

Seat-Belt Use and Related Factors Among High School Students in a Semi-Rural Area of Western Turkey

Türkiye'nin Batısında Bir Yarı Kırsal Alandaki Lise Öğrencileri Arasında Emniyet Kemerini Kullanımı ve İlişkili Faktörler

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ABSTRACT

Objective: Traffic injuries are a public health issue that costs millions of death and injuries each year. The majority of all traffic deaths and injuries occur in rural and semi rural areas of developing countries as Turkey. The aim of present study was to determine seat belt use and related factors in high school students living in semi-rural area of Eskisehir.

Methods: This cross sectional study was carried out in four semi-rural area of Eskisehir in 2014-2015 academic season. Students from 14 high schools were included into the study. A two part questionnaire was prepared to collect data.

Results: In our study 22.9% of students do not use seat-belt in traffic. According to the multivariate logistic regression analyses no seat-belt use behaviour associated with being male 1.48 (1.02-2.13), having unemployed father 1.76 (1.20-2.58), no helmet use 1.64 (1.11-2.42), exhibiting violent behaviour at school 1.90 (1.36-2.65) and smoking 1.50 (1.01-2.25).

Conclusion: An effective traffic education program must be planned and enforced in all high schools to improve students' negative behaviours about the seat-belt use. More effective school health programs and other policy and programmatic interventions are needed to address this issue.

Key Words: Adolescent, seat-belt use, traffic accidents, semi-rural area

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ÖZET

Amaç: Trafik kazalarına bağlı yaralanmalar her yıl milyonlarca ölüme ve yaralanmaya neden olan bir halk sağlığı sorunudur. Türkiye gibi gelişmekte olan ülkelerde trafik kazalarına bağlı ölümler ve yaralanmaların çoğu kırsal ve yarı kırsal bölgelerde görülmektedir. Araştırmanın amacı Eskisehir yarı kırsal bölgesindeki lise öğrencilerinde emniyet kemeri kullanımı ve ilişkili faktörlerin belirlenmesidir.

Yöntem: Kesitsel tipteki bu çalışma 2014-2015 eğitim öğretim döneminde Eskisehir'in dört yarı kırsal bölgesinde gerçekleştirildi. Bu bölgelerdeki 14 lisedeki öğrenciler çalışmaya dahil edildi. Verilerin toplanmasında iki bölümden oluşan bir anket form kullanıldı.

Bulgular: Çalışmada öğrencilerin %22.9'u emniyet kemeri kullanmıyordu. Çok değişkenli lojistik regresyon analizine göre erkek olmak, işsiz babaya sahip olmak, kask kullanmamak, okulda şiddet davranışı sergilemek ve sigara içmek emniyet kemeri kullanmama ile ilişkili bulundu.

Sonuç: Öğrencilerin emniyet kemeri kullanımı konusundaki olumsuz davranışlarını iyileştirmek için etkili bir trafik eğitim programı tüm liselerde planlanmalı ve uygulanmalıdır. Bu sorunun çözümü için daha etkin okul sağlığı programlarına, programları müdahalelere ve politikalara ihtiyaç olduğu görülmektedir.

Anahtar Sözcükler: Adolesan, emniyet kemeri, trafik kazaları, yarı kırsal bölge

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INTRODUCTION

Traffic injuries are a public health issue that costs countries millions of dollars and each year approximately 1.2 million people die and 50 million more are injured or disabled as a result of traffic accidents (1-4). Every day more than 1000 people under the age of 25 are killed in traffic crashes around the world. Traffic injuries are the first cause of death globally among 15-19 year olds, while for those in the 10-14 years and 20-24 years age groups they are the second leading cause of death. Combination of physical and mental immaturity among young people and inexperience and youth related lifestyles can increase the risk of usually male young road users to traffic accidents (5). The vast majority of all traffic deaths, injuries and disabilities occur in low and middle income countries as Turkey (1).

According to Turkish Statistical Institute (TSI) data on 2013, approximately 45 thousand death and 2 million injury case occurred connected with traffic accidents between 2004-2013, also %14.3 of all deaths and %24.8 of all injuries occurred on adolescent age group in 2013. On the other hand more than 60% of all deaths and approximately %35 of all injuries due to traffic accidents occur in semi-rural areas in Turkey (6).

