

Using Safety Belt Which Is the Single Most Effective Way to Protect People In A Crashes- Example Of Turkey

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Abstract

Traffic fatality is a major and a growing but neglected global public health issue. Turkey has high numbers of the death and injury per unit vehicle/km due-to traffic accidents which are accepted as one of the most risk all over the world. The real tragedy is that road accidents fatalities are excessive numbers in Turkey because single safety rules have not be considered. Seat belts are the single most effective means of reducing deaths in motor vehicle crashes. The aim of this study is to find seat belt use rate in Turkey. 3284 accidents reports have been examined in this study. The study population consisted of the people who have fatal or injured accident. It is find that seat belt use rate among traffic accident casualties is only 23,86% in Turkey. This tragic rate is also one of the answers of the question 'why traffic fatality rate is very high in Turkey'.

1. Introduction

Road traffic injuries are one of the main public health problems facing modern society. Traffic fatality is a major and a growing but neglected global public health issue. One of the main external causes of morbidity and mortality in various parts of the world is traffic accident. Every day around the world, more than 3000 people die from road traffic injury and an estimated 1.2 million people are killed in road crashes each year and as many as 50 million are injured. Namely, 2,1% of total death and 25% of death result from accidents worldwide take place by reason of traffic accidents [1].

Every year thousands of people have died and hundreds thousands of people have injured in Turkey because of traffic accidents which are major public health problem of the country. Turkey has high numbers of the death and injury per unit vehicle/km due-to traffic accidents which are accepted as one of the most risk all over the world. For instance, as it observed in UK 8, in USA 9, in Germany 11, in France 14 and in Turkey 73 people have been died per each 1 million vehicle/km and per 1 billion vehicle/km 0,19 person in France, 0,46 in USA, 0,52 in UK, 0,53 in Germany, and 1,05 person in Turkey have been injured [2]. There is a respectable relation between development level of countries and apportionment of accidents. That

shows us: Traffic issue is an educational and cultural problem [2,3]. People have 5-10 more times death risk and 3-8 more times injury risk in a traffic accident in Turkey than other countries. The real tragedy is that road accidents fatalities are excessive numbers in Turkey because single safety rules have not be considered.

Seat belts (SB) are the single most effective means of reducing deaths in vehicle crashes. The use of (SB) is one of the most effective ways to reduce road accident fatalities. Nowadays and in particular over the past 30 years, air bags and (SB) are the most popular devices designed and developed to improve driving safety. International research has strongly supported the effective impact of (SB) use on reducing or avoiding traffic injuries and traffic fatalities. Studies have also shown that when a road accident occurs, the use of (SB) prevents certain types of injuries to vehicle occupants, or mitigates their severity [4]. (SB) can reduce the risk of all injuries by 40–50%; of serious injuries by 43–65%; and of fatal injuries by 40–60% [5,6,7]. Mandatory (SB) use has been one of the greatest success stories of injury prevention and has saved many lives [1].

2. Methods

Real (SB) use was researched in this study by examining accident reports. Data were obtained from the Directorate of Public Security database in Izmir which is the third largest city in Turkey. The study population consisted of the people who have fatal or injured accident. A total of 3284 accidents reports (1 January 2004 and 31 December 2004) were examined in the city Izmir. There were 32 died people, 4565 injured people and 403 healthy people reports (SB) in have been researched according to the reports.

3. Results

(SB) use rate is found that only 23,86% among people who involved in an injured or fatal accident during 2004 in Izmir. There is no obligation to use (SB) according to the law for

86,64% of (SB) non user. This is the most tragic issue (Table 1).

Table 1. Number of seat belt users during fatal and non fatal accidents in Izmir

use	non use	non use but no obligation	unknown
373	159	1031	3437

4. Discussion

The rate of safety belt use which changes due to existent and practice of law is 70% [8]-75% [9] in USA and 45%-95% for front seat in EU, and 9%-75% for rear seat in EU [10,11]. According to ETSC estimates, seat belt wearing rates in the in EU vary between 45 and 95% for front seat occupants and between 9 and 75% for rear seat passengers (Table 2). The weighted mean wearing rate for seat belts in the European Union is 76% for front seat occupants and 46% for rear seat occupants [11].

Table 2. Seat belt using rates in the European Union (%) (ETSC, 2003)

Country	front	rear	Country	front	rear
Austria	70	35	Italy	50	10
Belgium	55	25	Luxemburg	55	25
Denmark	70	33	Netherlands	75	47
Finland	87	66	Portugal	45	10
France	85	45	Spain	61	20
Germany	95	75	Sweden	85	74
Greece	45	9	UK	93	75

Result of this study safety belt use in Turkey was found as 23,86%. The low rate of using safety belt explain why Turkish people be exposed to death and injury in traffic accidents more than the other countries. To reduce traffic accidents fatality in Turkey, various publicity programs about efficacy of safety belt and safety belt use enforcement programs must exercise earnestly. In many case people imitates others behaviors. This social impact theory proves that safety belt use of important model people in society positively increase safety belt use of others [12]. Hong et al. (1998) found that if front seat passengers have used safety belt 77% of drivers also have used safety belt [13]. Safety belt use of parents and educating children about restraint using increases number of adult safety belt users [14,15].

