



Investigation of seat belt use among the drivers of different education levels

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ABSTRACT

Seat belt use habit has been investigated according to the education level of drivers. Copies of a questionnaire were distributed to 1000 participants of four different education levels. Factors such as seat belt usage habit, restricting factors and crash data have been investigated. Data have been analyzed with SPSS 15.0 software. Increased level of education leads to increased seat belt usage, lower numbers of crashes and crash severities. The factors restricting seat belt use are lack of habit, discomfort and short distance driving. The use of precaution signal and increases in comfort can increase seat belt usage. The primary and high school education on traffic safety and seat belt usage has been serving the purpose.

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1. Introduction

The use of motor vehicles help fast movement of people and merchandise with ease, wider range of potential destinations and relatively low cost. However, motor vehicles use also has a number of undesirable results like noise, pollution and traffic accidents. Traffic accidents are one of the important public health problems which threaten modern society (Parada et al., 2001; Cunill et al., 2004). The use of seat belts is one of the most effective ways to reduce traffic accident fatalities (Evans, 1996; Koushki et al., 2003). The use of seat belts prevents certain types of injuries to vehicle occupants and/or lessen their severity (Cooper, 1994; Koushki et al., 2003; Cunill et al., 2004; McCart and Northrup, 2004; Strinea et al., 2010). It is estimated that the three-point seat belts reduce the probability of driver fatality in a crash by 45% and reduce the probability of moderate to serious injury by 60%. 100% belt use could reduce the of driver deaths by 12% and the number of moderate to seriously injured drivers by 20% (Farmer and Wells, 2010).

In spite of the proved effectiveness of belt use and the legal arrangements, low rate of seat belt use is one of the main traffic safety problems in Turkey (Şimşekoğlu and Lajunen, 2008). Individual characteristics are associated with belt use. The belt use rates are lower for males, less educated people and drivers of older vehicles (McCart and Northrup, 2004). In 2009, 1.034.435 motor vehicle accidents in Turkey resulted in 4.300 deaths and 200.405 injuries (EGM Trafik Hizmetleri Başkanlığı, 2010). Increases in motor vehicle accidents in Turkey have forced the drivers to drive their cars more carefully. The disuse of seat belt act is one of the main reasons of

accidents. The aim of this study is to investigate the seat belt usage habit of the drivers of different education levels. For this purpose a questionnaire has been prepared and applied on 1000 participants in Sakarya, Turkey.

2. Method

To determine the seat belt usage of the drivers, copies of a questionnaire which included 18 questions were distributed to 1000 participants. The questionnaire was initially applied to 30 participants to determine its final status. The study was applied according to a sampling method, in the Centrum of Sakarya which represented different demographic features. Participants of university graduates and higher education graduates have been chosen with direct conversation method by applying a questionnaire in the campus of Sakarya University. Participants of primary and high education graduates have been attended to the questionnaire in the Centrum of Sakarya. Improperly and inadequately filled in forms were eliminated, leaving only the proper forms for evaluation. Data have been analyzed with SPSS 15.0 software. The participants' ages ranged from 18 to 46 with a gender distribution of 20% female and 80% male. All of the participants were licensed drivers. The participation was voluntary and all replies were anonymous. The participants were divided into four categories according to their education levels: primary or elementary school graduates, high school graduates, university students or graduates, higher education (Msc and PhD) students, with 250 participants for each group. Gender and education level data can be seen in Fig. 1. Active driving experience of the participants is given in Fig. 2.

The questionnaire consisted of three sections. The participants were first questioned on education level, gender, age, active driving experience and vehicle types. In the Section 2, the

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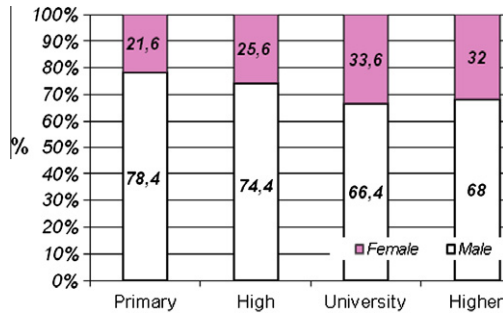


Fig. 1. Gender and education level of the participants.

