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## Effectiveness of Penitentiary Psychoeducational Interventions in Road Safety

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### ABSTRACT

**Background/Aim:** The number of convictions related to crimes against road safety continues to increase, with more than half being caused by driving under the influence (DUI) of alcohol or drugs. In Spain, offenders for crimes against road safety have been widely sentenced to community service orders. Additionally, the penitentiary institution has implemented two intervention programmes, TASEVAL (awareness and re-education) and PROSEVAL (re-education and psychotherapeutic). A field study was designed to estimate the effectiveness of the TASEVAL and PROSEVAL intervention programmes in the reduction of the recidivism rate and drug and alcohol use. **Method:** A total of 57,532 offenders for crimes against road safety (37,556 sentenced to a community service order of up to 60 days' duration and 19,976 to a community service order of over 60 days' duration and the TASEVAL intervention programme) were followed up in relation to recidivism. And a total of 5,765 (5,117 sentenced to a community service order of over 60 days' duration and 648 to a community service order of over 60 days' duration and the PROSEVAL intervention programme) were also followed up in relation to recidivism. 29 attendees on the TASEVAL intervention programme and 32 attendees on the PROSEVAL intervention programme were assessed pre- and post-intervention in unhealthy alcohol use and problematic drug use. **Results:** The results showed a significant association between the participation in the TASEVAL and PROSEVAL intervention programmes and non-recidivism. Succinctly, compared to community service orders, participation in these programmes increases the non-recidivist rate for the TASEVAL and PROSEVAL intervention programmes by 14.6% and 58.4% respectively. Regarding substance and alcohol use, the TASEVAL programme showed a significant reduction in alcohol and drug use after the implementation of the programme. However, the PROSEVAL programme did not reveal a significant effect on alcohol and drug use (no therapeutic effect). **Conclusions:** The present study supports the effectiveness of specific intervention programmes for road traffic offenders in the reduction of recidivism. Additionally, these intervention programmes (though not all of them) may have a mitigating effect on the alcohol and drug use mediators of recidivism.

## La eficacia de las intervenciones psicoeducativas penitenciarias en seguridad vial

### RESUMEN

**Antecedentes/Objetivo:** El número de condenas relacionadas con delitos contra la seguridad vial sigue aumentando, con más de la mitad causadas por conducir bajo los efectos (DUI) del alcohol o drogas. En España, los infractores por delitos contra la seguridad vial han sido ampliamente condenados a trabajos en beneficio de la comunidad. Además, la institución penitenciaria ha implementado dos programas de intervención, TASEVAL (concienciación y re-educación) y PROSEVAL (re-educación y psicoterapia). Se diseñó un estudio de campo para estimar la efectividad de los programas de intervención TASEVAL y PROSEVAL en la reducción de la tasa de reincidencia y el uso de drogas y alcohol. **Método:** Se hizo un seguimiento de un total de 57,532 infractores por delitos contra la seguridad vial (37,556 condenados a trabajos en beneficio de la comunidad de hasta 60 jornadas y 19,976 a trabajos en beneficio de la comunidad de hasta 60 jornadas y el programa de intervención TASEVAL) en relación con la reincidencia. Y un total de 5,765 (5,117 condenados a trabajos en beneficio de la comunidad de más de 60 jornadas y 648 a trabajos en beneficio de la comunidad de más de 60 jornadas y el programa de intervención PROSEVAL) también se siguieron en relación con la reincidencia. Se evaluaron 29 asistentes al programa de intervención TASEVAL y 32 asistentes al programa de intervención PROSEVAL antes y después de la intervención en el uso problemático de alcohol y drogas. **Resultados:** Los resultados mostraron una asociación significativa entre la participación en los programas de inter-

#### Palabras clave:

Educación en seguridad vial  
Intervención para conductores  
Delitos contra la seguridad vial  
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vención TASEVAL y PROSEVAL y la no reincidencia. En resumen, en comparación con los trabajos en beneficio de la comunidad, la participación en estos programas aumenta la tasa de no reincidencia para los programas de intervención TASEVAL y PROSEVAL en un 14.6% y 58.4%, respectivamente. En cuanto al uso de sustancias y alcohol, el programa TASEVAL mostró una reducción significativa en el consumo de alcohol y drogas después de la implementación del programa. Sin embargo, el programa PROSEVAL no reveló un efecto significativo en el uso de alcohol y drogas (sin efecto terapéutico). *Conclusiones:* El presente estudio apoya la efectividad de programas de intervención específicos para infractores de tráfico en la reducción de la reincidencia. Además, estos programas de intervención (aunque no todos) pueden tener un efecto atenuante en los mediadores de consumo de alcohol y drogas en la reincidencia.

Criminal policy measures in the area of road safety have continued to evolve in a society where risks on the roads remain present. The World Health Organization has estimated that worldwide 1.19 million people die each year in road traffic accidents and between 20 and 50 million are seriously injured (World Health Organization, 2023). In Europe, the European Commission has estimated around 20,600 road accidents fatalities in 2022, an increase of 3% on 2021 (European Commission, 2023) and alcohol-related road fatalities accounted for 25% of all deaths (European Commission, 2024). According to the Spanish Directorate of Traffic (Dirección General de Tráfico [DGT, 2023]), the figures have increased recently. Thus, in 2022, road accident fatalities (1,746) rose by 213 compared to the previous year, as well as serious injuries (8,502), an increase of 780, which are alarming data. Most road accidents are caused by human behaviour, based on drivers' own decisions (Montoro et al., 2000). The main factors involved include distractions, excessive speed, and driving under the influence (DUI; DGT, 2023).

Different studies have assessed the effectiveness of the penalty point system in reducing traffic accidents (Beke & Blomeyer, 2016; Novoa et al., 2010). The penalty point system widespread use in Spain and other European countries is based on the assumption that this measure is effective in preventing drivers from committing traffic offences and ensuring greater security. Since the most significant reform in road safety came into force (Ley Orgánica 15/2007, de 30 de noviembre, por la que se modifica la Ley Orgánica 10/1995, de 23 de noviembre, del Código Penal en materia de seguridad vial) in order to reduce the aforementioned behaviours, the number of convictions has increased exponentially. In line with the Spanish General Prosecutor's Office (Fiscalía General del Estado [FGE, 2023]), in 2022, 104,660 convictions were handed down for road offences, accounting for 36% of all convictions, with even higher figures than in previous years, and the majority caused by DUI.

Due to this phenomenon, criminal policies regarding road safety continued to evolve, with a further reform of the Spanish Criminal Code (Ley Orgánica 5/2010, de 22 de junio, por la que se modifica la Ley Orgánica 10/1995, de 23 de noviembre, del Código Penal). As a result of this, there are currently three types of penalties that can be served: prison sentences, fines (economic penalties), and community service. In this regard, judges may choose one of the three, in conjunction with the penalty of deprivation of the right to drive. Consequently, the Spanish Code allows prison sentences to be reserved as the most serious penalty for specific cases. In addition to this reform a further update of the Criminal Code (Ley Orgánica 1/2015, de 30 de marzo, por la que se modifica la Ley Orgánica 10/1995, de 23 de noviembre, del Código Penal) concerning the application of custodial sentences was developed, allowing prison sentences to be suspended on the condition of participation in Road Safety Education and Driver Intervention (RSE&DI) programmes. The introduction of all these policies has seen an increase in community service orders, with a total number of 24,001, in addition to 486 RSE&DI programmes, being handed out in 2019 in conjunction with the conditional suspension of custodial sentences (FGE, 2020). In 2021, 581 RSE&DI programmes (FGE, 2022) and in 2022, 599 RSE&DI programmes were conducted (FGE, 2023). Once again, these figures are higher than in previous years.

