

## Original Article

**The Comparative Health-Risk Behaviors between Boys and Girls of Freshmen at University of Tehran, Iran**Fatemeh Rahmati-Najarkolaei<sup>1</sup> \*Tahereh Kamalikhah<sup>2</sup> Farideh Goldoust-Marandy<sup>3</sup> Mohammadreza Jafari<sup>4</sup>

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**Abstract**

**Background and purpose:** Priority health-risk behaviors, often are established during childhood and adolescence, extend into adulthood, and are interrelated and preventable. This study was conducted to determine and compare the prevalence of risky behaviors on both sexes of freshman students enrolled in Tehran University, Iran.

**Materials and Methods:** This study was a descriptive-analytical type of cross-sectional survey which has used stratified sampling to select 432 students during 2011-2012. A questionnaire including, 14 demographic questions and 38 questions about risky behaviors such as unintentional intentional injuries, smoking habits, alcohol and drug use, sexual behaviors, nutritional habits, and physical activities was used as the instrument of the study. Attending student's club and passing medical examination, each student completed the self-reported questionnaire.

**Results:** The mean age of participants was  $23/2 \pm 5/1$ , the majority of them were single (90.5%), 80.6% were unemployed, and 60.2% were from other cities. The prevalence of smoking cigarette ( $P < 0.001$ ), using hookah ( $P < 0.001$ ), carrying a cold weapon ( $P = 0.049$ ), and driving without license ( $P < 0.001$ ) were more in boys than girls while eating fruit ( $P < 0.001$ ), vegetables ( $P = 0.049$ ), and meat ( $P = 0.041$ ) were more in girls. There were no significant differences in other risk behaviors ( $P > 0.05$ ).

**Conclusion:** Some health risk behaviors in boys were more than girls, and there is a possibility of increasing these high-risk behaviors in the university environment. Thus, keeping students under surveillance and adopting preventive actions play a crucial role, and comprehensive training plans to promote health behavior should be designed and implemented.

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**Key words:** Risky Behaviors, Health, Students

## 1. Introduction

High-risk behaviors that formed during youth and continued during adulthood are those which cause illness and death among youths and adults. In 21<sup>st</sup> century teens and youths are usually exposed to severe social changes that these changes can have a deep effect on health, damaging and high-risk behaviors. Variations were observed in many health-risk behaviors by sex, race/ethnicity, and grade (1).

For this purpose, the Centers for Disease Control (CDC) began the Youth Risk Behavior Surveillance System (YRBSS) in 1991 and every 2 years the prevalence of these behaviors is represented (2). Most of these risky behaviors including, smoking, using alcohol and drugs, and unsafe sexual behaviors began before 18 years old and by approaching youth periods, students will be more involved in High-risk behaviors (3). The previous studies indicate that doing one risky behavior paves the way for other high-risk behaviors (4-6). For example, a significant relationship has been found between smoking and other high-risk behaviors (7).

By studying high-risk behaviors, Melzer-Longe showed that the teens that drink alcohol are inclined to carry weapons and harm others twice as much as normal people (8). Furthermore, one study conducted in Babol city in North of Iran was showed a rather high frequency of risky behaviors among students and prevalence of fight, smoking, overweight and obesity were significantly higher in boys than girls (9).

Therefore, many behaviors are in the process of formation and fixation when student are at college (10) and with the special conditions of this period like living in a dormitory, no control of parents, distance from family and feeling loneliness, increase their vulnerability toward risky behaviors (11). A study of students' behavior in Brazil shows that some of the high-risk behaviors such as using alcohol, smoking cigarette and sexual behaviors have increased during the education period (12).

In Ansari's study, 48% of students started smoking after entering the university (13). Considering the irreparable harms of risky behaviors, it seems that the prevention is the best way for decreasing the health threatening behaviors in society. Surveillance system program about teens' behaviors is an important information source for the measure of prevalence and health-related changes in behaviors.

Recognition of these behaviors and prevention from the prevalence or stability of these behaviors among teens and youths will provide a healthy life and bring health and capability for this group. However, it is still not known what is an accurate statistic of prevalence of these behaviors in different ages, especially in freshman (as a basis for compare with high-risk behaviors of graduation students) is not available and few studies have been carried out in this field. On the other hand, other investigations failed to comparison these behaviors between boys and girls of freshman students. Therefore, the aim of this research is determined the prevalence of risky behaviors in new college students at University of Tehran, Iran and compare them between boys and girls. Thus, by comparing these behaviors at the time of education, the measure of susceptibility of the students will be identified and can be used in health-oriented programming.

