

Investigating the Impact of Alcohol and Drug Use and Impulsive Driving on Taxi Drivers' Behavior: Cross-Sectional Study

Alkol ve Madde Kullanımının ve Dürtüsel Araç Kullanımının Taksi Sürücülerinin Davranışları Üzerindeki Etkisinin İncelenmesi: Kesitsel Araştırma

 Alev AKTAŞ^a

^aSivas Cumhuriyet University Faculty of Letters, Department of Psychology, Sivas, Türkiye

This study's some findings was presented as an oral presentation at 5th TIAFT Regional Meeting in Türkiye, October 9-11, 2024, Diyarbakır, Türkiye.

ABSTRACT Objective: The aim of this study was to examine the driving behaviour of Turkish taxi drivers on the basis of their frequency of alcohol and drug use (including medicine abuse) and impulsive characteristics, and to reveal the relationship between these variables. **Material and Methods:** A total of 59 volunteer male taxi drivers living in Ankara, Erzincan and Tokat completed a series of tests (i.e., Alcohol Use Disorders Identification Test-Short Form, Drug Use Disorders Identification Test, Driver Behavior Questionnaire, Impulsive Driver Behavior Scale and demographic and driver information form). Data were transferred to the SPSS v.25, where they were summarized using frequency tables and analyzed using correlation and hierarchical regression analysis. **Results:** Approximately 5% of taxi drivers reported high-risk alcohol use, and 10.2% reported a history of problematic drug use. Only one participant had a high-risk drug use. Additionally, 15.3% of the drivers reported receiving traffic fines at least once for driving under the influence of alcohol. The findings revealed that alcohol use significantly influenced aggressive violations, while drug use affected violations, lapses, and aggressive violations. **Conclusion:** The characteristics of alcohol, drug and medicine use by drivers are important issues that need to be analyzed from a road safety perspective.

Keywords: Taxi drivers; driver behavior; impulsive driver behavior; alcohol; drug

ÖZET Amaç: Bu çalışmanın amacı, Türk taksi sürücülerinin sürüş davranışlarını alkol ve madde kullanma sıklıkları (tıbbi ilaç kullanımı dâhil) ve dürtüsel özellikleri temelinde incelemek ve bu değişkenler arasındaki ilişkiyi ortaya koymaktır. **Gereç ve Yöntemler:** Ankara, Erzincan ve Tokat'ta yaşayan toplam 59 gönüllü erkek taksi sürücüsü bir dizi testi (Alkol Kullanım Bozukluklarını Belirleme Testi-Kısa Formu, Madde Kullanım Bozukluklarını Belirleme Testi, Sürücü Davranış Ölçeği, Dürtüsel Sürücü Davranış Ölçeği ve demografik ve sürücü bilgi formu) doldurmuştur. Veriler, SPSS v.25 programına aktarılmış, burada frekans tabloları kullanılarak özetlenmiş, korelasyon ve hiyerarşik regresyon analizleri kullanılarak analiz edilmiştir. **Bulgular:** Taksi şoförlerinin yaklaşık %5'i yüksek riskli alkol kullanımı, %10,2'si ise problemli madde kullanımı geçmişi bildirmiştir. Sadece bir katılımcının yüksek riskli madde kullanımı vardı. Ayrıca sürücülerin %15,3'ü, alkolü araç kullandıkları için en az bir kez trafik cezası aldıklarını bildirmiştir. Bulgular, alkol kullanımının agresif ihlalleri önemli ölçüde etkilediğini, madde kullanımının ise kural ihlallerini, hataları ve agresif ihlalleri etkilediğini göstermiştir. **Sonuç:** Sürücüler tarafından alkol, madde ve ilaç kullanımının özellikleri, karayolu güvenliği perspektifinden analiz edilmesi gereken önemli konulardandır.