In order to comply with a large number of community service orders for crimes against road safety, as a result of Instruction

1-2/2010 from the *Secretaría General de Instituciones Penitenciarias* (2010), the Prison Administration created a specific road safety intervention programme to address sentences through community service orders (with a duration of up to 60 days), the TASEVAL, in collaboration with the DGT and the Research Institute on Traffic and Road Safety of the University of Valencia (INTRAS) (Montoro et al., 2010). It was based on an approach targeting re-education and awareness-raising, with the aim of making convicts or sentenced individuals aware of the consequences of their behaviour. Likewise, in order to handle more serious sentences through community service orders (lasting more than 60 days) or suspended prison sentences, another programme (PROSEVAL) has been in use since 2016 (Lijarcio et al., 2016), based on a psychotherapeutic approach with the aim of reintegrating those convicted and promoting a change in maladaptive behaviours while driving.

### Recidivism in Road Safety Interventions for Persistent Traffic Offenders

Over time it has been proven that in subjects with prior crimes against road safety, as well as drivers with previous fines or penalty points, the probability of future offences increases (Elliott et al., 2000; Sagberg & Ingebrigtsen, 2018). Martí-Belda et al. (2019) showed the importance of alcohol-related issues among traffic offenders, especially among those disqualified by a court conviction. Likewise, alcohol in relation to other psychological disorders as signs of paranoid, antisocial, impulsive, borderline, and anxious personality traits can contribute to explaining this criminal behaviour (Escamilla-Robla et al., 2022). Therefore, alcohol abuse is a predictor of recidivism in road safety offences (Castro et al., 2023; Le Lièvre et al., 2019), as are consumption disorders paired with reckless driving (Padilla et al., 2018). In regard to gender groups, the prevalence of predicting drivers' risk perception in relation to recidivism differs between male and female drivers (Lijarcio et al., 2022). The courts have been using different punitive measures to tackle these offences. Positive effects in reducing recidivism have been found for the impounding of drink-driving offenders' vehicles (permitted in some states), particularly in relation to recidivism for speeding offences (Watson et al., 2020). In this study, lower rates of offence were seen during the impoundment period compared to pre-impoundment, post-licence restoration, and post-ban periods. In parallel, consistent evidence points towards the intensity of DUI enforcement—such as prison sentences and the suspension of licences—as the strongest deterrent to potential drunk drivers, accounting for more than 75% of the impact on a driver's decision to drink and drive (Yao et al., 2021). In comparison, the effect of ignition interlock programmes—which are relatively short—on the involvement of DUI offenders in accidents is substantially limited; but those covering all offenders have proved to be an effective countermeasure against driving while impaired, reducing the number of impaired drivers in fatal crashes (Teoh et al., 2021).

One example in particular (McCartt et al., 2018) indicated that states which apply more stringent interlock requirements for first-time offenders are able to significantly reduce DUI recidivism. Beck et al. (2020) determined that those with more serious drinking patterns and at greater risk of recidivism are more likely to embrace the positive

aspects of the interlock, which promotes awareness of and reminders to avoid drinking and driving. A Dutch alcohol interlock programme showed effectiveness in reducing recidivism within a multi-component approach in which a built-in rehabilitation programme and extensive behavioural feedback on alcohol use play an important role (Blom & Blokdijk, 2021). What is clear, in terms of driving while impaired, is that the early identification of DUI recidivism may be important in preventing recurrent DUI behaviour in subjects at higher risk of being involved in crashes than first-time offenders (Nochajski & Stasiewicz, 2006). Chaudhary et al. (2011) observed that after three years of follow-up, the rate of recidivism for DUI convictions was recorded at 10.4% after their first disposition. Apart from alcohol, tobacco use has also been shown as a variable affecting recidivism. Beccegato et al. (2021) suggested that heavy smoking may be a predictor of risky alcohol intake leading to DUI. Smoking habits appeared to be related to a judgment of unfitness to drive, thus suggesting a possible relationship between tobacco use and other substance use disorders. This data suggests the advisability of evaluating subjects with DUI paying attention because tobacco could hint at a possible substance use disorder or tendency toward risky driving behaviour. In parallel, Bouffard et al. (2010) studied different types of interventions, establishing a follow-up period of 12 to 18 months.

In this study, rates of recidivism due to new arrests for any offence ranged from 27.0% to 57.1%. However, new arrests for driving under the influence of alcohol varied between 6.7% and 18%. All in all, these rates may indicate the suitability of psychotherapeutic programmes and emphasis on careful driving in road safety re-education, awareness-raising initiatives, and the process of reissuing driving licences, considering that it is evident that there are benefits in developing psychoeducational intervention programmes to reduce recidivism. Nevertheless, despite these timely interventions, the effectiveness of road safety intervention programmes is barely demonstrated. The Subdirección General de Medio Abierto y Penas y Medidas Alternativas promoted the study of the efficacy of TASEVAL and PROSEVAL intervention programmes in collaboration with the European University of Valencia (EUV), in order to provide more evidence for evaluations of the implementation of re-education and re-socialisation interventions in road safety. The first objective of this study was to assess the effectiveness of RSE&DI programmes by analysing the data on the recidivism of crimes against road safety of those convicted individuals who underwent the interventions compared to a control group. The second objective aimed to study the changes in alcohol and drug consumption in the sample of participants who attended the TASEVAL and PROSEVAL programmes. The third objective was to analyse the sociodemographic, criminological, and accident profile of road offenders sentenced to community services or prison sentence suspensions.

## Method

### Participants

For the first objective, recidivism data were available for a total of 57,532 participants in community service orders of up to 60 days' duration (CS-60). One group completed the TASEVAL programme ( $n = 19,976$ ), and another group performed different community services, unrelated to road safety ( $n = 37,556$ ). In parallel, recidivism data were analysed for a total of 5,765 participants with community service orders of over 60 days or suspended sentences (CS+60). One group completed the PROSEVAL intervention programme ( $n = 648$ ), and another group performed different, non-road safety-related community service ( $n = 5,117$ ).

For the second and third objectives of the study, we had a total of 805 participants (87% male,  $M_{age} = 38.16$ ,  $SD = 12.51$ ) who were

assigned, on the one hand, to community service orders lasting up to 60 days (CS-60;  $n = 657$ ), participating in the TASEVAL intervention programme (87% men,  $M_{age} = 38.30$ ,  $SD = 12.70$ ); and, on the other hand, to community service orders lasting more than 60 days or prison suspensions (CS+60;  $n = 148$ ), participating in the PROSEVAL intervention programme (90% men;  $M_{age} = 39.66$ ,  $SD = 11.59$ ). Regarding the second objective, we only obtained post-test scores from 32 participants (96% men;  $M_{age} = 39.38$ ,  $SD = 12.92$ ).

Table 1 shows the socio-demographic characteristics of the total and subsamples.

**Table 1.** Sociodemographic Characteristics of Offenders by Crimes against Road Safety

	CS-60 ( $n = 657$ )	CS+60 ( $n = 148$ )	Full sample ( $n = 805$ )
Age (years): $M(SD)$	37.89 (12.7)	39.34 (11.5)	38.16 (12.5)
Gender (man): $n(\%)$	568 (86.5)	132 (89.2)	700 (87.0)
Marital status: $n(\%)$			
Single	322 (49.0)	62 (41.9)	384 (47.7)
Married	198 (30.1)	56 (37.8)	254 (31.5)
Divorced/widowed	112 (17.0)	22 (14.9)	134 (16.6)
Missing data	25 (3.8)	8 (5.4)	33 (4.1)
Children (yes): $n(\%)$	333 (50.7)	83 (56.1)	416 (55.8)
Highest educational level: $n(\%)$			
No schooling	119 (18.1)	41 (27.7)	160 (19.9)
High school	410 (62.4)	83 (56.1)	493 (61.2)
Higher education	94 (14.3)	16 (10.8)	110 (13.7)
Missing data	34 (5.2)	8 (5.4)	42 (5.2)
Employment: $n(\%)$			
Unemployed	215 (32.7)	53 (35.8)	268 (33.3)
Employed	257 (39.1)	48 (32.4)	305 (37.9)
Self-employed	60 (9.1)	16 (10.8)	76 (9.4)
Retired	31 (4.7)	6 (4.1)	37 (4.6)
Other	52 (7.9)	12 (8.1)	64 (7.9)
Missing data	42 (6.4)	13 (8.8)	55 (6.8)

Note. CS-60 = community service up to 60 days; CS+60 = community service of more than 60 days.