## 2. Materials and Methods

This study was a cross-sectional, descriptive-analytic study. The participants were the freshmen who entered the university at October 2011-2012. Exactly number of students by degree level and age were taken from students affairs. Stratified sampling with regard to students' level and their field of study was used. The students of University of Tehran are divided into three fields: engineering, basic science and humanities. Hence, first the students were classified

according to their field of study and the level and gender and then the samples were selected from each class. The criteria for participating in the study were: students enrollment should take place in the 2011-2012, their age should range from 18 to 39 years old, they should agree to participate in the study, and they should not have handicap or disability and chronic disease.

Based on Neyman allocation formula, the estimation of sample size with an error of <5% and a power of 80% has been calculated approximately 450 individuals. Taking the failing into accounts, the size of the sample was calculated by the following formula, of which 18 questionnaire were excluded from the study since they were not returned.

$$n = \frac{(Z_{1-\frac{\alpha}{2}} - Z_{1-\beta})^2 s^2}{\epsilon^2}$$

In this study, A questionnaire originated from (YRBSS CDC) (2) that the study was translated and validated by Garrmaroudi et al. (14) was used as the instrument of the data collection. This questionnaire consisted 14 demographic questions (age, gender, height, weight, degree of education, the college where they study, their parents' education and their employment status) and 38 questions about the risky behavior (including unintentional/intentional injuries, smoking, drinking alcohol, drug use, sexual behavior, dietary habits, weight loss, physical activities). Seven questions of the questionnaire were yes, or no questions and other questions have answers such as: never, rarely, sometimes, often and always. Those were ranked by the grade of 1-5.

The amount of Cronbach's alpha coefficient of questionnaire used in the study done by Garrmaroudi et al. (14) was changing from 0.64 to 0.87 Indicating a favorable internal consistency and good test-retest reliability of the tool. In this study, the questions were initially given to 50 students,

and they were asked to tell their opinions about the content of questions and the way of answering them. Then by calculating Cronbach's alpha coefficient, the internal consistency of all questions was 0.82. The participants were orally asked whether they have consent to enter the study or not. Then, they were given the required information to fill up the questions. During the data collection, high attention was paid to the anonymity and confidentiality of the questionnaire. The present study is the result of approved proposal in the health research center of Baqiyatallah University of medical sciences. SPSS for Windows (version 16; SPSS Inc., Chicago, IL, USA) and chi-square test were used for analyzing the collected data.

### 3. Results

The results of this study were showed that among 432 students, 56% were female (242) and 44% were male (190), 90.5% were single, 9.3% were married, and 0.2% was widow or divorced. 19.4% of the participants were employed. 39.8% were native, and 60.2% were nonnative. The mean age was  $23.2 \pm 5$ . Table 1 shows the mount of risky behaviors that endanger the personal health and aggressive behaviors with respect to gender. The results showed that 13.1% of students had carried a weapon in the previous month, and 14.8% (63) had physical attack from which 8.9% had gone to the doctor or to the clinic. Significant difference were seen in driving ( $P < 0.001$ ) and carrying weapon ( $P = 0.049$ ) in tow gender.

Table 2 shows the frequency of physical activities and dietary behaviors. 26.5% of students often or always have physical activities, but there was no significant difference between male and female students. However, daily consumption of fruit ( $P < 0.001$ ), vegetable ( $P = 0.049$ ) and meat ( $P = 0.041$ ) and were respectively 27.7 and 19.2 and 29.7%, but there was significant

difference between the two genders. However, it is important to mention that there was no

significant difference between regular using of dairy and breakfast ( $P > 0.05$ ).