Anahtar Kelimeler: Taksi sürücüler; sürücü davranış; dürtüsel sürücü davranış; alkol; madde

Correspondence: Alev AKTAŞ
Sivas Cumhuriyet University Faculty of Letters, Department of Psychology, Sivas, Türkiye
E-mail: alevaktas@cumhuriyet.edu.tr



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Urban transportation in many countries, particularly in middle- and low-income nations, is predominantly carried out using public transport. In addition, in countries with higher levels of development, public transportation options such as rail systems (e.g., subways) are also widely available and commonly used by people. In Türkiye, classified as a high-middle-income country according to the World Bank classification, the use of public transportation is quite prevalent. Taxis hold a significant place among these transportation options. Taxis are a type of public transportation primarily serving small groups or individuals and are generally preferred for short-distance trips. However, taxi drivers can contribute to substantial social, environmental, and economic problems due to certain risky driving behaviors while operating in traffic.¹ Therefore, taxi drivers represent an important group that needs to be studied to enhance traffic safety.

DRIVER BEHAVIOURS

Drivers' behaviours such as speeding, which are directly related to the risk of having an accident while driving, and their attitudes towards traffic safety are defined as driver behavior.² Among these, aberrant driver behaviors are frequently investigated topics in the traffic and transportation psychology literature. To measure these behaviors, the Driver Behavior Questionnaire, developed by Reason and colleagues in 1990, is widely used.³ This scale has also been used in studies involving Turkish taxi drivers to evaluate their driving behaviors.⁴ Recent studies have also focused on comparing the driving behaviors of professional drivers, such as taxi drivers, with non-professional drivers. For instance, a past driving simulation study found that taxi drivers were more likely than non-professional drivers to run red lights, more inclined to steer to avoid potential collisions, and exhibited lower collision rates overall.⁵ These findings suggest that taxi drivers demonstrate better performance and achieve more favorable outcomes in terms of traffic safety during simulation tasks.

Another experimental study comparing taxi drivers with non-professional drivers found that non-professional drivers exhibited higher speeds and riskier behaviors in various scenarios compared to

taxi drivers. However, taxi drivers were more likely to commit violations related to passenger drop-off and pick-up. The study also found that time pressure was significantly associated with risky behaviors in the traffic environment.⁶

In addition to situational factors related to the traffic environment, psychological factors such as personality traits may also influence the emergence of negative driving behaviors.^{1,7} A recent study showed that the personality traits of motor vehicle drivers have a significant impact on the human factor in traffic accidents.⁸ Based on this information, it can be argued that, within the framework of personality theories, there are relationships between personality traits (e.g., delays in decision-making and risky behaviors) and negative behaviors (including offenses).

IMPULSIVE DRIVER BEHAVIORS

In traffic, impulsivity is particularly addressed in relation to aberrant and aggressive driving behaviors.⁹ However, impulsivity is not solely evaluated in terms of its negative outcomes. It is well known that some drivers act without thinking in traffic environments. Identifying such behaviors and determining drivers' tendencies are crucial for traffic safety. To measure impulsivity specifically in traffic, Bıçaksız and Özkan developed the Impulsive Driver Behavior Scale.¹⁰ This scale includes 4 subscales: driver functional impulsivity, driver urgency, driver lack of premeditation, and driver lack of perseverance. Some research findings have shown that traffic-specific impulsivity contributes more significantly to driver behaviors than general impulsivity. Accordingly, drivers who exhibit higher levels of errors, lapses, and violations also display higher levels of impulsive behaviors.¹⁰

Recent findings in the literature indicate significant relationships between sensation seeking and various driving behaviors, including violations and errors, speeding, different types of offenses, and drug or stimulant use.¹¹⁻¹⁴

ALCOHOL, SUBSTANCE OR MEDICINE USE IN DRIVERS

It is a well-established fact that driving under the influence of alcohol, substance, or medication signifi-

cantly increases the risk of traffic accidents. This is because such drugs not only impair drivers' driving skills but also affect their behaviors and attitudes. As a result, this issue represents a critical traffic safety concern.