In many place, instead of standard enforcement, combined publicity and enforcement programs (EP) increase (SB) use. Combine of increased publicity about the importance of using (SB), greatly increased law enforcement, and publicity aimed at heightened visibility and awareness of the enforcement known as publicized high density (EP) which are firstly practiced in Canada, enhanced as a model in USA and

documented the success in France, the Netherlands, and New Zealand [16], increase to higher levels rate of (SB) use with community support [17].

Although the effectiveness of (SB) for reducing injury to rear seat passengers in traffic accidents has been well documented, the ratio of rear-seat passengers restrained by (SB) remains lower than that of drivers or passengers in front seats. If passengers do not use (SB) in rear seats they may sustain unexpected injury to themselves when involved in accidents, and also endanger drivers or front seat passengers [18].

5. Conclusions

Traffic accidents are the major causes of mortality and morbidity in Turkey. Compared with the other European countries, Turkey has a relatively higher rate of traffic accidents causing a large number of fatalities and injuries. More than five thousand people are killed in road traffic accidents, and more than one hundred thousand of people are injured every year in Turkey. These accidents also cause huge damages to Turkish economy. More than 130 000 people were killed and more than 2,2 million people were injured because of traffic accidents in Turkey during the last 25 years. Every two years the number of fatalities on the road traffic accidents just about equals the death of the tragic Marmara earthquake in 1999. Simple solution of the problem is to increase rate of safety belt use.

6. References

- [1] Peden M., Scurfield R., Sleet D., Mohan D., Hyder A. A., Jarawan E. and Mathers C. (Eds). *The world report on road traffic injury prevention*. WHO, Geneva:2004.
- [2] Darçın, ES, Darçın, M. Trafikte Çocuk Trajedisi. *Toplumsal Bilinçlenme Sürecinde Trafik ve İnsan Sempozyumu*. Sakarya; 2004:285-292.
- [3] Darcin, M, Darcin, ES. Relationship between quality of life and child traffic fatalities. *Accident Anal Prev* 2007;39(4): 826-832.
- [4] NHTSA, Traffic Safety Facts 2001: Occupant Protection. *US Department of Transportation, N. Center for Statistics and Analysis*, Washington, DC:2002.
- [5] Derrig RA et al. The effect of population safety belt usage rates on motor vehicle-related fatalities. *Accident Anal Prev* 2002;34:101-110.
- [6] McGwin, G. Jr. et al. The association between occupant restraint systems and risk of injury in frontal motor vehicle collisions. *J Trauma* 2003;54:1182-1187.
- [7] Cummings, P, Wells, JD, Rivara, FP. Estimating seat belt effectiveness using matched-pair cohort methods. *Accident Anal Prev* 2003;35: 143- 149.
- [8] NHTSA. Observed safety belt use from December 1999 and June 2000 MiniNOPUS. Research Note. *U.S. Department of Transportation*. Washington, DC;2000.
- [9] Glassbrenner, D. Safety belt and helmet use in 2002. Overall results. *Department of Transport*. Washington, DC; 2002.
- [10] OECD. Safety on Roads What's the Vision? *OECD Publications*. Paris:2002.

- [11] ETSC. Cost Effective EU Transport Safety Measures. Brussels;2003.
- [12] Shin, D, Hong, L, Waldron, I. Possible causes of socioeconomic and ethnic differences in seat belt use among high school students. *Accident Anal Prev* 1999;31(5):485–496.
- [13] Hong, S, Kim, D, Kritkauskys, K, Rashid, R. Effects of imitative behavior on seat belt usage: Three field observational studies. *Proceedings of the Human Factors Society Annual Meeting* 1998;2:1093–1097.
- [14] Çalışır, F, Lehto, MR. Young drivers' decision making and safety belt use. *Accident Anal Prev* 2001;34 (6): 793–805.
- [15] Darçın, M, Alkan, M, Darçın, ES. Cezalandırma ve eğitimin emniyet kemeri kullanma davranışı üzerindeki etkisi. 3rd National Traffic and Road Safety Congress. Ankara; 2005.
- [16] Hagenzieker M. Effects of incentives on (SB) use: a meta-analysis. *Crash Anal Prev*, 1997;29:759–777 .
- [17] Williams, AF, Wells, JK, McCartt, AT. Preusser, D.F., “Buckle Up NOW!” An Enforcement Program to Achieve High Belt Use. *J Safety Res* 2000;31 (4): 195–201.
- [18] Shimamura, M, Yamazaki, M, and Fujita, G. Method to evaluate the effect of (SB) use by (RSP)s on the injury severity of front seat occupants. *Accident Anal Prev* 2005;37:5–17.

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