, offenders with ASD were less likely to commit theft/looting and violent and sexual (penetrative) offenses, and more likely to commit violent and sexual (non-penetrative) offenses, in comparison to those without ASD. Looking at the offending characteristics of people with ASD in the literature, violent offenses are the most common, followed by sexual offenses (Boylu, Taşdemir, Doğan, & Özcanlı, 2024; Helveschou et al., 2015; Hofvander et al., 2023). The interest of the research community in the types of crimes committed by persons with ASD has been prompted, in part, by speculation in the news media, largely in Western countries, that the core features of ASD may contribute to the commission of mass murder (e.g., Terence McCoy, Washington Post, May 21, 2014) (McCoy, 2014). This particular form of violent crime was not identified as a discrete category in the Turkish study. The current dearth of compelling evidence substantiating the involvement of neurodevelopmental issues in individuals perpetrating mass murder has been underscored in a recent erudite review (Allely et al., 2014; Salter & Blainey, 2024).

The offenses committed by the group with ASD were more likely to be impulsive in nature, as opposed to being the result of premeditated planning. The group with ASD

was less likely to perpetrate an offense against someone they knew. There was no significant difference between the two groups in terms of their admission of guilt for the crime. With regard to the motives underlying the commission of the crime, impulsivity, and social fragility/manipulability were more prevalent among the group with ASD, whereas revenge and idiosyncratic rationalizations were more common among the group without ASD. It is noteworthy that the two groups did not differ with respect to social misunderstanding, obsessions/delusions or special interests as reasons for offending. This result is inconsistent with the view that core characteristics of ASD (social misunderstanding and special interests) may predispose adults with ASD to offend.

Studies have shown that people with ASD are overrepresented in the forensic population (Mouridsen, 2012; Siponmaa et al., 2001; van Buitenen et al., 2021). However, other studies suggest that they commit crime at a similar rate to the general population and are not more likely to commit crime compared to comparison groups (Blackmore et al., 2022; King & Murphy, 2014). When examining the types of offenses committed, there is no consensus on the risk of violent crime in people with ASD compared to people in the general population. Research has revealed that individuals with ASD have certain sensitivities specific to ASD, such as social communication problems, and that these sensitivities may increase the likelihood of being accused of sexual crimes (Allely & Creaby-Attwood, 2016; Mouridsen, 2012). In another study, comorbid conditions were found to be significant predictors of violent offenses, with the risk of committing violent crimes increasing as the number of mental disorders increased. Furthermore, negative social networks/influenceability also emerged as significant predictors of violent offenses in this sample (van Buitenen et al., 2021). A recently published study, suggested that additional psychopathologies accompanying ASD cause more frequent legal problems than ASD itself directly causing criminal acts (Boylu, Taşdemir, Doğan, & Özcanlı, 2024).

The findings of this study indicate that adult offenders with ASD were 2.7 times more likely to engage in criminal activities on social media platforms than those without ASD ($OR = 2.639$). The reasons for this phenomenon have not been the subject of sufficient study. Individuals with ASD are known to spend more time on social media than individuals without ASD (Triantafyllopoulou et al., 2021). This may render them more susceptible to criminal or delinquent conduct. The anonymity and identity obfuscation inherent in social media may afford individuals with ASD the opportunity to express themselves with greater ease and engage in behaviors that contravene social norms. Moreover, individuals with ASD may experience difficulty in comprehending social rules and norms, and exposure to or encountering inappropriate content on social media may contribute to criminal behavior. The existing literature often attributes blame to the core features of ASD

(e.g., difficulties in social communication and interaction), but the role of impulsivity and other comorbid factors must also be considered (Hwang et al., 2018).