Alcohol has a considerable negative impact on drivers' cognitive capacities, with impairments reportedly beginning at a blood alcohol concentration (BAC) level of 0.03% or higher, according to some sources.¹⁵ Beyond alcohol, driving after consuming drugs has also been identified in various studies as a factor contributing to increased traffic accidents.¹⁷ Recent research revealed that substances were detected in 55.8% of injured individuals involved in traffic accidents, with the most commonly identified substances being cannabinoids, alcohol, stimulants, and opioids.¹⁸ Additionally, some researchers have highlighted that the combined use of alcohol and drugs further elevates the risk of involvement in traffic accidents.¹⁹

A wide range of psychopathological variables, including alcohol and drug use, and their effects on traffic safety, have been the subject of numerous studies. It has been suggested that mental health problems, particularly mood disorders, anxiety, psychosis, and issues related to alcohol or substance use, can significantly increase the risk of motor vehicle accidents.²⁰

Research on driving under the influence of alcohol and drugs has also employed Ajzen's Theory of Planned Behavior as a theoretical framework.²¹ For instance, recent studies have shown that the Theory of Planned Behavior (i.e., attitudes, subjective norms, and perceived behavioral control) significantly explains drivers' intentions to drive under the influence of alcohol.²²

CURRENT STUDY

Alcohol and substance use present significant risks for both drivers and other road users in terms of mortality and morbidity within the traffic environment.²³ Therefore, detecting alcohol and drug use among drivers and developing preventive programs in this area are of vital importance. Currently, there is no regular workplace substance testing program for Turkish taxi drivers, who form the sample group of

this study. Existing legal regulations in Türkiye highlight certain limitations, stating that alcohol and substance testing is primarily conducted in the event of a traffic accident, with legal proceedings initiated under the Turkish Penal Code for endangering traffic safety. These gaps in practice, combined with the need to investigate how often drivers engage in behaviors and attitudes that could compromise traffic safety, underscore the importance of addressing this issue.

In this study, some psychopathological variables related to road safety are investigated according to the drivers' self-reports. In this context, the aim was to examine the driving behavior of Turkish taxi drivers in terms of their frequency of alcohol and drug use (including medicine abuse) and impulsive characteristics, and to reveal the relationship between these variables.

MATERIAL AND METHODS

The study was approved by the Ethical Evaluation Board for Social Sciences Research Proposals of Sivas Cumhuriyet University (date: April 17, 2023; no: 2023/7). This study was carried out following the principles of the Declaration of Helsinki. Informed consent was obtained from all participants. A total of 59 volunteer male taxi drivers living in Ankara, Erzurum and Tokat completed a series of tests detailed below. The mean age of the participants was 46.83 years (standard deviation=13.19). The participants had been actively driving for an average of 25 years (standard deviation=1.56) and had been working as professional drivers for 17.60 years (standard deviation=1.67). Only 2 drivers reported using trucks and transit vehicles in addition to taxis. Data were collected face-to-face by going to the taxi stands where taxi drivers work. An application took about 25-35 minutes. They completed a series of tests [i.e., Alcohol Use Disorders Identification Test-Short Form (AUDIT-C), Drug Use Disorders Identification Test (DUDIT), Driver Behavior Questionnaire (DBQ), Impulsive Driver Behavior Scale and demographic and driver information form].

Alcohol Use Disorders Identification Test-Short Form: This scale was developed by the World

Health Organization to measure alcohol-related problems in the past 12 months. It is a 10-item scale that measures drinking habits, alcohol consumption and alcohol-related problems. There is also a short form of the scale (AUDIT-C) that includes only the first 3 questions about alcohol use. The short form is mostly used in screening for risky alcohol use. The validity and reliability of the revised Turkish version was conducted by Saatçioğlu et al. The Cronbach alpha coefficient of internal consistency was 0.65. This coefficient value for the short form of the scale is 0.85.²⁴ In the present study, the Cronbach alpha value was at an acceptable level (0.74).

Drug Use Disorders Identification Test: This test was developed in 2003 by Berman et al. They used their research on the psychometric properties of the DUDIT in both the general population and the clinical population.²⁵ Higher scores indicate more serious problems with drug use. The validity and reliability study on the Turkish sample was conducted by Evren et al. in 2014.²⁶ The Cronbach alpha coefficient of internal consistency was found to be 0.93, and the sensitivity and specificity scores were calculated to be 0.96 and 0.94, respectively, when the cut-off score was 10 and above. In the present study, the Cronbach alpha value was at an acceptable level (0.81).