This study procedure was approved by the Deputy Directorate-General of Open Regime and Alternative Measures and European University of Valencia (020020190007). All participants were properly informed about the study and consented to participate complying with the ethical guidelines set out in the Declaration of Helsinki (2013).

### TASEVAL Intervention Programme

The TASEVAL programme consists of a set of awareness and re-education activities and theoretical contents, directly related to the nature of the offence committed, that is, concerning traffic safety. It is administered to drivers sentenced to community services for less than 60 days for crimes against road safety (excessive speeding, driving with low levels of alcohol and drugs, driving without a license, that is, minor crimes against road safety). The general objective of the intervention is to reduce recidivism. The specific objectives are to raise awareness about the problem and the direct consequences of a driver's behaviour in traffic accidents, and to create a predisposition towards changing inadequate beliefs. It consists of 8 face-to-face sessions of 4 hours each, divided into 3 phases: a reception phase, in which the TASEVAL programme is presented along with an explanation of basic aspects; another theoretical/practical training phase, where knowledge of awareness about traffic accidents is given and aspects related to alcohol/drugs and driving, speed, reckless driving, distractions, restraint systems, social values on the road, and coping resources in certain situations

during driving are explained; and finally, an exit phase, where conclusions and farewells are established (Montoro et al., 2010).

### PROSEVAL Intervention Programme

The PROSEVAL programme was developed with the purpose of establishing a road safety intervention within the set of specific programmes developed in the field of sentencing alternatives to imprisonment. This programme is administered to those drivers sentenced to community services for more than 60 days or suspended imprisonment (higher rates of speeding, driving under high rates of alcohol and drugs, driving without licence i.e., serious crimes against road safety or re-offenders of other crimes against road safety). The essential purpose is to reintegrate individuals convicted of the most serious crimes against road safety and reduce their recidivism. The intervention is divided into two phases: the first phase, with an educational focus consisting of the TASEVAL programme, and the second phase, with a psychotherapeutic approach, including a set of techniques with a cognitive-behavioural approach aimed at intervening with underlying mental processes at a cognitive, emotional, and behavioural level (Ruiz et al., 2012). This last phase consists of 42 hours, distributed in weekly sessions of 2 hours each, divided into three parts: initiation, with an individual interview to get to know different aspects of the participants; a second part, consisting of 8 modules in 19 sessions focusing on the initial motivation for change, decision-making, risk perception, emotions, impulsivity, psychophysiology, and human safety; it also includes social skills on the road and a review of thoughts, emotions, and behaviours, ending with a summary of everything learned; the last part includes a follow-up session one month after the end of the programme (Lijarcio et al., 2016).

### Variables and Measurement Instruments

#### Socio-Demographic Variables

The following socio-demographic information was collected using an ad-hoc questionnaire: age, gender (male or female), marital status (single, in a stable relationship, divorced, widowed), number of children, education level (no schooling, primary education, secondary education, higher education), and employment status (unemployed, student, employed, self-employed, retired).

#### Criminal Variables

The following information on accident rates and criminal records was collected using an ad-hoc questionnaire: traffic accidents (number and causes), more than one offence recorded for the same event (yes or no), first crimes against road safety (primary or recidivist), previous attendance on a road safety programme (yes or no), criminal record other than for crimes against road safety (yes or no), knowledge of the offence (yes or no), and administrative offence records (accumulation of driving licence penalty points—yes or no; disqualification of driving licence—yes or no; and type of traffic infractions).

#### Alcohol Use Disorders Identification Test (AUDIT; World Health Organization et al., 2001)

The AUDIT consists of a 10-item Likert scale (from 0 = *never* to 4 = *daily or almost daily*) that assesses the level of unhealthy alcohol use (e.g., “How often during the last year have you found that you were not able to stop drinking once you had started?”). Scores in the range 0-7 refer to abstinence or low risk of drinking, from 8 to 15 to alcohol use in excess, between 16 and 19 to harmful and

hazardous drinking, and 20 or higher to alcohol dependence. The reported reliability, test-retest (stability) was excellent,  $r = .86$ .

#### Drug Abuse Screening Test (DAST-10; Skinner, 1982)

The DAST-10 is a 10-item scale in a yes (1) or no (0) response format that assesses problematic drug use (e.g., “Have you used drugs other than those required for medical reasons?”). An overall score (from 0 to 10) is obtained by adding up the scores on all items. The higher the score, the greater the problem of drug use/dependence (0 = low risk/abstinence; 1-2 = risky consumption; 3-5 = harmful; 6+ = dependence). We used the Spanish validated version (Pérez et al., 2010), reporting an excellent reliability,  $\alpha = .89$ .

### Design and Procedure

For the first objective, a longitudinal design was employed, with a quantitative retroactive perspective, using the raw data provided by the Subdirección General de Medio Abierto y Penas y Medidas Alternativas. Use was made of data on people sentenced for crimes against road safety who attended community service (TASEVAL and PROSEVAL during 2016-17) and data on their recidivism until April 2019, all of them being study groups. As control groups, data about people who had been convicted of crimes against road safety and who had performed different community service, unrelated to road safety—on the same dates—were used (matched groups). To carry out this part of the study, a data processing, custody, and protection protocol was maintained, agreed, and duly signed by both entities (Subdirección General de Medio Abierto y Penas y Medidas Alternativas and EUV).

For the second and third objective, a sample of 805 subjects was obtained from Instituciones Penitenciarias [Spanish Penitentiary Institution] of people convicted of crimes against road safety across the entire national territory where community service sentences are executed, selected by agreement with the Subdirección General de Medio Abierto y Penas y Medidas Alternativas. The selection criteria were those sites that involved the TASEVAL and/or PROSEVAL programmes with the largest number of attendees, located in Algeciras, Alicante, Almería, Cáceres, Castellón, Ciudad Real, Córdoba, Coruña, Huelva, Ibiza, La Rioja, Las Palmas de Gran Canaria, Madrid (Alcalá de Henares-V. Kent), Málaga, Navarra, Palma de Mallorca, Pontevedra, Salamanca, Sevilla, Morón de la Frontera, Tenerife, and Valencia.

Participants served their sentence for crimes against road safety. They were distributed in two differentiated groups, one drawn from those serving 60 days as community service and another one serving over 60 days as community service or receiving suspensions of custodial sentences. Once the sample was selected and the suitable instruments were chosen and assembled in a protocol, they were sent to the Subdirección General de Medio Abierto y Penas y Medidas Alternativas to centralise and distribute them to the participants according to the established guidelines and deadlines. At first, before starting the road safety interventions or the community services only, the protocol was passed on to the participants and with this the sociodemographic, criminological, and accident profile was extracted.

To achieve the second objective, the previous sample was used, but only with those attending the TASEVAL and PROSEVAL programmes, obtaining fewer subjects in this case. We worked from a longitudinal design of repeated measures, pretest and post-test, before and after the intervention, to evaluate the change produced in the variables measured in this study on alcohol and drug consumption. All these protocols were returned to the EUV research team to proceed with data processing.

