کارگاه‌های آموزشی مرکز اطلاعات علمی

مقاله نویسی علوم انسانی

اصول تنظیم قراردادها

آموزش مهارت های کاربردی در تدوین و چاپ مقاله
Determinants of Behavior of Students as Pedestrian and Car Occupants in Relation to Traffic Laws in 2013, Gorgan, Iran; An Application of Health Belief Model

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ABSTRACT

Objectives: To determine the behavioral pattern of Golestan University of Medical Science (GUMS) students as pedestrian and car occupants in relation to traffic law based on Health Belief Model.

Methods: This cross-sectional study was performed during 2012 in GUMS. A total of 370 students of GUMS were selected using multi-stage sampling method including stratified and random sampling. Data were collected by using a reliable and valid questionnaire. All the participants filled the questionnaire and the data was extracted according to previously described method. Data were analyzed by using SPSS 18 Software. Descriptive statistic and Spearman correlation was used for analyzing the data.

Results: Mean age of the participants was 20.92±1.98 (range 17-32) years. Mean score of perceived susceptibility was 81.87±17.18, being in desirable level. Mean score of perceived severity was 73.39±18.4, being also in desirable level. Mean score of perceived benefits was 77.22 ±16.13, which was also assumed to be in desirable level. Mean score of perceived barriers was 53.46±16.27, assumed as moderate level. In the same way the mean score of practice was 66.17±17.51, so practice in students was in moderate level. Television was the most important cues to action.

Conclusion: Perceived susceptibility, perceived severity, perceived benefits regarding safety behaviors was in good level but perceived barriers and behavior was in moderate level and according to the importance of Television, we recommended appropriate intervention such as health education and advocacy, especially through national Television.

Keywords: Traffic Law; University students; Health belief model; Behavioral pattern.

Introduction

More than 1.2 million deaths occur every year on the roads of the world, and 20 to 50 million nonfatal injuries sustain due to road traffic crashes. These injuries and deaths have an immeasurable impact on the affected families. It is estimated that road traffic injuries are the eighth leading cause of
death in the world. They are the leading cause of
death for young people especially aged 15–29 years,
and as a result take a heavy toll on those entering their
most productive years and 59% of global road traffic
deaths have accounted for young adults aged between
15–44 years [1]. In Iran, traffic injuries are one of the
most important causes of unintentional injuries
that cause 70 deaths in every day [2]. Approximately
half of the road traffic deaths in the world occur
among motorcyclists (23%), pedestrians (22%) and
cyclists (5%) [1].

Safety behavior such as wearing seat belts, attention
to pedestrian light and walking across the street,
using pedestrian bridges or underpasses are very
effective in decreasing of the road accidents and
injuries but considering to the above subject safety
behaviors in pedestrian and car occupants is not in a
desirable level. For example, the risk of a fatal
injury is reduced by 40–50% for drivers and front
seat occupants as a result of wearing a seat-belt [1].
Approximately 13.8% of Iranian people do not use
seat belts [3]. Another study revealed that 63.3% of
female high school students do not use seat belts
[4]. A study showed 33.8% of the injured people as
a result of traffic accidents were in 20–29 years age
group [5]. One the other hand, University students
are amongst the most vulnerable groups as they are
categorized in 15–29 age groups and their behavior
play an important role in content of society behavior.

In spite of the importance of the subject,
understanding behaviors of pedestrian when crossing
remains as a challenge [6]. So using appropriate
theories and model for assessment of the behaviors
is necessary. Since the early 1950s, the Health Belief
Model (HBM) has been one of the most widely used
conceptual frameworks in health behavior research,
both for explaining change and maintenance of
health-related behaviors. Key Concepts of HBM
include perceived susceptibility, perceived severity,
perceived benefits, perceived barriers, cues to action
and self-efficacy. Perceived susceptibility refers to
belief about the chances of experiencing a risk or
getting a condition or disease, perceived severity
refers to belief about how serious a condition and
its sequel are, perceived benefits refers to belief
in efficacy of the advised action to reduce risk or
seriousness of impact, perceived barriers refers to
belief about the tangible and psychological costs of
the advised action, cues to action refers to strategies
to activate “readiness” and self-efficacy refers to
confidence in one’s ability to take action [7].