Driver Behavior Questionnaire: This study used the DBQ developed by Reason et al. which consists of 28 items and 4 sub-dimensions (aggressive violations, ordinary violations, errors and lapses). In this scale, drivers are asked to rate the frequency of possible situations they encounter while driving on a 6-point Likert scale (0=never to 5=always).³ The validity and reliability study in Türkiye was carried out by Lajunen and Özkan in 2004. The Cronbach alpha coefficient of internal consistency was found to be 0.81 for the errors, 0.86 for the violations, 0.56 for the lapses and 0.71 for the aggressive violations.²⁷

Impulsive Driver Behavior Scale: This scale was developed by Bıçaksız and Özkan in 2016.¹⁰ The scale consists of 42 items. Responses are scored using a 5-point Likert scale. The scale consists of 4 sub-dimensions (driver functional impulsivity, driver urgency, driver lack of premeditation, and driver lack of perseverance). The Cronbach's alpha internal con-

sistency coefficients of the sub-dimensions of the scale were calculated as 0.88, 0.84, 0.74 and 0.79, respectively.

Demographic and Driver Information Form:

The questions were formulated by the researcher. The questions in this form consisted of socio-demographic information, driving experience, accident history and health information about the participants.

Data were transferred to the SPSS v.25, where they were summarized using frequency tables and analyzed using correlation and hierarchical regression analysis.

RESULTS

DESCRIPTIVE FINDINGS

As illustrated in Table 1, the majority of participants (45.8%) had a high school diploma, 23.7% suffered from a chronic physical illness, and 1.7% had a chronic psychiatric illness. The most prevalent physical illnesses that the participants suffered from were diabetes, cardiovascular disease, hypertension and herniated disc. One participant had a diagnosis of substance use disorder and depressive mood disorder.

It was reported by approximately 30 per cent of the participants that they regularly use a medicine that has been recommended by a doctor. Meanwhile, 11.9 per cent of the participants reported that they regularly use a medicine that has not been recommended by a doctor (Table 1). Medicines used without a doctor's advice are painkillers and muscle relaxants.

A total of 45.8% of the participants reported having been involved in at least 1 active traffic accident within the preceding 3 years. Furthermore, 15.3% of the participants had received a traffic fine for driving under the influence of alcohol (Table 1). Five drivers received a single fine, three received two, and one received five.

FINDINGS ON SMOKING, ALCOHOL AND DRUG USE OF TAXI DRIVERS

The data indicates that 64.4% of the participants exhibited a regular smoking habit. The amount of cigarette use of the participants is shown in Table 2.

TABLE 1: Taxi drivers' descriptive findings		
Variables	n	%
Education level		
Primary	12	20.3
Secondary	8	13.6
High	27	45.8
Two year university	6	10.2
University	6	10.2
Chronic physical illness		
Yes	14	23.7
No	45	76.3
Chronic psychiatric illness		
Yes	1	1.7
No	58	98.3
Use of medicines with doctor's advice		
Yes	18	30.5
No	41	69.5
Use of medicines without doctor's advice		
Yes	7	11.9
No	52	88.1
Traffic accident (last 3 years)		
Yes	27	45.8
No	32	54.2
Traffic fine for drunk driving		
Yes	9	15.3
No	50	84.7

TABLE 2: Cigarette use of taxi drivers		
Amount of use	n	%
Three packs of cigarettes (60 branches)	2	3.4
Two packs of cigarettes (40 branches)	4	6.8
One and a half packs of cigarettes (30 branches)	1	1.7
One pack of cigarettes (20 branches)	26	44.1
Half a packet of cigarettes (10 branches)	5	8.5
Never	21	35.6

The mean score achieved by participants on the AUDIT-C scale was 4.11 (standard deviation=2.44), whereas the mean score on the DUDIT scale was 1.98 (standard deviation=4.71). The ratios of their alcohol and drug use risks are shown in Table 3. Accordingly, 5.1% of the participants exhibited high-risk use for alcohol, while 1.7% demonstrated high-risk use for drug. Furthermore, the most prevalent substances utilized by the participants (including pharmaceutical drugs of abuse) were cannabis, cocaine, volatile, as well as stomachal, painkillers and muscle relaxants.