## Data Analysis

First, the socio-demographic and criminological data were descriptively analysed (mean, standard deviation, frequency, percentage). The internal consistency of the scales was established by calculating Cronbach's alpha coefficient, being adequate above .80 in basic research and above .90 in applied settings (Nunnally, 1978). Associations between criminological data and type of community service (community service orders with a duration of up to 60 days [CS-60] or more [CS+60]) were examined with a Chi-squared Test for Independence ( $\chi^2$ ; Fisher's exact test). This test is used to explore the association between two categorical variables. Effect size was measured with phi and the magnitude of the effect with the Effect Incremental Index (EII; Arias et al., 2020) by applying the formula  $1 - ((p_1 - p_2)/p_1)$  where  $p_1$  is the observed probability of recidivism after the CS-60 or CS+60 intervention programme and  $p_2$  the probability of recidivism after the PROSEVAL or TASEVAL intervention programme. The effect is interpreted as significant if the lower limit of the 95% CI is above .05. A paired samples *t*-test was conducted in order to study the efficacy of the TASEVAL and PROSEVAL programmes on the participants' AUDIT and DAST-10 scores. Scores before and after the interventions were compared on AUDIT (hazardous alcohol use) and DAST-10 (problematic drug use). Cohen's *d* with Lipsey and Wilson's (2001) formula for repeated measures was used as an estimator of effect size, estimating the magnitude with *r* a derivation of the BESD and the inefficacy with the probability of a superiority score (Rosenthal & Rubin, 1982; Vilariño et al., 2022). Finally, the effect of the TASEVAL and PROSEVAL programmes compared to CS-60 and CS+60, respectively, on participants' recidivism was studied using a Chi-squared Test of Independence as well ( $\chi^2$ ; Fisher's exact test).

Specifically, this test was used to explore the relationship between recidivism (yes or no) and interventions (TASEVAL/PROSEVAL or CS-60/CS+60).

## Results

### Criminal Profile

Regarding the criminological profile of the participants, 429 (53.5%) were convicted for driving under the influence of alcohol or drugs, 331 (41.3%) for offences related to driving without a licence, and 42 (5.2%) for speeding offences, reckless driving, or for refusing to take a drug test. Additionally, 93 (11.6%) had committed more than one crime against road safety when they were sentenced to a community service order at the time of the study, 280 participants (37.0%) were recidivist road safety offenders, while 263 (35.0%) had received a sentence for other types of offences, and 83 participants (11.0%) had received a sentence for gender violence. Another interesting fact was that 103 participants (13.8%) had no knowledge of the offence and had criminal records for offences that were not related to crimes against road safety. Moreover, it was the first time that 90 participants (11.9%) had been ordered to participate in a road safety programme.

From the full sample, 430 participants (57.0%) had been involved in traffic accidents, of whom 47.1% were involved in one accident, 33.0% in two, and almost 20.0% in three or more traffic accidents as drivers. Participants reported that alcohol/drug use (23.3%) and distractions (13.4%) were the two main causes of such accidents, followed by external causes (7.5%), personal problems (4.2%), recklessness/aggressiveness (2.7%), inadequate speed (1.0%), sleeping at the wheel (0.4%), and other causes (3.1%). Three hundred sixty (49.0%)

**Table 2.** Criminological Data of Offenders by Crimes against Road Safety

	CS-60	CS+60	$\chi^2$	<i>p</i>	$\phi$
	<i>n</i>	<i>n</i>			
More than one crime in the same wrongful act					
Yes	61	32	16.62	< .001	.15
No	593	116			
First road safety crime					
Primary	417	61	22.65	< .001	.18
Recidivist	205	85			
Previous assistance to a road safety programme					
Yes	65	25	6.46	.011	-.10
No	556	108			
Other (different to road safety crime) criminal records					
Yes	190	73	26.11	< .001	-.19
No	427	61			
Knowledge of the road safety crime					
Yes	534	111	0.78	.377	.04
No	81	22			
Previous loss of driving licence points					
Yes	286	74	3.24	.072	-.07
No	318	57			
Previous loss of validity of driving licence					
Yes	174	56	10.03	.002	-.12
No	427	72			
Type of traffic infractions for previous loss of driving licence					
Alcohol/drugs	218	52	0.99	.910	.04 <sup>1</sup>
Speed	18	6			
Reckless driving	13	2			
Others	89	24			
More than one infraction	142	36			

Note. CS-60 = community service up to 60 days; CS+60 = community service of more than 60 days; <sup>1</sup>Cramer's V

**Table 3.** Effects of TASEVAL Intervention Programme on Unhealthy Alcohol and Problematic Drug Use

Variable	$M_{\text{pre-TASEVAL}}$	$M_{\text{post-TASEVAL}}$	$t$	$p$	$d$ [95% CI]
Unhealthy alcohol use ( $n = 29$ )	9.29	5.64	-2.51	.018	-0.24 [-0.37, -0.11]
Problematic drug use ( $n = 28$ )	2.29	1.50	-2.17	.039	-0.29 [-0.43, -0.15]

Note. 95% CI = 95% confidence interval.

**Table 4.** Effects of PROSEVAL Intervention Programme on Unhealthy Alcohol and Problematic Drug Use

Variable	$M_{\text{pre-PROSEVAL}}$	$M_{\text{post-PROSEVAL}}$	$t$	$p$	$d$ [95% CI]
Unhealthy alcohol use ( $n = 32$ )	9.49	7.56	-1.84	.075	-0.22 [0.10, 0.34]
Problematic drug use ( $n = 30$ )	1.80	1.40	-0.99	.332	-0.12 [0.16, 0.42]

Note. 95% CI = 95% confidence interval.

participants had previously received penalty points on their driving licence, and 230 (31.6%) had had their driving licence withdrawn. Participants reported that the types of infractions for which they had received penalty points were for alcohol/drug use ( $n = 270$ , 45.0%), an accumulation of more than one traffic offence ( $n = 178$ , 29.7%), excessive speed ( $n = 24$ , 4.0%), distractions ( $n = 20$ , 3.3%), reckless driving ( $n = 15$ , 2.5%), driving without wearing a seat belt ( $n = 12$ , 2.0%), failure to obey other traffic rules ( $n = 7$ , 1.2%), and other causes ( $n = 74$ , 12.3%).

As shown in Table 2, there was a statistically significant association between the length of community service (CS-60 or CS+60) and the presence of more than one offence in the same wrongful act ( $\chi^2 = 16.62$ ,  $p < .001$ ;  $\phi = .15$ ), the first crimes against road safety ( $\chi^2 = 22.65$ ,  $p < .001$ ;  $\phi = .18$ ), previous attendance on a road safety programme ( $\chi^2 = 6.46$ ,  $p = .011$ ;  $\phi = -.10$ ), the existence of criminal records other than crimes against road safety ( $\chi^2 = 26.11$ ,  $p < .001$ ;  $\phi = -.19$ ), and prior disqualification from driving ( $\chi^2 = 10.03$ ,  $p = .002$ ;  $\phi = -.12$ ).

### Effects of the TASEVAL/PROSEVAL Intervention Programmes

The results showed (see Table 3) significant effects of the TASEVAL programme in reducing alcohol use. This emphasises that the participation in the TASEVAL intervention programme reduces alcohol use by 11.9% ( $r = -.119$ ). Qualitatively, the population went from alcohol use in excess (8-15; World Health Organization et al., 2001) to an area of low risk/abstinence (0-7). Nevertheless, the model intervention error was 40.5%, PSS = .405, i.e., the probability of attendants on the TASEVAL programme with a post-intervention superiority score over the mean pre-intervention population is .405. In other words, around 40.0% of attendants continue to use alcohol after intervention compared to the pre-intervention mean. Likewise, the results also showed (see Table 3) significant effects of the TASEVAL programme in reducing problematic drug use. This shows that participation in the TASEVAL intervention programme reduces problematic drug use by 14.4% ( $r = -.144$ ).