**Table 1.** Distribution of high-risk behaviors according to the gender among freshmen of University of Tehran

	Male N (%)	Female N (%)	Sum up N (%)	P-value
Fastening seatbelt when someone else is driving				
Never	36 (8.4)	23 (9.5)	13 (6.8)	0.089
Sometimes	141 (32.7)	80 (33.2)	61 (32.1)	
Often	116 (26.9)	53 (22.0)	63 (33.2)	
Always	138 (32.0)	85 (35.3)	27.9 (53.0)	
Using driving helmet				
Never	161 (54.9)	84 (62.7)	7 (48.4)	0.098
Sometimes	77 (26.3)	27 (20.1)	50 (31.3)	
Often	22 (7.5)	8 (6.0)	14 (8.8)	
Always	33 (11.3)	15 (11.2)	11.3 (18.0)	
Driving without driving license				
Never	304 (74.0)	193 (84.3)	111 (61.0)	<0.001
Sometimes	83 (20.2)	31 (13.5)	52 (28.6)	
Often	10 (2.4)	2 (0.9)	8 (4.4)	
Always	14 (3.4)	3 (1.3)	6 (11.0)	
Carrying weapons and stabbing				
Never	371 (86.9)	210 (88.2)	162 (85.2)	0.049
Sometimes	43 (10.1)	19 (8.0)	24 (12.7)	
Often	7 (1.6)	4 (1.7)	3 (1.6)	
Always	6 (1.4)	5 (2.1)	1 (0.5)	
Physical conflict during the last 12 months				
Never	363 (85.2)	208 (87.8)	155 (82.0)	0.41
Sometimes	55 (12.9)	24 (10.2)	31 (16.4)	
Often	3 (0.7)	2 (0.8)	1 (0.5)	
Always	5 (1.2)	3 (1.2)	2 (1.1)	

N: Number

**Table 2.** Distribution of physical activities and nutrition behaviors according to gender among freshmen students of Tehran University

High-risk behavior	Male N (%)	Female N (%)	Sum	Value
Physical activity				
Never	34 (18.0)	26 (10.8)	60 (14.0)	0.089
Sometimes	107 (56.6)	149 (61.8)	256 (59.9)	
Often	30 (15.2)	44 (18.3)	74 (17.2)	
Always	18 (9.5)	22 (9.1)	40 (9.3)	
Using dairy				
Never	13 (6.9)	12 (5.0)	25 (5.8)	0.098
Sometimes	69 (36.5)	87 (36.1)	156 (36.3)	
Often	60 (31.7)	70 (29.0)	130 (30.2)	
Always	47 (24.9)	72 (29.9)	119 (27.7)	
Fruit				
Never	9 (4.8)	3 (1.3)	12 (2.8)	<0.001
Sometimes	84 (44.9)	66 (27.7)	150 (35.2)	
Often	52 (27.8)	94 (39.2)	146 (34.3)	
Always	42 (22.5)	76 (3.8)	118 (27.7)	
Vegetables				
Never	9 (4.8)	14 (5.9)	23 (5.4)	0.049
Sometimes	103 (54.4)	69 (28.8)	172 (40.1)	
Often	59 (27.0)	97 (40.6)	148 (34.6)	
Always	26 (13.8)	59 (24.7)	85 (19.9)	
Meat				
Never	7 (3.7)	4 (1.7)	11 (2.6)	0.041
Sometimes	69 (36.3)	59 (24.4)	128 (29.7)	
Often	71 (37.4)	93 (38.6)	164 (38)	
Always	43 (22.6)	85 (35.3)	128 (28.7)	

N: Number

Table 3 shows that the frequency of using cigarette, hookah, drugs, and sexual relationships. 47.6% of the participants stated that they smoke in their relatives' houses. Using of hookah during the last year was 27.6% and using any of the drugs were as follow:

Neonatal abstinence syndrome (NAS) (1.1%), opium (1.3%), ecstasy (0.7%), hashish (0.4%), morphine (0.9%), alcohol (4.6%), steroid and ecstasy (2.1%), psychotropic tablets (0.9%), however, there is no significant difference between them ( $P > 0.05$ ).