As mentioned above; understanding behaviors of
pedestrian remains as a challenge. So assessment of
the safety behavior is very important. Moreover, each
countries and population has a unique socioeconomic
and cultural condition, so behavior assessment in
each population is necessary. Several studies have
used this method for determining the behavioral
pattern of population toward road traffic rules [8–
16]. For instance in Turkey it was revealed that
perceived benefits had a positive relationship to seat
belt use but perceived barriers and cues to action
had a negative relationship to seat belt use [8]. This
subject has been evaluated internationally to a great
extent [17-36]; however data in this regards is scarce in
Iran. Therefore, the current study was designed
and performed in order to determine the behavior
predictors of Golestan University of medical science
students as pedestrian and car occupants based on
Health Belief Model in related to traffic laws.

Materials and Methods

Study Population

This is was a cross- sectional study being performed
in Golestan University of Medical Sciences (GUMS)
during 2013. Three hundred and seventy students
of GUMS were selected using multi stage sampling
method including stratified and random sampling, so
that according to students’ number of each school,
sample size in every school was calculated and then
by using random sampling method, samples were
selected in each school. Students who had disability
and unwillingness to participate in the study were
excluded. The study protocol was approved by
the institutional review board and medical ethics
committee of GUMS. All the recruited students gave
their informed written consents before inclusion in the
study.

Questionnaire

Data was collected by means of a questionnaire
being designed according to the Health Belief Model.
Validity of the questionnaire was evaluated by experts’
viewpoints and reliability of the questionnaire was
evaluated on the basis of Cronbach’s alpha that was
calculated to be 0.78. The questionnaire included
demographic characteristics (3 questions), perceived
susceptibility (5 questions), perceived severity (8
questions), Perceived benefits (6 questions), Perceived
barriers (7 questions), Cues to action (7 questions)
and practice (12 questions).

Perceived susceptibility, perceived severity,
perceived benefits and perceived barriers questions
were developed on the basis of five point Likert scale
(strongly agree, agree, neutral, disagree, strongly
disagree), so scores was between zero to four. The
highest score and lowest score was related to the most
desirable and most undesirable responses respectively
and a total score of 100 was justified. Cues to action
questions were developed as two answer choices (yes,
no) that one and zero score were used for yes and
no response respectively. Thus the total score was
calculated based on the percentage of each option
question. Practice questions were developed as three
answer choices (yes, somewhat, no) that two, one
and zero score were used for yes, somewhat and no
response respectively and a total score of 100 was
justified. According to range score in component of
perceived susceptibility, perceived severity, perceived
benefits and perceived barriers was between 0 to 100 scores. The scores between 0 and 33.99 were considered as low, 34 and 67.99 as moderate land 68 and 100 as high levels.

**Statistical Analysis**

All the information recorded in the questionnaires was entered into a computer database. Data were analyzed by Statistical package social sciences (SPSS Inc., Chicago, USA) version 18. Data is reported as mean±SD and proportions as appropriate. Spearman correlation test was used for assessing the linear correlation between the corresponding variables and the correlation coefficients were calculated. A 2-sided p-value of less than 0.05 was considered statistically significant.

**Results**

Overall we included 370 students who all finished the study. Mean age of participants was 20.92±1.98 (range 17 to 32) years. Among them there were 238 (64.3%) women and 320 (86.5%) singles. The baseline characteristics of the participants are summarized in Table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>20.92±1.98</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Men (%)</td>
<td>132 (35.7%)</td>
</tr>
<tr>
<td>Women (%)</td>
<td>238 (64.3%)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Single (%)</td>
<td>320 (86.5%)</td>
</tr>
<tr>
<td>Married (%)</td>
<td>42 (11.4%)</td>
</tr>
<tr>
<td>Unknown (No Response)</td>
<td>8 (2.2%)</td>
</tr>
</tbody>
</table>