As for the PROSEVAL intervention programme, the results exhibited a non-significant effect in both alcohol and drug use (see Table 4). It is worth noting that post-intervention the offenders,  $M = 7.56$  [5.46, 9.66], are in the region of alcohol use in excess (the 95% confidence interval has 8-15) and  $M = 1.40$  [0.77, 2.03] in the level risky drug use (1-2 risky consumption).

### Incremental Effect of TASEVAL/PROSEVAL Intervention Programmes on the Reduction of Recidivism

A significant association between recidivism (yes vs. no) and the intervention programme (TASEVAL and CS-60 vs. CS+60) was observed (see Table 5). The magnitude of the effect, incremental in the reduction of recidivism, was .146 (EII = .146), i.e., the TASEVAL

intervention programme increases the non-recidivist rate for 14.6%, 95% CI [14.3%, 14.9%]. Likewise, a significant association between recidivism (yes vs. no) and the intervention programme (PROSEVAL and CS+60 vs. CS-60) was observed (see Table 6). The magnitude of the effect, incremental in the reduction of recidivism, was .584 (EII = .584) i.e., PROSEVAL intervention programme increases the non-recidivist rate for 58.4%, 95% CI [57.1%, 59.7%].

**Table 5.** Frequencies and Chi-square Results for Intervention (TASEVAL and CS-60 vs. CS+60) and Recidivism (yes vs. no) ( $N = 57,532$ )

	TASEVAL $n$ (%)	CS-60 $n$ (%)	$\chi^2$
Recidivists	2,470 (12.3)	5,424 (14.4)	47.37***
Non-recidivists	17,506 (87.6)	32,132 (85.5)	
Total	19,976 (100.0)	37,556 (100.0)	

Note.  $\chi^2$  = chi-square test; CS-60 = community service up to 60 days.  
\*\*\* $p < .001$ .

**Table 6.** Frequencies and Chi-square Results for Intervention (PROSEVAL and CS+60 vs. CS-60) and Recidivism (yes vs. no) ( $N = 5,765$ )

	PROSEVAL $n$ (%)	CS+60 $n$ (%)	$\chi^2$
Recidivists	43 (6.6)	827 (15.9)	39.99***
Non-recidivists	605 (93.3)	4,290 (84.0)	
Total	648 (100.0)	5,117 (100.0)	

Note.  $\chi^2$  = chi-square test; CS+60 = community service of more than 60 days  
\*\*\* $p < .001$ .

Comparatively, the PROSEVAL intervention programme increases the non-recidivist rate (58.4%) to a significantly higher level (CIs do not overlap) than the TASEVAL intervention programme (14.6%).

## Discussion

The aim of the study was, on the one hand, to analyse the recidivism of individuals sentenced for crimes against road safety to community service orders and people participating in the TASEVAL intervention programme (awareness and re-education activities) and the PROSEVAL intervention programme (awareness and re-education activities + psychotherapeutic intervention), and to establish comparisons. On the other hand, the aim was to study changes in alcohol and drug consumption in a sample of participants who attended the TASEVAL and PROSEVAL programmes and to analyse the criminological and accident-prone profile. Evaluations are vital to enhance the benefits of educational and behavioural interventions through the analysis of their impact on road safety. In order to evaluate road safety educational programmes, Ulleberg and Rundmo (2002) recommended that attitude scales should be applied

before and after the programmes in order to determine whether the participants' attitudes had changed. Furthermore, RSE intervention programmes and their treatments need proper evaluation of their effectiveness and monitoring of the effects they produce on criminal recidivism (Negredo & Pérez, 2019). In this sense, Kaur et al. (2023) reviewed studies on subsequent risky driving behaviours, recidivism, and crashes among drivers with a traffic violation and 56.0% of the studies involved intervention/evaluation and demonstrated a significant reduction in driving under the influence among study participants. Most of the programmes focus on driving under the influence of alcohol, since alcohol is one of the variables most closely related to crimes against road safety and recidivism (Lapham et al., 2011; Nochajski & Stasiewicz, 2006). Palmer et al., (2012) assessed the effectiveness of a specific programme on alcohol-impaired driving, finding a recidivism rate of 0% after 1 year for those who successfully completed the programme, compared to 13.9% for those who did not complete it, and 3.9% for the control group. Other research, based on a cognitive-behavioural orientation educational programme, found a 43.0% lower probability of reoffending during the following two years, compared to drivers who had only received sanctions (Mills et al., 2008). Other experiences aimed at DUI offenders that incorporate activities for improving the motivation to change showed that the risk of recidivism was lower in those subjects who completed the programme compared to those who did not complete it or did not participate (Robertson et al., 2009). Regarding public programmes, Lapham et al. (2006) evaluated a reintegration strategy implemented in Oregon, involving private agencies and including close supervision of traffic offenders, that extended judicial monitoring and involvement, emphasis on treatment, and the requirement of sobriety. The DUI Intensive Supervision Programme demonstrated success in reducing DUI recidivism, and its effectiveness was associated with a 48.0% reduction in re-arrests for impaired driving, a 54.0% reduction in re-arrests for driving with a revoked or suspended licence, and a 39.0% decrease in all other traffic convictions. These findings are consistent with results of the TASEVAL intervention programme, which showed a significant reduction in alcohol consumption after the programme's implementation, though around 40% of TASEVAL intervention programme attendees do not benefit at all by reducing their alcohol consumption. Surprisingly, the PROSEVAL programme did not show a significant effect, either on reducing unhealthy alcohol use or the reduction of problematic drug use. Even after the intervention, participants still had scores within the risk levels, indicating that they continued to have problems with substance abuse. So, the therapeutic effects of the techniques with a cognitive-behavioural approach aimed at intervening with underlying mental processes at a cognitive, emotional, and behavioural level were null. Bearing in mind the significant prevalence of substance-related and addictive disorders and behavioural addictions among traffic offenders (Fariña et al., 2023), the therapeutic techniques should focus directly on these disorders and addictions. As this intervention is based on simple advice and education of the attendee, these attendees need to undergo intervention through counselling and continued follow-up and, for those with scores > 20, treatment for alcohol dependence (World Health Organization et al., 2001). However, it must be taken into account that not all attendees were convicted of offences involving alcohol. In this study, the criminological and accident-prone profile of the participants has been identified, reinforcing the suspicion that many have problems with alcohol as they have a recurrence of infractions of this type. These findings coincide with those reported by previous studies (Escamilla et al., 2023), that demonstrated a certain vulnerability to developing mental health problems such as dependence on alcohol and other substances. Furthermore, these results indicate the high incidence of traffic accidents in convicted persons, which coincides with the results of the study by Faílde-Garrido et al. (2022), which demonstrated that suffering from traffic accidents is a predictor of road crime. Elvira et al. (2021) studied the

repercussions of the law against drinking and driving penalties in the family context, through a project aimed at a harm-reduction strategy for families, recognising them as a space for rehabilitation.

A behavioural change was observed when the offenders' experiences in health units were brought into the home, allowing families to perceive the impact of project activities on the offender, directly influencing awareness of the damage caused by driving under the influence of alcohol. In this sense, the incorporation of community based participation in promoting RSE also suggested that community empowerment and participation can be instrumental in improving road safety and community health. For instance, greater understanding of the use of helmets by acquaintances, family members, neighbours, and health centre staff may positively impact the adoption of this preventive behaviour (Babazadeh et al., 2019). New proposals for hands-on advanced driving training programmes focused on training vehicle skills have become popular and are in high demand among adolescent offenders, but their lack of scientific support means that they are not easily accessible. Wang et al. (2020) described the effectiveness of these types of programmes, reporting no crash-reducing effect, relative to standard brief classroom sessions or basic RSE workshops, on young drivers charged with a traffic infraction.