It was reported that lack of seat-belt use was the most effective risky behaviour in traffic on causing deaths and injuries. Seat-belts are very effective in preventing total ejections in fatal crashes, only 3% of the passengers using seat-belts were totally ejected, compared with 37% of unrestrained passengers (7). Analysis by the European Transport Safety Council estimates that seat-belts currently reduce driver fatalities by 40% (8).

Based on the Global Status of Road Report, only 50% of drivers and front-seat passengers use their seat-belts while on road traffic in Turkey (9). Even though these data refer to the general population, young drivers and front-seat passengers are less likely to use seat-belt than older drivers while in a moving vehicle (10). Adolescent are abstaining from using seat-belt due to some causes such as discomfort, forgetfulness, short-ranged or slow vacation, unesthetic appearance (11-13).

In the literature there is limited number of studies about seat-belt use in adolescent age group in semi-rural areas. For these reasons, determining the related factors about seat-belt use in adolescents, who have multiple risk factors for traffic accidents and live in semi-rural areas, is crucial. The present study was planned for determining related factors about seat-belt use in high school students living in semi-rural area of Eskisehir, Turkey.

METHODS*Subjects*

This cross sectional study was carried out in four semi-rural area of Eskisehir, Turkey in 2014-2015 academic season. Eskisehir where the majority of people deal with agriculture and industry is located in Central Anatolia and has a population of 780.000, with 83% living in the city centre and 17% living in rural and semi-rural areas.

There is an education and research region of Eskisehir Osmangazi University in Eskisehir, where the community based researches are studied. The region has four semi-rural counties (Alpu, Mahmudiye, Beylikova and Sivrihisar), 14 high schools and 2557 high school students. There are no schools for this specific age group in rural areas. Adolescents in rural areas attend the high schools in nearby towns. We reached 1465 (57.3%) student on days of study. Our effective response rates of students were greater than 50% that has been a level reported to be acceptable and reasonable for a questionnaire survey (14,15). All the students gave the oral consent form and responded the questionnaire.

Data collection

Necessary permits for study were taken. The study was adhered to the Declaration of Helsinki guidelines. Written consent form was obtained from the principals of educational institutions included the study.

A two part questionnaire was prepared to collect data. First part included socio-demographic specifications of students (school name, class, age, sex, family tape, state of education of parents, state of work of parents, income status of family, allowance level, educational success), second part included "Youth Risk Behaviour Surveillance System" questionnaire in 2013 which belongs to Disease Prevention and Control Center (CDC). "Youth Risk Behaviour Surveillance System" questionnaire contains six topic related to risky behaviors that cause deaths and injuries on adolescents (16).

Dependant variable of survey is determined with questions that related to seat-belt and helmet usage. In this study, family income status is determined with good, medium and bad according to student's perceptions. Students whose parents work on any income-generating job are depicted as "working."

Students who watch 3 hours or more television (TV) on a day are counted as "TV watcher" (17), also people who act violent behavior at least one time on school environment are accepted as they have "exhibiting violent behaviour at school". In study days, questionnaires filled up by themselves. Questionnaires took between 10 and 20 minutes to complete.

Statistical analysis

Collected datas are evaluated on IBM SPSS (version 20.0) Statistical Packaged Software. On the analysis between groups, chi-square analyse is used. On determining variates that related to seat-belt usage, we used multivariate logistic regression analysis. The model included independent variables that were found to be significant ($p < 0.01$) with the dependent variable. We based on $p \leq 0.05$ value as level of significance statistically.

RESULTS

The study group consisted of totally 1465 students. The mean age of students' was 16.0 ± 1.2 (min 13-max 22) years. Of the students, 51.8% ($n=759$) were male. Table 1 shows the characteristics of the study group.

