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The impact of the penalty point system on the behaviour of young drivers and passengers in Spain

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ABSTRACT

Traffic accidents are one of the main causes of death amongst young people in the European Union and Spain is no exception. In an attempt to reduce road fatalities, the Spanish government introduced a legislative measure which is based upon the loss of points if caught transgressing the traffic laws. After the introduction of the penalty point system (PPS) the Spanish government reported that the number of accidents and fatalities decreased. Therefore, the aim of the present study was to investigate self-reported changes in the behaviour of young drivers and passengers following the implementation of the PPS in Spain. A cross sectional survey was carried out with 1452 undergraduate university students (52.8% female; Mean age = 21.5; S.D. = 2.5). The results show that young Spanish drivers reduced their risky driving behaviour and increased their use of safety equipment after the PPS was introduced, although there were gender differences. Specifically, more females (than males) reported that they: stopped driving while under the influence of alcohol, exceeded the speed limit less often and began wearing their seat belt at all times after the PPS was introduced. These changes in behaviour may account for the observed reduction in traffic crashes and fatalities reported by the Spanish government. Nevertheless, despite the PPS many young drivers continued to engage in risky driving behaviour.

1. Introduction

Globally, road traffic collisions are the leading cause of death among people aged 15–29 years old (WHO, 2013). This is also a problem in Spain, where it is estimated that the fatality rate is 4.5/100,000 people, but among young drivers this rate is twice as high (IRTAD, 2013).

Driver behaviour is a contributory factor in the vast majority of road injuries and fatalities in Spain. For example, in 2005 toxicological tests found that 28.8% of those killed in traffic accidents had more than 0.3 g/l of alcohol in their blood (Dirección General de Tráfico, 2008). Speeding was identified as a contributory factor in around 24% of all fatal crashes in Spain, while distraction was noted as a contributing factor in one third of all crashes (IRTAD, 2013). Research has shown that many drivers carry out additional activities while driving, such as: smoking, eating, drinking, speaking with passengers, manipulating a radio or music device, or using a mobile phone (Gras et al., 2008), thereby increasing their probability of being involved in a crash. Using the mobile phone is one of the distractions most often engaged in by drivers. Although using a handheld mobile phone while driving is illegal in Spain, drivers commonly report talking on a handheld mobile, as well as reading and writing text messages (Gras et al., 2007a). Furthermore, protective equipment such as seat belts or helmets are not always used, particularly on urban roads, when the distance is short and/or the route is well known (Fuentes et al., 2010; Gras et al., 2007b).

In July 2006 a penalty point system (PPS) was introduced into Spain in an attempt to reduce unsafe driving. With this new law every driver (automobile or motorcycle) starts with twelve points on their licence (only eight for the first three years of driving) and they lose points every time they are caught breaking traffic laws. When a driver has no points left, then they lose their licence to drive (BOE, 2005). According to official data, two years after the implementation of the PPS there was a 12% reduction in the number of crashes and a 26% reduction in fatalities (DGT, 2009).

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Most types of risky driving behaviour will, if detected by the authorities, result in the loss of points. For example, driving while over the alcohol limit (>0.25 g/l) is punished by a loss of 4–6 points, while driving under the influence of other drugs is punished with a loss of 6 points. In addition, exceeding the speed limit by more than 50% is punished by a loss of 6 points. These types of behaviours are considered to be very serious offences and as such are also penalised with fines ranging from 301 to 1500 Euros (BOE, 2005). Drivers who exceed the speed limit by more than 20 km/h may be punished with a loss of 2, 3 or 4 points, depending on the proportion the limit was exceeded by. Other traffic offences that are punished through a loss of points include failure to use a safety belt or helmet (motorcycles) and using a handheld mobile phone while driving. If caught driving a car without a seat belt, riding a motorcycle without a helmet or driving while using a handheld mobile phone, the driver will lose three points from their licence and will also be fined between 91 and 300 Euros (BOE, 2005).

Psychological self-control models, such as proposed by Rachlin (1989), predict a reduction in risky behaviour (or an increase in protective behaviour) when the negative consequences of doing so (or not doing so), such as losing points or paying a large fine, are increased. Self-control models also highlight the importance of the relationship between the behaviour and its consequence, hypothesising that the immediate consequences are more important in predicting behaviour than any delayed consequences. One of the main contributions of Rachlin's self-control model was to introduce the concepts of probability and delay as equivalents, thus linking expected utility models, which state that behaviour depends upon the probability of losses and gains (Kahneman and Tversky, 1979), with the psychological learning behaviour models. Rachlin's model states that it is more effective to increase the probability of punishment, or to reduce the delay in delivery, than to increase the severity of the penalties. A loss of points can be considered to be an immediate consequence if the driver caught by the police is punished with a loss of points. Although the official notification of the lost points usually arrives later, the drivers are immediately aware of the negative consequences of their behaviour. If an infringement is detected by an automatic camera the driver will receive a penalty notice two or three weeks later. However, although the driver will be able to associate the risky behaviour with the penalty, the impact on their behaviour is likely to be weaker than if the punishment had been delivered immediately.