More recently, programmes built on mindfulness-based interventions have also been used with traffic offenders (Baltrusch et al., 2021) to evaluate participants' driving behaviour through a driving simulation, as well as self-reported emotional regulation, both before and after the intervention. The results were promising and provided initial evidence of a behavioural change in recidivist offenders following the programme, but also identified that participants benefitting from it showed improved performance during risky driving situations and had fewer accidents. By taking into account therapeutic programmes focused on promoting a change in behaviour, Moxley-Kelly et al. (2019) evaluated a brief motivational interviewing workshop versus an advice control group intervention and it was found that the behavioural intervention reported better outcomes than the control group, creating a significant decrease in impaired-driving recidivism. Regarding the effectiveness of motivational counselling in combination with a community service component plan, a significant reduction in court-recorded driving offences over a 12-month period following such a programme was observed (Nirenberg et al., 2013). Moreover, the recidivism rates for alcohol-related driving offences following this reintegration intervention were lower than rates expected after receiving a simple educational intervention. Such an evidence is in line with the results of the application of the TASEVAL and PROSEVAL programmes. The effectiveness on recidivism for impaired driving was significant for both. In both cases, the combination of the highly stimulating community service experience with the techniques of motivational interviewing aimed at enabling the participant to make direct and relevant connections between vicarious trauma experience and risky driving provides an optimal pathway for provoking changes in high-risk behaviour. A recent systematic review (Razaghizad et al., 2021) concluded that motivational interviewing and reintegration programmes (including RSE&DI programmes, community service) are able to prevent DUI in prior offenders, and driver education programmes can increase their knowledge, whereas only drug abuse prevention substance abuse treatment and driver rehabilitation programmes are able to prevent DUI—with, however, a very low certainty of evidence. The literature review definitely points toward the adoption of comprehensive strategies and is consistent with the research of this study in which interventions addressed at working with a motivational approach and at a cognitive, emotional, and behaviour level have proven to be robustly effective. Likewise, the results obtained in this research address the need to implement, in the area of recidivism, a rehabilitation system that focuses on

people with serious problems with alcohol and other substances in order to prevent them from driving in these conditions that can be fatal for themselves and others. Considering the encouragement of policies applied to the area of road safety and traffic accident prevention as critical for the well-being of humanity, this study emphasised the importance of targeting more holistic interventions with young people and adolescents, as well as persistent offenders, due to the high prevalence of impaired driving among these population categories. These policies and public interventions, such as the TASEVAL and PROSEVAL programmes, have emerged from the spirit of the UN's Sustainable Development Goals by emphasising the importance of setting performance targets and monitoring progress towards achieving regulatory road safety objectives, undertaking to halve the number of traffic accidents and deaths involving drivers who consume alcohol, and/or achieving a reduction in those related to other psychoactive substances by 2030 (United Nations, 2016).

## Conclusions

The present study supports the effectiveness of the TASEVAL and PROSEVAL intervention programmes in preventing traffic offence recidivism. Attending the TASEVAL programme is shown to positively influence the avoidance of recidivism in crimes against road safety, with this being found to be significantly lower with sentenced or convicted drivers who participated in this programme compared to those who completed a different community service programme. Likewise, PROSEVAL programme has been shown to positively influence the avoidance of recidivism in crimes against road safety, with this being shown to be significantly lower with sentenced or convicted drivers who participated in this programme compared to those who completed a different community service programme. TASEVAL and PROSEVAL interventions have proven to be effective in reducing traffic offence recidivism and, consequently reducing danger on the roads. In this respect, both programmes contribute to road safety and traffic accident prevention as part of the 11th SDG strategy for the 2030 Agenda for Sustainable Development, which includes the access to safe, affordable, accessible, and sustainable transport systems provided for all through the improvement of road safety.

## Limitations of the Study and Further Research

The findings of this study should be seen in the light of some limitations. Firstly, the recidivism data correspond to recidivism punished with alternative sentencing to imprisonment. No other type of sanction could be obtained, such as, for example, financial sanctions for crimes against road safety. Secondly, there is only a small sample of subjects for the evaluation of the effectiveness of TASEVAL and PROSEVAL interventions to study the change in substance consumption. The greatest difficulty encountered was the COVID-19 pandemic, which has prevented the completion of post-test protocols. To achieve this, offenders' willingness to attend the intervention programme at the beginning and at the end of the interventions and complete the questionnaires is required. This decreased the number of people accessing it, generally due to mobility difficulties. Another aspect to take into account is that the people in this study are governed by Spanish laws, so the results should be taken with caution when comparing them with people subject to different laws.

## Conflict of Interest

The authors of this article declare no conflict of interest.

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## Ethical Considerations or Ethical Statement

The study procedure was approved by the General Subdirectorate of Open Media and Alternative Penalties and Measures of University of Valencia (020020190007). All participants were properly informed about the study and consented to participate complying with the ethical guidelines set out in the Declaration of Helsinki (2013).

## References

- Arias, E., Arce, R., Vázquez, M. J., & Marcos, V. (2020). Treatment efficacy on the cognitive competence of convicted intimate partner violence offenders. *Anales de Psicología/Annals of Psychology*, 36(3), 427-435. <https://doi.org/10.6018/analesps.428771>
- Babazadeh, T., Kouzekanani, K., Ghasemzadeh, S., Matlabi, H., & Allahverdiipour, H. (2019). The role of a community-based intervention in promoting helmet use in a non-probability sample of rural motorcyclists in Iran. *Journal of Community Health*, 44(4), 828-835. <https://doi.org/10.1007/s10900-019-00663-4>
- Baltruschat, S., Mas-Cuesta, L., Cándido, A., Maldonado, A., Verdejo-Lucas, C., Catena-Verdejo, E., & Catena, A. (2021). Repeat traffic offenders improve their performance in risky driving situations and have fewer accidents following a mindfulness-based intervention. *Frontiers in Psychology*, 11, Article 567278. <https://doi.org/10.3389/fpsyg.2020.567278>
- Beccagato, E., Ruggieri, A., Montisci, M., & Terranova C. (2021). Driving license regranting in DUI subjects: Road accident variables and predictive factors of substance use disorder. *Science Progress*, 104(3). <https://doi.org/10.1177/00368504211033702>
- Beck, K. H., Scherer, M., Romano, E., Taylor, E., & Voas, R. (2020). Driver experiences with the alcohol ignition interlock: Comparing successful and poor performers. *Traffic Injury Prevention*, 21(7), 413-418. <https://doi.org/10.1080/15389588.2020.1791323>
- Beke, M., & Blomeyer, R. (2016). *Research for PECH Committee - Social and economic impact of the penalty point system*. European Parliamentary Research Service. <https://policycommons.net/artifacts/1334223/research-for-pech-committee/1939466/>
- Blom, M., & Blokdiik, D. (2021). Long-term effectiveness of the alcohol ignition interlock programme: A retrospective cohort study in the Netherlands. *Accident Analysis & Prevention*, 151, Article 105888. <https://doi.org/10.1016/j.aap.2020.105888>
- Bouffard, J., Richardson, K., & Franklin, T. (2010). Drug courts for DWI offenders? The effectiveness of two hybrid drug courts on DWI offenders. *Journal of Criminal Justice*, 38(1), 25-33. <https://doi.org/10.1016/j.jcrimjus.2009.11.004>
- Castro, C., Doncel, P., Dinu, A. I., & Padilla, F. (2023). Strong predictors of offender drivers: Drug and alcohol addiction and the inability to dissociate binge alcohol or drug consumption from driving. Revoking their driver's licence may not be enough. *Transportation Research Part F: Traffic Psychology and Behaviour*, 92, 337-352. <https://doi.org/10.1016/j.trf.2022.12.002>
- Chaudhary, N., Tison, J., McCartt, A., & Fields, M. (2011). Patterns of recidivism related to case dispositions of alcohol-impaired driving offenses. *Traffic Injury Prevention*, 12(3), 210-216. <https://doi.org/10.1080/15389588.2011.553250>
- Dirección General de Tráfico (DGT, 2023). *Las principales cifras de siniestralidad vial. España, 2022* [Main figures on road traffic accidents. Spain, 2022]. <https://rb.gy/bvqs9d>
- Elliott, M., Waller, P., Raghunathan, T., Shope, J., & Little, R. (2000). Persistence of violation and crash behavior over time. *Journal of Safety Research* 31(4), 229-242. [https://doi.org/10.1016/S0022-4375\(00\)00042-6](https://doi.org/10.1016/S0022-4375(00)00042-6)
- Elvira, I. K. S., Marcon, S. S., Martins, E. A. P., & Oliveira, M. L. F. (2021). Experiences of family members of drivers who violate the law against drinking and driving and its repercussions. *Revista Brasileira de*