Table 1 The characteristics of the study group ($n=1465$)

Characteristics	n(%)
Class	
9-10	854 (58.3)
11-12	611 (41.7)
Gender	
Male	759 (51.8)
Female	706 (48.2)
Family type	
Nuclear	1282 (87.5)
Extended	183 (12.5)
Income status	
Good	357 (24.4)
Moderate	1022 (69.8)
Poor	86 (5.8)
Mother's education status	
<8 years	938 (64.0)
≥ 8 years	527 (36.0)
Father's education status	
<8 years	633 (43.2)
≥ 8 years	832 (56.8)
Mother's working status	
Working	263 (18.0)
Not working	1202 (82.0)
Father's working status	
Working	1189 (81.2)
Not working	276 (18.8)

No seat-belt use was 22.9% ($n=335$) in the study group; 25.7% in males and 19.8% in females; 29.3% among students whose fathers was unemployed; 32.6% in smokers; 25.1% among those who also never used helmet in traffic; 30.1% among those who exhibited violent behaviour at least at school and 27.6% among those who watched TV three and more hours respectively. Table 2 summarizes characteristics of students' according to distribution by seat belt usage.

Table 2 Characteristics of students' according to distribution by seat belt usage

Variables	No seat belt use	Seat belt use	p value
	n=335	n=1130	
	n (%)	n (%)	
n=1465			
Class			
9-10	181 (21.2)	673 (78.8)	0.072
11-12	154 (25.2)	457 (74.8)	
Gender			
Male	195 (25.7)	564 (74.3)	0.008
Female	140 (19.8)	566 (80.2)	
Family type			
Nuclear	296 (23.1)	986 (76.9)	0.592
Extended	39 (21.3)	144 (78.7)	
Income status			
Good	66 (18.5)	291 (81.5)	0.004
Moderate	239 (23.4)	783 (76.6)	
Poor	30 (34.9)	56 (65.1)	
Mother's education status			
212 (22.6)	726 (77.4)	0.747	
<8 years	123 (23.3)	404 (76.7)	
≥8 years			
Father's education status			
160 (25.3)	473 (74.7)	0.055	
<8 years	175 (21.0)	657 (79.0)	
≥8 years			
Mother's working status			
58 (22.1)	205 (77.9)	0.729	
Working	277 (23.0)	925 (77.0)	
Not working			
Father's working status			
254 (21.4)	935 (78.6)	0.004	
Working	81 (29.3)	195 (70.7)	
Not working			
Smoking			
No	249 (20.7)	952 (79.3)	<0.001
Yes	86 (32.6)	178 (67.4)	

Variables	OR	95%CI	p value
		Lower Upper	
Alcohol consumption at least one time	246 (21.0)	924 (79.0)	0.001
No	89 (30.2)	206 (69.8)	
Yes			
Helmet use*			
No	173 (25.1)	517 (74.9)	0.011
Yes	41 (17.1)	199 (82.9)	
Exhibiting violent behaviour at school			
180 (18.9)	770 (81.1)	<0.001	
155 (30.1)	360 (69.9)		
No			
Yes			
TV watching (3 or more hour)			
202 (20.5)	781 (79.5)	0.003	
No	133 (27.6)	349 (72.4)	
Yes			
Duration of watching TV- median (min-max)	2 (0-5)	1 (0-5)	0.001

* 535 students, who never rode a motorcycle, excluded from this analysis (N=930).

According to the multivariate logistic regression analyses no seat-belt use behaviour associated with being male OR (95%CI); 1.48 (1.02-2.13), having unemployed father 1.76 (1.20-2.58), no helmet use 1.64 (1.11-2.42), exhibiting violent behaviour at school 1.90 (1.36-2.65) and smoking 1.50 (1.01-2.25). Table 3 shows the variables associated with no seat-belt use determined by a multivariate logistic regression analysis.

Table 3 Variables associated with no seat-belt use determined by a multivariate logistic regression analysis

Variables	OR	95%CI	p value
		Lower Upper	
Gender	1.476	1.022 2.130	0.038
Income status	0.751	0.546 1.033	0.078
Father's working status	1.760	1.201 2.580	0.004
Smoking	1.502	1.012 2.252	0.049
Alcohol consumption at least one time	1.112	0.751 1.645	0.596
No helmet use	1.639	1.110 2.421	0.013
Exhibiting violent behaviour at school	1.904	1.364 2.653	0.000
Duration of watching TV	1.076	0.987 1.173	0.096

DISCUSSION

In the literature there have been studies which emphasized lack of seat-belt use in adolescents and adult population all over the world (13,18,19). However, a few number of studies which evaluate seat-belt use in adolescents, who live in semi-rural areas and who were determined as very risky group in terms of risky health behaviours, were conducted.