#### 4. Discussion

The results of this study indicated that there is no significant difference between the two genders regarding the majority of high-risk behaviors. Smoking, using hookah, carrying a cold weapon, driving without a license were mostly frequent among boys, and eating fruits, vegetables and meat were mostly frequent among girls. In this study, the percent of regular smoking of students is 5.5% which, in comparison with other studies carried out by Rezakhani et al. (15) (22%), Taraghijah et al. (16) (30.8%), and Jafari and Aminzadeh (17)

(30.3%), indicated a small value and the reason for this small value might be that the students were freshmen. In Ansari et al. (13) and Jafari and Aminzadeh (17) studies, respectively, 48% and 53% of the students who started to smoke were freshmen. Also a study in Brazil (12) showed that amount of smoking among the students who are in the last years of their study was high. However, the experience of smoking (27%) was in line with Taremian et al. (18) (24%) and Momen-Nasab et al. (19) (25%). In general, comparing the above studies indicate that the amount of smoking is increasing among the students of Tehran universities before and after 2008. Hence, it seems that it is necessary to plan some solutions and rules to control smoking in the universities. A significant relationship was identified between the amount of smoking among students and smoking of relatives at home. 47.6% of participants stated that there was a person at their home who smokes. Friends, sisters, brothers, parents may influence on the smoking of the participants, but friends can play a greater role (13). Friends, pleasure, and amusement, are among the reasons of smoking by participants (13, 15, 20-22).

**Table 3.** Distribution of high-risk behavior according to gender among freshmen students of Tehran University

High risk behavior	Male N (%)	Female N (%)	Total	P-value
Hookah smoking in the past 12 months				
Never	115(61.5)	194 (80.8)	309 (72.4)	<0.001
Sometimes	65 (34.7)	41 (17.1)	106 (24.8)	
Often	5 (2.7)	5 (2.1)	10 (2.3)	
Never 2	(1.1)	0 (0)	2 (0.5)	
Smoking experience				
No	120 (63.5)	191 (80.6)	311 (73.0)	<0.001
Yes	69 (36.5)	46 (19.4)	115 (27.0)	
Chain smoking				
No	170 (91.4)	223 (97.0)	393 (94.5)	0.006
Yes	16(8.6)	7(3.0)	23 (5.5)	
Alcohol consumption during the past year				
No	177 (92.3)	232 (97.2)	409 (95.4)	0.147
Yes	13 (6.8)	7 (2.8)	20 (4.6)	
Drug use during the past year (Nas-opium-pills X-cannabis-morphine-oral and psychotropic drugs)				
No	182 (95.8)	233 (97.5)	154 (96.7)	0.393
Yes	8 (4.2)	6 (2.5)	14 (2.3)	
Sexual relations				
No	175 (92.6)	227 (95.8)	402 (94.4)	0.156
Yes	4 (7.4)	10 (4.2)	24 (5.6)	

N: Number

There was a significant difference between male and female with regard to the prevalence of smoking that is in line with the above studies. Young and teenager females do not smoke in public, and if they have tendencies to smoke in public, they do it occasionally. The use of hookah in this study (27.6%) during the year, in comparison with the study carried out by Taraghijah et al (40.3%) was less frequent among the students (16); however, in Taremian et al study amount of using hookah was reported 22.1% and in the Rezakhani et al study it was 23.3% (15-18). In a study in Syria, it was reported that use of hookah was 23.5% (23).

The frequency of using hookah in both genders was significant and it was in line with Hajian et al study (9). The increasing use of hookah should be considered well. In comparison to other studies carried out by Taremian, et al. (18) (12%), Momen-Nasab et al. (19) (9%), Siam (24) (10.5%), Mohammadi et al. (25) (20.9%), the frequency of using alcohol among the students in last year was 4.6% which indicated a small value. But the results of Dehghani et al study in the Yazd University of Medical Science indicated a smaller value than the present study (22). There was no significant difference between the two genders which was in contrast with Hajian et al study (9). However, this result was in line with the study carried out on young people in America (26). It shows that the most frequent drugs were hookah, cigarette and alcohol which were in line with the study of Momen-Nasab et al (19), Dehghani et al. (19) and Taremian, et al. (22). The frequency of using drugs in this study was 3.3% except for alcohol. This result was in line with of Hajian et al study (9). However, compared with other studies carried out in Khorramabad and Gilan, there was a smaller frequency. Frequency of consumption was ordered as follow: steroid, opium, NAS, morphine, psycho topic tablets, ecstasy and hashish. There was no significant difference

between two genders in terms of using drugs. This difference was not significant in the study carried out by Hajian et al (9), though these differences were significant in the studies of Taremia et al (18), Dehghani et al (22), and Zarrabi et al (27). The consumption of each drug was more in America and in most Brazilian freshmen.