- Enfermagem*, 74(1), Article e20190466. <https://doi.org/10.1590/0034-7167-2019-0466>
- Escamilla-Robla, C., Beleña-Mateo, Á., & Mateu-Mollá, J. (2022). Influence of alcohol consumption, personality and attention deficit hyperactivity disorder on traffic offenders. *Psicothema*, 34(3), 410-420. <http://doi.org/10.7334/psicothema2022.38>
- Escamilla, C., Beleña, M. Á., Picó, A., Rojo, J. M., & Mateu-Mollá, J. (2023). A psychological profile of drivers convicted of driving under the influence of alcohol. *Transportation Research Part F: Traffic Psychology and Behaviour*, 95, 380-390. <https://doi.org/10.1016/j.trf.2023.05.007>
- European Commission. (2023, February 2). *Road safety in the EU: Fatalities below pre-pandemic levels but progress remains too slow*. [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_23\\_953](https://ec.europa.eu/commission/presscorner/detail/en/ip_23_953)
- European Commission. (2024). *Thematic report – alcohol and drugs*. European Road Safety Observatory, Directorate General for Transport. <https://rb.gy/k6cy9z>
- Faílde-Garrido, J. M., Martínez, J., Rodríguez-Castro, Y., & García-Rodríguez, M. A. (2022). Do road offenders constitute a unique clinical and sociodemographic profile? The relationship between crime and road safety. *Psychology, Crime & Law*. Advance online publication. <https://doi.org/10.1080/1068316X.2022.2126841>
- Fariña, F., Romero, J., Isorna, M., & Arce, R. (2023). Profiling and prevalence of substance-related and addictive disorders and behavioural addictions in incarcerated traffic offenders. *Sustainability*, 15, Article 9771. <https://doi.org/10.3390/su15129771>
- Fiscalía General del Estado (FGE, 2020). *Memoria 2019* [2019 Report]. Ministerio de Justicia. [https://www.fiscal.es/memorias/memoria2020/FISCALIA\\_SITE/index.html](https://www.fiscal.es/memorias/memoria2020/FISCALIA_SITE/index.html)
- Fiscalía General del Estado (FGE, 2022). *Memoria 2021* [2021 Report]. Ministerio de Justicia. [https://www.fiscal.es/memorias/memoria2022/FISCALIA\\_SITE/index.html](https://www.fiscal.es/memorias/memoria2022/FISCALIA_SITE/index.html)
- Fiscalía General del Estado (FGE, 2023). *Memoria 2022* [2022 Report]. Ministerio de Justicia. [https://www.fiscal.es/memorias/memoria2023/FISCALIA\\_SITE/index.html](https://www.fiscal.es/memorias/memoria2023/FISCALIA_SITE/index.html)
- Kaur, A., Williams, J., Recker, R., Rose, D., Zhu, M., & Yang, J. (2023). Subsequent risky driving behaviors, recidivism and crashes among drivers with a traffic violation: A scoping review. *Accident Analysis & Prevention*, 192, Article 107234. <https://doi.org/10.1016/j.aap.2023.107234>
- Lapham, S. C., Kapitula, L. R., C'de Baca, J., & McMillan, G. P. (2006). Impaired-driving recidivism among repeat offenders following an intensive court-based intervention. *Accident Analysis & Prevention*, 38(1), 162-169. <https://doi.org/10.1016/j.aap.2005.08.009>
- Lapham, S. C., Stout, R., Laxton, G., & Skipper, B. J. (2011). Persistence of addictive disorders in a first-offender driving while impaired population. *Archives of General Psychiatry*, 68(11), 1151-1157. <https://doi.org/10.1001/archgenpsychiatry.2011.78>
- Le Lièvre, P., Adminaite, D., Jost, G., & Podda, F. (2019). *Progress in reducing drink-driving and other alcohol-related road deaths in Europe*. European Transport Safety Council. [https://etsec.eu/wp-content/uploads/reducingdrinkdriving\\_031219\\_design\\_final.pdf](https://etsec.eu/wp-content/uploads/reducingdrinkdriving_031219_design_final.pdf)
- Ley Orgánica 15/2007, de 30 de noviembre, por la que se modifica la Ley Orgánica 10/1995, de 23 de noviembre, del Código Penal en materia de seguridad vial. *Boletín Oficial del Estado*, 288, 49505-49509. <https://www.boe.es/eli/es/lo/2007/11/30/15>
- Ley Orgánica 5/2010, de 22 de junio, por la que se modifica la Ley Orgánica 10/1995, de 23 de noviembre, del Código Penal. *Boletín Oficial del Estado*, 152, 54811-54883. <https://www.boe.es/eli/es/lo/2010/06/22/5>
- Ley Orgánica 1/2015, de 30 de marzo, por la que se modifica la Ley Orgánica 10/1995, de 23 de noviembre, del Código Penal. *Boletín Oficial del Estado*, 77, 27061-27176. <https://www.boe.es/eli/es/lo/2015/03/30/1>
- Lijarcio, I., Escamilla, C., López, C., Puchades, R., Martí-Belda, A., Bosó, P., & Montoro, L. (2016). *Documentos Penitenciarios 15. Manual para el profesional PROSEVAL. Programa de Intervención Psicoeducativa en Seguridad Vial* [Penitentiary Documents 15. Professional Manual PROSEVAL. Psychoeducational Intervention Program in Road Safety]. Secretaría General de Instituciones Penitenciarias. Ministerio del Interior. <https://rb.gy/2qxlk3>
- Lijarcio, I., Llamazares, F. J., Valle, E., Montoro, L., & Useche, S. A. (2022). Assessing risk perception over recidivist traffic offenders from a multigroup approach: How gendered could it be? *European Journal of Psychology Applied to Legal Context*, 14(1), 33-41. <https://doi.org/10.5093/ejpalc2022a4>
- Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. Sage.
- Martí-Belda, A., Pastor, J. C., Montoro, L., Bosó, P., & Roca, J. (2019). Persistent traffic offenders: Alcohol consumption and personality as predictors of driving disqualification. *European Journal of Psychology Applied to Legal Context*, 11(2), 81-92. <https://doi.org/10.5093/ejpalc2019a3>
- McCart, A. T., Leaf, W. A., & Farmer, C. M. (2018). Effects of Washington state's alcohol ignition interlock laws on DUI recidivism: An update. *Traffic Injury Prevention*, 19(7), 665-674. <https://doi.org/10.1080/15389588.2018.1496426>
- Mills, K. L., Hodge, W., Johansson, K., & Conigrave, K. M. (2008). An outcome evaluation of the New South Wales Sober Driver Programme: A remedial programme for recidivist drink drivers. *Drug and Alcohol Review*, 27(1), 65-74. <https://doi.org/10.1080/09595230701711116>
- Montoro, L., Alonso, F., Esteban, C., & Toledo, F. (2000). *Manual de seguridad vial: el factor humano* [Road safety manual: The human factor]. Ariel.
- Montoro, L., Escamilla, C., Lijarcio, J. I., Martí-Belda, A., & Puchades, R. (2010). *Taller de actividades para el cumplimiento de TBCs relacionados con la seguridad vial (TASEVAL)* [Workshop on activities for compliance with community services related to road safety (TASEVAL)]. Secretaría General de Instituciones Penitenciarias.
