

The Police Enforcement Effect on Behavioural Change of Seat Belt Usage

Huseyin¹ AKBULUT, Cahit GUREL²

Department of Civil Engineering, Faculty of Engineering, Afyonkocatepe University, Turkey¹

Department of Civil Engineering, Faculty of Engineering, Afyonkocatepe University, Turkey²

ABSTRACT: WHO reports that, road traffic accidents have long been, and will be a major cause of death and injury in almost every country and result in significant social and huge amount of economic costs. The majority of these accidents are the direct result of driver failures and attempts to reduce the level of road fatalities and injuries traditionally focuses on means of minimising the level of high risk road user behaviour. For these reason, the three most commonly adopted approaches include, education, environment/engineering and enforcement. It is assumed an effective road safety countermeasure that could help of reducing the level of inappropriate road user behaviour. The success of enforcement is dependent on its ability to create a meaningful deterrent threat to road users. In order to achieve this, the primary focus should be on increasing surveillance levels to ensure that perceived apprehension risk is quite high. If apprehension risk is low then penalty severity and immediacy of punishment may only have only a limited impact on road user behaviour. The available evidence indicates that existing enforcement levels need to be increased by a factor of at least three, and maintained over a long period of time, in order to bring about sustained increases in the level of perceived apprehension risk. The use of publicity also supports the enforcement activities adopted as a means of increasing enforcement effectiveness. This is achieved by increasing community awareness of enforcement efforts and raising the level of perceived apprehension risk, that can help of long term and sustainable behavioural changes on road users.

KEYWORDS:Road safety, police enforcement, seat- belt use, behavioral changes.

I. INTRODUCTION

Road traffic accidents have long been, and will be a major cause of death and injury in almost every country and result in significant social and huge amount of economic costs [1]. Different steps have been taken in different countries to improve road safety to reduce traffic related injuries and mortalities. Global country reports (WHO-015) reveals that low and middle- income countries have much higher road traffic fatality rates compared to the high income countries that have successfully implemented effective and continuous interventions having corresponding reduction in road traffic related deaths and health, economic and social burden [1].

The clear majority of these accidents are the direct result of driver failures and attempts to reduce the level of road fatalities and injuries have traditionally focused on means of minimising the level of high risk road user behaviour, which cannot be easily changed and lead to the right way. For these reason, the three most commonly adopted approaches include, education, engineering and enforcement. Despite, the education has been assumed that one of the most important way of changing human behaviour in the right manner, it is not particularly the case in changing road user's behaviour. No particular research shows that well educated road users have not been involved in traffic accidents and leading injuries and fatalities [2-3].

Another important way of influencing of driving behaviour is that traffic enforcement and its mechanism has been subject of research since the late 1940s. Research tradition in this field was mainly created in the US. and Europe. The research on traffic enforcement was boosted and further developed in the 1970s when the US introduced the STEP programme (Selective Traffic Enforcement Programme). This has been followed by a number of camera enforcement programmes in almost every middle and high-income countries struggling to minimise the fatalities and injuries since

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the late 1980s. At the present, every intelligent technological approaches have been used for effective and meaningful enforcement hence safe traffic environment. The Critical approach is to create a subjective risk of detection. Police enforcement inspires in widespread deterrence in time and space on the condition that drivers cannot precisely anticipate the presence of surveillance. This is mainly because they increase the time and space of uncertainty of the presence of the police enforcement, [9-10] that aims of longer space and time effects.

In the frame of the Decade of Action for Road Safety in the period of 2011-2020, [6]. Turkey has taken an action plan which focuses on seat-belt usage supported by police enforcement and publicity to minimise the fatalities and injuries caused by traffic accidents that have been intolerable level for long time as shown in Table.1.

Table.1. Estimated Road Traffic Fatalities in Turkey

YEARS	NUMBER OF ACCIDENTS	DEATHS ON SCENE OF ACCIDENTS (1)	NUMBER OF INJURED	PERMANENT DISSABILITIES (%5)	AFTERWARD DEATHS 1 X1.5 (2)	SUM OF DEATHS (1+2)
2002	439 000	4093	116000	5 800	6139	10232
2004	537 000	4427	136 437	6821	6640	11067
2006	728 755	4633	169 080	8450	6949	11582
2008	950 120	4236	184 468	9223	6354	10590
2009	1053346	4324	201380	10069	6486	10810
2010	1 104 388	4045	211 496	10 570	6067	10112
2011	1228929	3835	238074	11903	5752	9587
2012	1 296 636	3750	268 102	13405	5625	9375
2013	1 207 354	3685	274 829	13741	5527	9212
2014	1199010	3524	285059	14252	5286	8810

Resources: www.egm.gov.tr + www.tramer.org.tr web sites used

II. SEAT BELT USE AND TRAFFIC SAFETY EFFECT

Despite, the history of seatbelt use enforcement is comparatively short. It has not been set a primary target for the police in most of low and middle income countries. However, seat -belts usage have been regarded as being one of the most effective precaution for minimising traffic injuries and fatalities in the certain speed limits. It has been estimated that vehicle occupants who correctly use seat belts are 50% to 60% less likely to sustain serious or fatal injuries in an accident situation [1-4]. Increasing the level of seat belt usage requires a coordinated approach involving educational and enforcement measures. However, in many countries seat belt enforcement is not literally known that how the seat-belt usage could prevent fatalities and injuries in an accident. So road users and police authorities responsible for the enforcement are often unaware of the true potential of seat belts to reduce injuries and fatalities, believing that other traffic enforcement activities which focus on drink driving and speeding behaviour can lead to far greater road safety benefits [5-6]. So the police typically might target road user behaviour which has the potential to reduce the actual number of road accidents. Seat belt wearing behaviour does not fall into this category because it does not lead to a reduction in the number of accidents but only reduces the likelihood of injury once an accident occurred.