It seems that as regard to alcohol, drugs and other illegal drugs, certain necessary trainings, further monitoring in dormitories, student screening and sending the addicted to drug addiction treatment center will have a significant impact on preventing the spread of addiction at the university level. In this study, 5.6% of people have experienced sex, and there was no significant relationship between the two genders. Yazd study (32%) of university students and Garrmaroudi et al study of high school students in Tehran (20.2) indicated a high prevalence of drugs use (14, 21-27). CDC 2011 reports that the prevalence of sex is 45%, which did not change from 2001 and also there is a significant difference between the two genders (28). Franca and Colares study also showed that 39.1% of newcomer students have experience sex within the last month, and this value for juniors was 71.2% (12). In the present study, there is a significant association between sexual experience and familiarity with satellite programs. According to the CDC in 2010, 26% of new HIV infections were seen among young people aged 24-13 (29). In this study, over 55% of students stated that they received no education about AIDS prevention at university or by family, and 7.1% have done of high-risk behaviors, which are a way for HIV transmission. Informing young people at junior school about sexual health and behavior has a key role in preventing this behavior.

With respect to observing safety principle in vehicles, it was found that 32% will usually use the seat belt when someone else is the drive (9, 22). In Brazil, 97.1% students and 90% of young people in America used the belt

(12, 26). Comparing Iran with the two above-mentioned country, a significant difference was found. Front seat safety belt reduces 45 % of death and 50% of serious injuries (30). 54.9% of the students also stated that they did not use helmets when riding motorcycles which in Momen-Nasab (84.4%) and in America (86%) was reported (18, 26). We know that using helmets can prevent 85-88% of head injuries, but only less than a quarter of motorcyclists use helmets (30). Zargar and his colleagues conducted a study on motorcycle injured in Tehran and came to this conclusion that heat is the reason of not using helmets in spring and summer. In this study, there was no significant difference in behavior regarding the two genders (31).

The results showed that 13.1% of students have carried a cold weapon s in the last month which is similar to the results of the study carried out by Momen-Nasab, et al (19).

14% (n = 63) had a physical fight in the past year that 8.9% (38 subject) went to a physician or clinic. Khoramabad and Babol students experienced more physical fight; however, they need less clinical attention (12, 26). In the present study, daily consumption of fruit and dairy, vegetable, and meat were respectively 27.7%, 19.9%, and 29.7%. In comparison with the Brazilian college students and American high school students, it is regarded as malnutrition (12, 26), The results presented by Momen-Nasab et al. also showed that many students did not use fruit, vegetable and dairy in their daily diets, while the prevalence of junk food and soft drink consumption was 50% (19). In the present study and in Momen-Nasab's et al. (19) study, the prevalence of healthy eating behavior was much more among girls. 26.5% of students, often or always, had sport activities during the past year and there was no significant difference between the two genders. In Fazel et al study, only 38% of students had enough physical activity that in comparison with girls, this index was larger among boys (32). Physical activity among

Brazilian freshmen was 34.9%. One study conducted in 2007 was showed that 40% of Iranians had low physical activity (33). We conclude that the level of knowledge cannot have an impact on physical activity of the community while the educated people who have access to science resources and are aware of the dangers associated with obesity and not having physical activity, are subjected to such damages. Generally speaking, compared to other studies, the prevalence of high-risk behaviors in the present study was less, which might be due to the fact that students were freshmen. Although these data and analyses are useful in practice, they have some limitations. First, data are self-reported and may be less accurate than would be the data collected by means of observation or record abstraction. Second, this study is cross-sectional, longitudinal Study is need to address trend in increase or decrease of health risk behaviors changes and also related factors for that changing which may be investigated in further studies.

Considering the importance of students' physical and mental health as well as healthy and happy labor to run the country in the future, recognition, prevention, and treatment of any factor that may affect their health is necessary. Students also are an appropriate sample for people in the community, especially young people; however, their unhealthy behavior can have a bad effect on people. In conclusion, this study proposes that identifying high-risk behaviors, educating people and creating an appropriate lifestyle are needed to protect the capital and to have a healthy adult's generation. Programs for establishing amusement parks and holding sports and art classes in various fields to fill the spare time and holding seminars and conferences to promote students' awareness of the harmful physical, psychological and social risk behaviors can be an effective step to prevent this behavior. The mass media, especially radio and television can be very effective in this area.

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