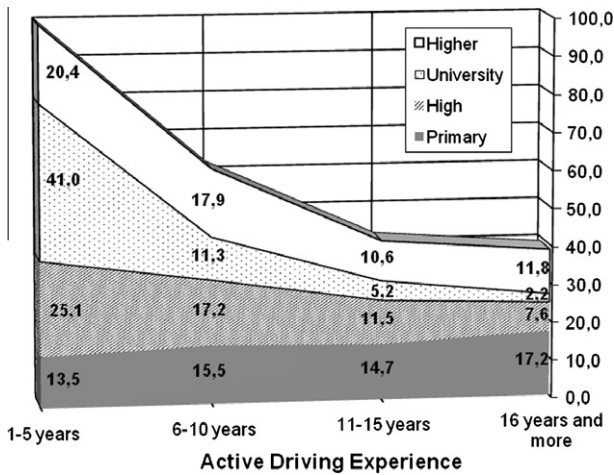


Fig. 2. Active driving experience of the participants.

participants were asked about their seat belt use habits. Finally the participants were asked about their opinions of seat belt use.

Hypothesis of the study was based on participants' education status showing difference according to seat belt use behavior (H1) and to seat belt use opinion (H2).

3. Results

According to the demographic information given in Table 1, 71.8% (718) of the participants are males and 28.2% (282) are females. The average age of the participants is between 25 and 31 with the ratio of 34.8 (348). The participants generally have 1–5 years of active driving experience. When the vehicle type is examined, it is seen that the participants drive automobiles with the ratio of 80 (800 participants).

The results are given as graphics between Fig. 3–10. The distributions of the results are given for the same education level. The evaluation of the questionnaire has been done in comparison with the Likert scale.

Fig. 3 shows that the seat belt usage is proportional to education level for definitely use option. 67.6% of the participants reported that they use (40.1%) or definitely use (27.5%) seat belts. (Cunill et al., 2004) reported in their study that more than 60% of the participants use always or almost always seat belt. Fig. 4 shows that a greater proportion of drivers with high school education did (definitely) not use their seat belt. The percentage for university and higher education graduates is very low.

The belief about seat belt protection against accident is seen from Fig. 5. As the education level increases the belief percentage increases too.

The primary school and high school graduates have the highest risk (or probability) of a fatal crash on urban roads and highways

Table 1 Demographic information.

	Participants	%
<i>Education level</i>		
Primary	250	25
High	250	25
University	250	25
Higher	250	25
<i>Gender</i>		
Male	718	71.8
Female	282	28.2
<i>Age</i>		
18–24	197	19.7
25–31	348	34.8
32–38	213	21.3
39–45	145	14.5
45 and +	97	9.7
<i>Active driving experience</i>		
1–5 years	412	41.2
6–10 years	254	25.4
11–15 years	173	17.3
16 years and more	161	16.1
<i>Vehicle type</i>		
Automobile	800	80
Minibus	114	11.4
Light truck	52	5.2
Truck	34	3.4

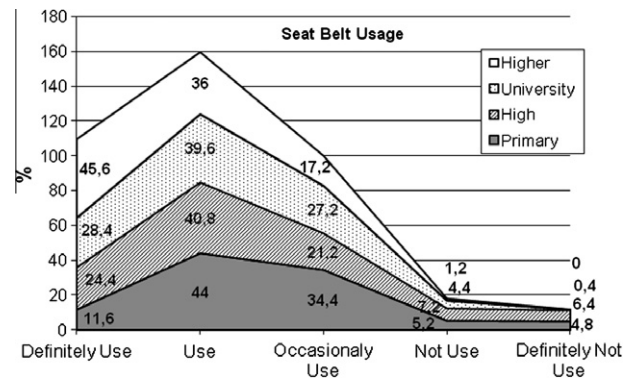


Fig. 3. Seat belt usage in comparison to education level.

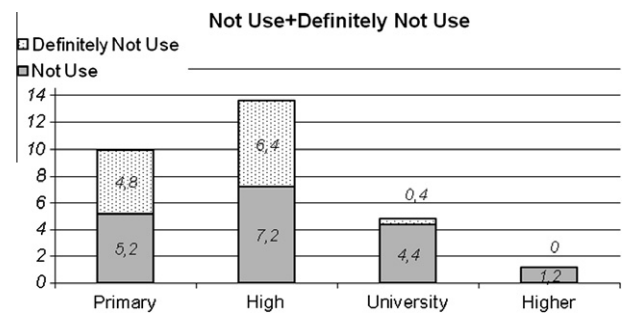


Fig. 4. Sum of the definitely not use and not use options for seat belt.

(Fig. 6). As the education levels of the drivers increase both the crash and fatal-seriously injuries decrease to the lowest numbers. The numbers of crashes of drivers with higher education levels also have the lowest number of 146. The total number of fatalities among such drivers is 28. The percentages are respectively 14.3% for school graduates, 10.7% for university student-graduates and 3.6% for higher education.

The factors restricting seat belt use can be seen in Fig. 7. Participants report discomfort and lack of habit of using seat belt as the

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