Each year a large number of accident related deaths and injuries occur due to the lack of seat-belt use (20). The majority of these deaths and injuries happen in rural and semi-rural areas which the present study was conducted (21,22). For this reason, determining the risky traffic behaviours (seat-belt and helmet use) of adolescents who live in rural areas is vital.

In rural and semi-rural areas, traffic accidents causes more deaths and injuries due to some factors mentioned below; unsafe driving environment, lack of health services, low traffic density, lack of enforcement of legislations, lack of seat-belt use, physical conditions of roads (21-23). With parallel of this issue, in several studies, mortality rate in semi-rural areas where traffic intensity is fewer is more than in urban region (21,24-26).

In our study one of every four students never use seat-belt in traffic while passenger. No seat-belt use was determined higher in male students than female students. In addition being male was determined as an effective factor on no seat-belt use behaviour. Male adolescents are more insensitive than female adolescents about seat-belt usage in traffic (10,11,27). In the literature there were many studies emphasized that males exhibited risky health behaviours, such as no use seat-belt or speed in traffic, more than females (10,27,28). Males are mostly located in social circles than females and they are exposed to harmful habits and risky behaviors during their social communication. At that point, activities that carry out to block premature deaths on traffic accidents can be more beneficial particularly concentrated on the male adolescent.

It is determined that the lack of seat-belt use behavior is displayed more by the students whose fathers have no income-generating job in this study. The socio-economic structure is a decisive factor in the point of displaying these risky behaviors more on their live space or on traffic. In this point it is clear that it will be more efficient to concentrate the studies named risky behavior controls especially on adolescents who are in a worse condition in terms of socio-economic basis.

In this study, approximately %75 of the people stating themselves as bicycle or motorcycle riders or passengers of these vehicles express that they never use helmet. In literature there were some studies towards inadequacy of helmet usage on adolescents (29,30). This rating is found much higher on women than men unlike other risky behaviors in this study. The frequency of men riding bicycle or motorcycle is slightly higher than women in our country. Women are more likely travel in these vehicles as a passenger. Majority of women do not wear helmet while travelling as passenger on bicycle or motorcycle because these helmets are proprietary. The behavior of helmet disuse found in this study may be higher among women as a result of this issue.

In study group 3 hour and more TV watching behavior is more frequent in male adolescents. On the other hand, this risky behavior have not found effective upon lack of seat-belt use behavior. In the name of rise on frequency of seat-belt usage, broadcasting in suitable times can be beneficial because daily TV watching time is high and similar on both sexes.

Likewise, it is confirmed that lack of seat-belt behavior use is associated with other several risky behaviors in this study. This detection is important in the name of determining the necessity of an integrative view on adolescent health. It is possible that these people may display several risky behaviors not only in traffic but also in several areas.

At the result, young people who are the next generation of our country may face with several psychological restraints, identical crisis and at last health problems resulting in disabilities and deaths on early periods of their life. When looked upon the problem with an integrative perspective, we are in accord that interest, care and education which will be shown to these people is very important. World Health Organization (WHO) clearly stated the importance of education on prevention of risky behaviors that are seen on adolescents especially in traffic (1). Limitation of this study is student's assessments based on their behavioral specifications instead direct observation of their behaviors related to seat-belt usage.

In our study one of every four students do not use seat-belt in traffic. An effective traffic education program must be planned and enforced in all high schools to improve students' negative behaviours about the seat-belt use.

More effective school health programs and other policy and programmatic interventions are needed to address this issue.

Seat belt usage frequency by the students, who are especially males which are in not good socio-economic condition and showing several risky health behaviors, are determined lower. This issue is an important detection in the name of prevention of adolescent deaths and disabilities which are possible to occur in result of accidents.

Comprehensive studies are necessity in the name of determining the factors which affect negative ideas of these people about seat belt usage. Concentrating on these studies, planning and regulating a traffic education curriculum especially in schools are important. By the reason of TV-watching rates without gender difference are found high, it is important to increase frequency of visual and audial broadcasting towards stimulating positive manner on seat belt usage and to be role model of families to their children about seat belt usage.

Conflict of interest

No conflict of interest was declared by the authors.

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