According to Rachlin's (1989) self-control model, following the introduction of the PPS we would expect a reduction in risky driving behaviour and an increase in protective behaviours, but only if the law is enforced. Previous research has shown that risky behaviours decrease when the probability of making a loss increases, but there is no relationship between the risky behaviour and the magnitude of the potential loss (Gras and Riba, 1995).

Researchers have reported that the PPS appears to have reduced the numbers of fatalities in Spain (Castillo-Manzano et al., 2010; Izquierdo et al., 2011). These studies were based on safety indicators, such as: crash rates, fatalities and serious injuries. However, there was no mention of any changes in driving behaviour.

In order to investigate the change in behaviour after the introduction of the PPS, Montoro et al. (2008) interviewed 2014 Spanish drivers aged 16 years or older (mean age = 42.9; 61.2% males) one year after the introduction of the PPS. Their aim was to measure changes in driving behaviour with regards to: drink driving, speeding, using a handheld mobile phone, using a seat belt, using a helmet, maintaining a safe following distance and stopping in a prohibited area (Montoro et al., 2008). They asked whether drivers had changed these driving behaviours following the introduction of the PPS and whether they engaged in these behaviours: more often, less often, or at the same frequency as prior to the PPS. However, the way in which Montoro et al. constructed the questions resulted in important details being obscured. For example, the "no change" group consisted of drivers who frequently undertook the risky behaviours both before and after the PPS, as well as those who never undertook the risky behaviour, irrespective of the PPS. Two measures of behaviour frequency (before and after) are necessary in order to adequately evaluate the effect of the PPS.

Therefore, the main aim of the present study was to investigate self-reported changes in risky driving behaviour, including: drink driving, driving under the influence of drugs, speeding and using a handheld mobile phone while driving. Furthermore, the study also aimed to investigate changes in seat belt and helmet use. This was attempted in a sample of young Spanish drivers two years after the introduction of the PPS by comparing their self-reported behaviour before and after the law. Furthermore, the research investigated whether there were differences by: gender, whether they had lost points from their licence and whether they had been involved in a crash in the last 12 months.

2. Material and method

2.1. Sample and design

A cross sectional survey was carried out with 1452 young people (52.8% female) aged 19–30 years old (Mean age = 21.5; S.D. = 2.5). All participants were students in their first three years studying at the University of Girona (Spain). The distribution of students, by Faculty was: Nursing (3.7%), Psychology (8.5%), Education (27.2%), Science (15.1%) and Engineering (45.4%), which was broadly representative of the University's student population. Most (84.9%) of the participants (n = 1233; 80.9% females; 89.4% males) drove a car, rode a motorcycle or both in the six months before the introduction of the PPS. Data were collected two years after the implementation of the PPS.

2.2. Variables

The survey measured: gender, age and whether participants held a licence for a car, a motorcycle or both. In order to measure risky behaviour, drivers were asked to rate how often they: *drove after consuming alcohol, drove after consuming other drugs, exceeded the speed limit on urban roads, exceeded the speed limit on the highway* (defined as roads between cities and towns) *and used a handheld mobile phone while driving* both before and after the PPS was introduced. There were three possible answers to these questions: never, occasionally and frequently. In order to measure the use of safety equipment, participants were asked to rate how often they: *used a seat belt while travelling in the front and rear seats of cars on urban roads and on the highway* and how often they *used a helmet when travelling by motorcycle on urban roads and on the highway* both before and after the PPS was introduced. This scale also had three possible answers: always, sometimes and never.

Drivers were also asked whether they had lost any points from their licence since the introduction of the PPS and whether they had been involved in a motor vehicle crash in the last 12 months.

2.3. Procedure

Permission was firstly obtained from the person in charge of each faculty. Following agreement from those in charge of each faculty, research assistants visited each class and briefly explained the purpose of the research, which was to find out whether or not the introduction of the penalty point system had changed their driving behaviour. The research assistants also told the students that participation in the study was completely voluntary and