- Moxley-Kelly, N., Ouimet, M. C., Dongier, M., Chanut, F., Tremblay, J., Marcantoni, W., & Brown, T. G. (2019). The role of behavioral phenotypes on impaired driving recidivism risk and treatment response to brief intervention: A preliminary study. *Alcoholism Clinical & Experimental Research*, 43(2), 324-333. <https://doi.org/10.1111/acer.13935>
- Negredo, L., & Pérez, M. (2019). *Intervención y tratamiento de delincuentes en prisión y medidas alternativas* [Intervention and treatment of offenders in prison and alternative measures]. Editorial Síntesis.
- Nirenberg, T., Baird, J., Longabaugh, R., & Mello, M. J. (2013). Motivational counseling reduces future police charges in court referred youth. *Accident Analysis Prevention*, 53, 89-99. <https://doi.org/10.1016/j.aap.2013.01.006>
- Nochajski, T. H., & Stasiewicz, P. R. (2006). Relapse to driving under the influence (DUI): A review. *Clinical Psychology Review*, 26(2), 179-195. <https://doi.org/10.1016/j.cpr.2005.11.006>
- Novoa, A. M., Pérez, K., Santamariña-Rubio, E., Marí-Dell'Olmo, M., Ferrando, J., Peiró, R., Tobías, A., Zori, P., & Borrell, C. (2010). Impact of the penalty points system on road traffic injuries in Spain: A time-series study. *American Journal of Public Health*, 100(11), 2220-2227. <https://doi.org/10.2105/AJPH.2010.192104>
- Nunnally, J.C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill
- Padilla, J. L., Doncel, P., Gugliotta, A., & Castro, C. (2018). Which drivers are at risk? Factors that determine the profile of the reoffender driver. *Accident Analysis & Prevention*, 119, 237-247. <https://doi.org/10.1016/j.aap.2018.07.021>
- Palmer, E., Hatcher, R., McGuire, J., Bilby, C., & Hollin, C. (2012). The effect on reconviction of an intervention for drink-driving offenders in the community. *International Journal of Offender Therapy and Comparative Criminology*, 56(4), 525-538. <https://doi.org/10.1177/0306624X11403894>
- Pérez, B., García, L., de Vicente, M. P., Oliveras, M. A., & Lahoz, M. (2010). Validación española del Drug Abuse Screening Test (DAST-20 y DAST-10) [Spanish validation the Drug Abuse Screening Test - DAST (DAST-20 and DAST-10)]. *Health and Addictions/Salud y Drogas*, 10(1), 35-50. <https://ojs.haaaj.org/?journal=haaj&page=article&op=view&path%5B%5D=35&path%5B%5D=35>
- Razaghizad, A., Windle, S. B., Gore, G., Benedetti, A., Ells, C., Grad, R., Filion, K. B., & Eisenberg, M. J. (2021). Interventions to prevent drugged driving: A systematic review. *American Journal of Preventive Medicine*, 61(2), 267-280. <https://doi.org/10.1016/j.amepre.2021.03.012>
- Robertson, A. A., Gardner, S., Xu, X., & Costello, H. (2009). The impact of remedial intervention on 3-year recidivism among first-time DUI offenders in Mississippi. *Accident Analysis & Prevention*, 41(5), 1080-1086. <https://doi.org/10.1016/j.aap.2009.06.008>
- Rosenthal, R., & Rubin, D. B. (1982). A simple, general purpose display of magnitude of experimental effect. *Journal of Educational Psychology*, 74(2), 166-169. <https://doi.org/10.1037/0022-0663.74.2.166>
- Ruiz, M., Díaz, M., & Villalobos, A. (2012). *Manual de técnicas de intervención cognitivo-conductuales* [Manual of cognitive-behavioral intervention techniques]. Desclée De Brouwer.
- Sagberg, F., & Ingebrigtsen, R. (2018). Effects of a penalty point system on traffic violations. *Accident Analysis & Prevention*, 110, 71-77. <https://doi.org/10.1016/j.aap.2017.11.002>
- Secretaría General de Instituciones Penitenciarias. (2010). *Instrucción I-2/2010/DGCTMA, de 10 de marzo, sobre la gestión administrativa de la pena de trabajos en beneficio de la comunidad contra la seguridad del tráfico: Los talleres de actividades en seguridad vial, TASEVAL* [Instruction I-2/2010/DGCTMA, of March 10, on the administrative management of the penalty of work for the benefit of the community against traffic safety: Workshops on road safety activities, TASEVAL]. Ministerio del Interior.
- Skinner, H. A. (1982). The Drug Abuse Screening Test. *Addictive Behaviors*, 7(4), 363-371. [https://doi.org/10.1016/0306-4603\(82\)90005-3](https://doi.org/10.1016/0306-4603(82)90005-3)
- Teoh, E. R., Fell, J. C., Scherer, M., & Wolfe, D. E. (2021). State alcohol ignition interlock laws and fatal crashes. *Traffic Injury Prevention*, 22(8), 589-592. <https://doi.org/10.1080/15389588.2021.1984439>
- Ulleberg, P., & Rundmo, T. (2002). Risk-taking attitudes among young drivers: The psychometric qualities and dimensionality of an instrument to measure young drivers' risk-taking attitudes. *Scandinavian Journal of Psychology*, 43(3), 227-237. <https://doi.org/10.1111/1467-9450.00291>
- United Nations. (2016). *Transforming our world: The 2030 agenda for sustainable development*. <https://sdgs.un.org/publications/transforming-our-world-2030-agenda-sustainable-development-17981>
- Vilarino, M., Amado, B. G., Seijo, D., Selaya, A., & Arce, R. (2022). Consequences of child maltreatment victimisation in internalising and externalising mental health problems. *Legal and Criminological Psychology*, 27(2), 182-193. <https://doi.org/10.1111/lcrp.12212>
- Wang, Y. C., Foss, R. D., O'Brien, N. P., Goodwin, A. H., & Harrell, S. (2020). Effects of an advanced driver training program on young traffic

- offenders' subsequent crash experience. *Safety Science*, 130, Article 104891. <https://doi.org/10.1016/j.ssci.2020.104891>
- Watson, A., Kaye, S. A., Fleiter, J., & Freeman, J. (2020). Effectiveness of vehicle impoundment for high-range speeding offences in Victoria, Australia. *Accident Analysis & Prevention*, 145, Article 105690. <https://doi.org/10.1016/j.aap.2020.105690>
- World Health Organization. (2023, December 13). *Road traffic injuries*. <https://www.who.int/es/news-room/fact-sheets/detail/road-traffic-injuries>
- World Health Organization, Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monteiro, M. G. (2001). *AUDIT: The Alcohol Use Disorders Identification Test: Guidelines for use in primary health care* (2nd ed). World Health Organization. <https://apps.who.int/iris/handle/10665/67205>
- Yao, J., Xiao, T., & Hou, S. (2021). Risk perceptions and DUI decisions of drivers in different legal environments: New evidence on differential deterrence from a Chinese sample. *Accident Analysis & Prevention*, 157, 106188. <https://doi.org/10.1016/j.aap.2021.106188>