TABLE 3: : Alcohol and drug use of taxi drivers		
Alcohol use	n	%
Low level of risk	14	23.7
Increased level of risk	4	6.8
High level of risk	3	5.1
Never	38	64.4
Drug use		
Low level of risk	11	18.6
Problematic use	6	10.2
High level of risk	1	1.7
Never	41	69.5

ROLE OF IMPULSIVE DRIVER BEHAVIORS AND ALCOHOL OR DRUG USE ON DRIVER BEHAVIORS

Prior to the hierarchical regression analyses, the correlational relationships between the variables were examined. Subsequently, a regression model was created. Accordingly, the age variable is included in the first stage of the model, the impulsive driver behaviour (i.e., driver functional impulsivity, driver urgency, driver lack of premeditation, and driver lack of perseverance) in the second stage and the alcohol or drug use in the last stage. This modelling was used separately for the four subscales of driver behaviour (i.e., errors, violations, lapses and aggressive violations). Analysis results are presented in Table 4 and Table 5.

The models related to the consumption of alcohol were statistically significant for the aggressive violations (see Table 4). The total variance explained was 0.39 (R^2_{adj}). Alcohol use was positively related to aggressive violations [95% confidence interval (CI) (-0.489, 0.853)].

In the models related to drug use, statistically significant relationships were found in the sub-dimensions of violations, lapses and aggressive violations (see Table 5). The total variance explained were 0.15 (R^2_{adj}) for violations, 0.13 (R^2_{adj}) for lapses and 0.29 (R^2_{adj}) for aggressive violations. Drug use was positively related to aggressive violations [95% CI (-0.079, 0.198)] and violations [95% CI (-0.195, 0.145)]. Additionally, it was negatively related to lapses [95% CI (-0.216, 0.094)].

The effect size was computed and reported in line with the criterion of Cohen ($f^2=R^2/I-R^2$).²⁸ The

TABLE 4: Hierarchical multiple regression analyses on driver behaviours for alcohol use

Errors					
	R ²	R ² Δ	FΔ	β	p value
Step 1: Age	0.00	-0.05	0.01	-0.02	0.950
Step 2: Impulsive driver behaviour	0.43	0.23	2.10		0.126
Driver functional impulsivity				0.185	0.491
Driver urgency				0.071	0.785
Driver lack of premeditation				0.361	0.197
Driver lack of perseverance				0.555	0.053
Step 3: AUDIT-C	0.43	0.17	1.65	0.073	0.210
Violations					
	R ²	R ² Δ	FΔ	β	p value
Step 1: Age	0.09	0.04	1.71	-0.294	0.208
Step 2: Impulsive driver behaviour	0.48	0.29	2.56		0.076
Driver functional impulsivity				-0.073	0.776
Driver urgency				0.650	<0.05
Driver lack of premeditation				0.382	0.157
Driver lack of perseverance				0.046	0.858
Step 3: AUDIT-C	0.48	0.24	1.99	-0.024	0.141
Lapses					
	R ²	R ² Δ	FΔ	β	p value
Step 1: Age	0.01	-0.05	0.05	0.052	0.828
Step 2: Impulsive driver behaviour	0.26	-0.01	0.97		0.469
Driver functional impulsivity				0.387	0.216
Driver urgency				0.293	0.330
Driver lack of premeditation				-0.520	0.110
Driver lack of perseverance				-0.188	0.540
Step 3: AUDIT-C	0.32	0.01	1.03	-0.293	0.450
Aggressive violations					
	R ²	R ² Δ	FΔ	β	p value
Step 1: Age	0.08	0.03	1.49	-0.276	0.240
Step 2: Impulsive driver behaviour	0.57	0.41	3.69		<0.05
Driver functional impulsivity				0.105	0.652
Driver urgency				0.497	<0.05
Driver lack of premeditation				-0.335	0.170
Driver lack of perseverance				0.098	0.672
Step 3: AUDIT-C	0.58	0.39	2.99	0.121	<0.05
Statistical significance value was accepted as 0.05.					