This study demonstrates that the legal assessment process is influenced by the presence of an ASD, as evidenced by the removal or reduction of criminal responsibility in the ASD group. In Türkiye, the assessment of criminal responsibility in the presence of mental disorders is conducted in accordance with Article 32 of the TPC, as detailed in the Method Section. Adults with ASD may be considered to fall under the remit of both the first and second paragraphs of this article, given their cognitive and social characteristics. In individuals with more severe autism who received a diagnosis during childhood, both cognitive and behavioral control are impaired. Conversely, those at the milder end of the spectrum may only exhibit a lack of willpower, and criminal responsibility may not be affected.

The Turkish system of assessment of criminal responsibility by psychiatric experts in accordance with nationally accepted standards is starkly divergent from the circumstances prevailing in the United States, where policies pertaining to criminal responsibility and penalties, including the death penalty, vary from one state to another. In 2004, the death penalty was entirely abolished in Turkey.

The existing literature has examined the experiences of individuals with ASD within the CJS. This includes an analysis of their interactions with law enforcement, court proceedings, and incarceration (Helveschou et al., 2018; King & Murphy, 2014). In addition, our recently published study of adolescents and adults with ASD hospitalized in a forensic psychiatric service found that the criminal acts of these individuals were typically single-movement, spontaneous, unplanned, and impulsive (Boylu, Taşdemir, Doğan, & Özcanlı, 2024).

Study strengths and limitations

The most notable strength of this study is its design and sampling methods. The forensic database used covers a 10-year period for an entire geographic region (the nation of Türkiye); both the ASD and non-ASD groups were drawn from this national database and the non-ASD group was randomly selected from those 18–40 years old in each of the 10 years included in the database. A second strength is the rigor of the ASD diagnosis, which is inherent to the Turkish system for assessment of criminal responsibility. A third strength is the wide range of sociodemographic, clinical, and criminal variables compared across group.

The study is not without limitations. First, the study is retrospective and based on chart review. During the 10-year period, accepted definitions of ASD continued to change. Second, while the age range of the ASD group (18–40 years) was used to select the non-ASD group, the ASD group was younger. Finally, this descriptive study

did not conduct latent class analysis looking at the co-occurrence of offending characteristics at an individual level, therefore it would be incorrect to say the study has identified an “offending profile” that is characteristic of adult offenders with ASD. However, such analyses could be a next step in this and other appropriate large datasets.

CONCLUSION

This study comparing adult offenders with and without ASD from a 10-year national forensic database in Turkey found that those with ASD were younger, more likely to be single and unemployed. While those without ASD had higher rates of comorbid personality disorders, those with ASD were more likely to have ID, ADHD, and OCD. The violent and sexual offenses in those with ASD were more likely to be simple (non-penetrative), and their crimes were more likely to be impulsive and less likely to involve revenge. Social misunderstanding and delusions/special interests were equally common in both groups. Those with ASD were more than twice as likely as those without ASD to commit crimes on social media. This descriptive study underscores the necessity for tailored treatment and support programs to ensure that individuals with ASD are treated fairly and appropriately within the CJS.

AUTHOR CONTRIBUTIONS

Muhammed Emin Boylu: Study design, data collection, data evaluation, literature review, and manuscript writing (introduction, method, results, discussion, conclusion). **Aynur Görmez:** Design of the study, evaluation of the data, writing the article (introduction, method and discussion), literature review, and scientific guidance. **Şenol Turan:** Data evaluation, article writing (introduction and discussion), literature review, and scientific guidance. **Ümit Haluk Yeşilkaya:** Evaluation of data, article writing (introduction and discussion), literature review, and scientific guidance. **Fatma Betül Boylu:** Study design, statistical analysis, and manuscript writing (method, results). **Alaattin Duran:** Study design, data evaluation, manuscript writing (discussion), and scientific guidance.

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CONFLICT OF INTEREST STATEMENT

The authors declared that there is no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author, (Muhammed Emin Boylu). The data are not publicly available due to their containing information that could compromise the privacy of research participants.

ETHICS STATEMENT

Our study was discussed by the Scientific Research Commission and Ethics Committee of the Council of Forensic Medicine of Türkiye at the meeting held on August 09, 2023 and Ethics Committee approval was granted under the number 21589509/2023/735.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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