Especially, in the countries, as in Turkey, having a quite high accident rates hence fatalities and injuries, increasing seat-belt usage might be good help to minimise the casualties and reach the 50 % reduction target set in the certain time. WHO carried out a project, called the Decade of Action for Road Safety in the period of 2011-2014 promoting seat belt use in Afyonkarahisar and published the results. After the project period, the measurement has been continued and evaluated [7].

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III. EFFECTS OF TRAFFIC LAW ENFORCEMENT ON DRIVER BEHAVIOUR

The fundamental aim of traffic enforcement is to prevent accidents that would occur by deterring road users from violations of the rules that increase accident risk. Enforcement activities were supported by high levels of publicity programs provide an effective means of increasing community awareness of the benefits of seat belt usage to improve the effectiveness of seat belt enforcement operations by increasing the perceived risk of apprehension. It is important that road users actually observe the publicised increase in the level of enforcement activity otherwise behavioural changes are usually only short-term. [11]. Publicity as a standalone measure can increase community awareness of road safety issues, however, its effect on actual road user behaviour is usually only minimal. So it was supported by a tight police enforcement after three mounts later the publicity started.

After preparation and publicity stages, the active police enforcement was started on November-2011 and the measurement made in six mounts later on May- 2012. As Figure 1. shows that seat-belt usage in six mounts has a rapid increase, that is from 6.8 to 49.30 %. More than 40 % increase was a considerable success in the six mounts time period. A similar trend was also shown on March-2013-June -2013 and it was increased to 72.9 % that was the maximum increase. Despite all these success was started declining from June -2013. The later measurement, that was made after loosening the project pressure and the police enforcement, October-013-46.4 %, May-2014-43.3%, September-2014-36.8 %, May-2015-31.6 %, September-2015-26.30 % and June -2016-18.20 % was occurred. It is clear that if the pressure of publicity and police enforcement was loosen and lifted, the successful story made with tough efforts in a certain time starts gradually coming down to the point the project was started. So it is obvious that lifting up the police enforcement pressure might easily diminish all the positive behavioural changes the road user gained. In order to ensure a sustainable behavioural change needs a continuous publicity and police enforcement, that is depending on the police authority and political support. Otherwise, the police may also lose its motivation in doing so.

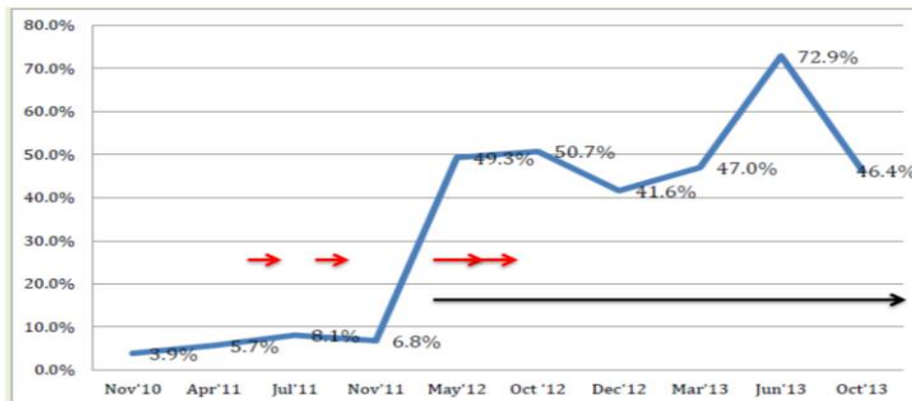


Figure.1. Proportion of all occupants wearing seat-belts in Afyonkarahisar, Turkey, 2010-2013. (Source: John Hopkins International Injury Research Unit (2014)- [7].

VII. CONCLUSION

The principle aim of traffic enforcement is to prevent accidents that would occur by deterring road users from violations of the rules. Consequently, the most straightforward question that can be asked is how much and how long traffic enforcement is needed to decrease the number of accidents, that might possible occur. Answering this question is not that easy. Because, make a strong changes all road user, especially drivers' behaviour is not either easy task. Making certain changes with strong enforcement and publicity does not mean that it is sustainable behavioural changes and transferred to the new joiners to the traffic.

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From the study these conclusion might be drawn:

- The police enforcement with strong publicity is the one of the most effective ways of changing driver behaviour hence traffic safety and diminishing the fatalities and injuries.
- Loosening the enforcement and publicity may lead rapid decrease on the gained success with long and hard efforts.
- Without political and police authority support, police on the site might easily lose its motivation and loosens the police enforcement efforts.
- In order to ensure sustainable safety success, existence of traffic police – even though representing a small objective and relatively small subjective risk of detection – have an impact on driver behaviour, also implying safety effects

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