AUDIT-C: Alcohol Use Disorders Identification Test-Short Form

effect sizes were interpreted using Cohen's criteria, where values ranging from 0.01 to 0.04 were categorized as small effects, values between 0.05 and 0.14 were considered medium effects, and values exceeding 0.14 were classified as large effects. In the study, for alcohol use, the effect size on aggressive violations is at a large (*Cohen f*²=1.38). For drug use, the effect size on violations (*Cohen f*²=0.32), lapses (*Cohen f*²=0.28) and aggressive violations (*Cohen f*²=0.56).

DISCUSSION

The aim of this study was to examine the driving behaviour of Turkish taxi drivers on the basis of their frequency of alcohol and drug use (including medicine abuse) and impulsive characteristics, and to reveal the relationship between these variables. The findings revealed that alcohol use significantly influenced aggressive violations, while drug use affected violations, lapses, and aggressive violations.

TABLE 5: Hierarchical multiple regression analyses on driver behaviours for drug use

Errors					
	R ²	R ² Δ	FΔ	β	p value
Step 1: Age	0.01	-0.02	0.14	0.05	0.713
Step 2: Impulsive driver behaviour	0.19	0.11	2.39		0.050
Driver functional impulsivity				0.239	0.167
Driver urgency				0.279	0.067
Driver lack of premeditation				-0.114	0.510
Driver lack of perseverance				0.186	0.242
Step 3: DUDIT	0.19	0.09	1.97	-0.035	0.087
Violations					
	R ²	R ² Δ	FΔ	β	p value
Step 1: Age	0.01	-0.02	0.01	-0.015	0.909
Step 2: Impulsive driver behaviour	0.23	0.16	3.16		<0.05
Driver functional impulsivity				-0.016	0.923
Driver urgency				0.535	<0.001
Driver lack of premeditation				0.083	0.623
Driver lack of perseverance				-0.127	0.409
Step 3: DUDIT	0.24	0.15	2.65	0.070	<0.05
Lapses					
	R ²	R ² Δ	FΔ	β	p value
Step 1: Age	0.01	-0.02	0.06	0.032	0.814
Step 2: Impulsive driver behaviour	0.21	0.14	2.80		<0.05
Driver functional impulsivity				-0.202	0.235
Driver urgency				0.217	0.145
Driver lack of premeditation				-0.117	0.492
Driver lack of perseverance				0.136	0.383
Step 3: DUDIT	0.22	0.13	2.42	-0.101	<0.05
Aggressive violations					
	R ²	R ² Δ	FΔ	β	p value
Step 1: Age	0.03	0.01	1.72	-0.173	0.195
Step 2: Impulsive driver behaviour	0.35	0.29	5.64		<0.001
Driver functional impulsivity				-0.080	0.601
Driver urgency				0.527	<0.001
Driver lack of premeditation				-0.017	0.912
Driver lack of perseverance				0.044	0.755
Step 3: DUDIT	0.36	0.29	4.80	0.100	<0.001
Statistical significance value was accepted as 0.05.					

DUDIT: Drug Use Disorders Identification Test

Driving is a complex behavior encompassing numerous actions, and its relationship with psychological characteristics is a critical topic within traffic and transportation psychology. For instance, risky driving, committing traffic violations, or making errors in traffic are often evaluated as outcomes influenced by underlying psychological factors.²⁹ In psychology, psychological traits are recognized as key factors influencing thoughts, emotions, behaviors, and attitudes. Many studies within the subfield

of traffic and transportation psychology have identified psychological traits as significant variables. Notably, a considerable body of research has highlighted the need to explore psychological traits alongside situational factors or traffic climate.³⁰

In the present study, approximately 5% of taxi drivers reported high-risk alcohol use, and 10.2% reported a history of problematic drug use. Only one participant had a high-risk drug use. There is much previous research on the prevalence of alcohol and

drug use among drivers. Most of these studies have focused on the effect of alcohol and drug use on the occurrence of road crashes. For example, a study emphasized the need for cognitive evaluations and alcohol assessments alongside physical examinations to reduce the likelihood of traffic accidents among taxi drivers over 60 years of age.³¹ Research has also highlighted that simultaneous use of alcohol and drugs increases the likelihood of traffic accidents.¹⁹ In the present study, 45.8% of the drivers reported having been involved in an accident in the past 3 years, although it was unclear during interviews whether these accidents occurred under the influence of alcohol or drugs. Additionally, 15.3% of the drivers reported receiving traffic fines at least once for driving under the influence of alcohol.