Mean score of perceived susceptibility was 81.87±17.18, so perceived susceptibility in students was considered to be desirable level. In the same way the perceived severity in students was found to be in desirable level when the mean score was 73.39±18.4. Mean score of perceived benefits was 77.22±16.13, so perceived benefits in student was in desirable level. Mean score of perceived barriers was 53.46±16.27, thus the perceived barriers in students was in moderate level. Mean score of practice was 66.17±17.51 showing moderate level of practice in medical students. In related to cues to action, television was found to the most important cues to action (96.5%) and university professors was lowest important cues to action (55.4%) (Table 2).

There was no significant linear correlation between perceived susceptibility and behaviors (r=−0.021; p=0.682). In the same way, we did not find any significant linear correlation between perceived severity and behaviors (r=0.094; p=0.720). There was significant linear positive correlation between perceived benefits and behaviors (r=0.185; p<0.0001). There was significant linear negative correlation between perceived barriers and behaviors (r=−0.233; p=0.0001). There was significant association between behavior (p=0.018) and Perceived severity (p=0.008) with gender, but there was no significant association between perceived susceptibility, perceived benefits and perceived barriers with gender (Table 3). There was significant association between perceived benefits (p=0.003) and marital status, but there was no significant association between perceived susceptibility, perceived severity, perceived barriers and behavior with marital status (Table 4).

**Discussion**

Although vehicle crashes cannot be prevented completely but some of the injuries and severity can be prevented or minimized by simple protective ways such as using seat belts for car users [37]. The findings of the current study reveal that behavior
of the students as pedestrian and car occupants is in moderate level. Another previous study in Iran [38] showed that practice of pedestrians regarding traffic laws is weak. A study that was performed in Kerman showed that more than 50% of college students traveled unbelted [39]. It seems that the practice of university students is not in desirable level, so appropriate action should be undertaken for promoting their behavior regarding the road traffic rules.

We also found that there was no significant correlation between perceived susceptibility and behavior; these findings are contrary to previous reports [40]. Lund et al., [20] showed that the perceived risk and attitudes significantly predicted risk behavior and accident [20]. Lam [21] also showed that parental perception toward road environment as hazardous is associated with their safe road behavior as pedestrian [21]. He also highlighted the importance of cultural factors in risk perceptions, and safety behaviors; he suggested that cultural differences in risk perceptions should be considered kept in mind when designing and educational intervention [41]. It seems that in the present study, variation of perceived susceptibility in university students is not very wide, so the finding is expected. Moreover the difference may be occurring due to cultural differences in different population.

Our finding revealed, that there was no significant correlation between perceived severity and behaviors that is consistent with previous studies [40,42]. In current study, behavior was assessed via self-reports, so it can be under estimated, therefore we recommend that behavior pattern in future studies be assessed through other methods. We found that there was significant positive correlation between perceived benefits and behaviors that is consistent with other studies [40,43]. It seems promoting perceived benefits can be led to appropriate behaviors, so we recommended appropriate intervention especially in men for promoting their behaviors in this regards. Our finding revealed, perceived benefits in married students was significantly more than single one that is consistent with another study in related to helmet use [42]. It seems married people have an interest and attachment to the family that makes them feel have a greater commitment. Self-reporting is the most restriction of the study.

In conclusion, perceived susceptibility, perceived severity, perceived benefits regarding safety behaviors was in good level but perceived barriers and behavior was in moderate level and according to the importance of Television, we recommended appropriate intervention such as health education and advocacy, especially through national Television.

### Acknowledgments

The authors would like to thanks the students of Golestan University of Medical Science that participated in the study.

### Financial Disclosure

The authors have no financial interests related to the material in the manuscript.

### Funding/Support

This study has been supported by Goleatan University of Medical Sciences.
Implication for health policy makers/practice/research/medical education

In order to designing appropriate interventional program, especially educational intervention to reduce the prevalence of the risky behaviors in pedestrian.

Conflict of Interest: None declared.

References


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