A recent study in Iran, a country where alcohol consumption is prohibited, found that 24.4 per cent of young drivers had drunk alcohol at least once in the previous 6 months.³² Research suggests that, on average, about 15 per cent of the world's population drives under the influence of alcohol, despite knowing that they are over the legal limit. In the present study, 15.3% of taxi drivers reported having received at least one ticket for driving under the influence of alcohol. This rate underscores the need for forensic toxicological assessments, using biological materials (e.g., hair samples), in recruitment processes. Such tests should also assess drug use beyond alcohol to ensure traffic safety.

Globally, increasing alcohol and substance use rates, particularly among younger populations, have also been reported in Türkiye.³³ Investigating drivers' alcohol and substance use habits is a critical issue for traffic safety. Numerous studies have employed self-reports and forensic toxicological assessments to explore this topic.³⁰ Professional drivers, who are a particularly important target group for such research, have been shown to exhibit some differences in driving behaviors compared to non-professional drivers.³⁴ In fact, it is a general expectation that professional drivers exhibit less risky driving behaviours because they have more driving experience and drive without being involved in accidents because they have obligations to the organizations they work for. On the other hand, situations that endanger traffic safety may

be encountered due to factors such as these drivers being more confident in themselves than they should be and engaging in risky driving behaviours, anxiety about catching up due to the work environment, and continuing to work without getting enough rest.⁷

Various legal regulations address alcohol and substance use among drivers. According to Article 48 of Türkiye's Highway Traffic Law No. 2918, it is prohibited for individuals who have consumed narcotic or stimulant substances or those under the influence of alcohol, impairing their ability to drive safely, to operate a vehicle on the road. The law stipulates that drivers found to have a BAC above 0.50 are subject to administrative fines, and their driver's license is revoked for 6 months. For professional drivers, the legal BAC limit is lower, set at 0.21. Beyond alcohol and illegal substances, the misuse or unconscious consumption of medical drugs by drivers is an important issue that requires attention. Driving under the influence of medications is often overlooked and difficult to detect. In Türkiye, toxicological testing for drivers is typically conducted only if they are involved in an accident resulting in injury or death. This highlights the critical need for regular screening programs and random workplace substance testing, especially for professional drivers. A noteworthy finding of this study is that approximately 12% of drivers reported regular use of medical drugs without a doctor's recommendation. Previous studies have also reported that 55.6% of Turkish professional drivers use painkillers without medical advice to stay alert or increase focus.⁴ Alongside medical drugs, smoking is also a common habit among drivers, often used to improve focus.⁴

Research findings in the literature highlight the importance of various factors influencing driver behavior. For instance, a qualitative study on taxi drivers in Iran identified four main themes in the context of safe driving: traffic chaos, social prestige, economic pressure, and job satisfaction.³⁵ Previous research in Türkiye has shown that taxi drivers in large cities experience significant stress due to traffic congestion, often resorting to caffeine-containing beverages or medications to stay awake during long working hours.⁴

There are some limitations to this research. As data were collected by self-report method, social desirability may have influenced the answers given. In addition, taxi drivers may have concealed their experiences of substance use other than alcohol because it is a legal issue. The small sample size may also be a disadvantage in terms of generalizing the results. At this point, the difficulties in reaching the sample group should be taken into account.

CONCLUSION

In conclusion, the findings suggest that alcohol use significantly influences aggressive violations, whereas drug use influences both violations and lapses, as well as aggressive violations. With respect this, the characteristics of alcohol, drug and medicine use by drivers are important issues that need to be analyzed from a road safety perspective. As shown in this study, alcohol and substance use and impulsive behaviour characteristics of taxi drivers, who are one of the professional vehicle drivers, may be effective on violation and negligence behaviours. It is especially important to evaluate taxi drivers psychologically and toxicologically during the recruitment

process and to determine whether they are suitable for the job or not. Furthermore, the widespread implementation of random workplace drug testing can have a positive impact on traffic safety, both in terms of detection and prevention.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

This study is entirely author's own work and no other author contribution.

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