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Risky Behaviors and its Correlates among University Students: A Cross-Sectional Study in Southeast Iran

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Abstract

Background: High-risk behaviors are among the most apparent social problems, with irreversible consequences for individuals and society. This study compared high-risk behaviors among health and non-health science university students in southeastern Iran.

Methods: This was a cross-sectional study. Between 2017 and 18, 626 students at the University of Sciences and the University of Health Sciences in Kerman were selected by quota sampling. The data was collected using the demographic questionnaire and the Iranian adolescent riskiness scale.

Results: There was no significant difference between non-health (74.94 ± 23.0) and health science students (72.43 ± 22.33) regarding high-risk behaviors score ($P > 0.05$). The non-health science students were significantly more inclined towards the components of smoking, sexual relations, and sexual orientation towards the opposite sex than the health science students ($P < 0.05$).

Conclusion: To reduce high-risk behaviors, designing and implementing different interventions in each university is essential.

What is already known about the topic? Risky behaviors among university students, such as substance abuse, unsafe sex, and reckless driving, are well-documented and linked to various factors, including psychological stress, peer influence, and lack of awareness. Studies in different regions, including Southeast Iran, highlight that these behaviors often correlate with academic pressure, mental health issues, and socio-cultural dynamics. However, localized data on specific patterns and predictors in Southeast Iran are limited, emphasizing the need for targeted research in this context.

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Introduction

In the cycle of human life, the transformation is a permanent and dominant phenomenon. Adolescence is a multidimensional stage of human development, which has significant effects on health-related behavior (Ansari-Moghaddam et al., 2015). From the perspective of researchers, entering university is one of the most critical stages of transformation and transient periods in the lives of young people. People in this period face new challenges in education, social relationships, and other fields. These changes lead to increased levels of stress and adaptive and behavioral problems, including high-risk behaviors (Asadi et al., 2011). On the other hand, admission to the university has made the individual more autonomous. Despite improvements in impulse control following natural growth, emotional, cognitive, and behavioral processes remain immature during adolescence (Ansari-Moghaddam et al., 2015). Thus, students feel more autonomy in their lifestyles and behaviors, and many tend toward unhealthy behaviors and high-risk styles and risky behaviors can negatively affect a person's health and their social and educational performances (Ansari-

Moghaddam et al., 2015; Khazaei et al., 2017; Mohammadzadeh Ebrahimi et al., 2015; Naemi & Faghihi, 2015).

High-risk behaviors refer to behaviors that endanger the health and well-being of adolescents, youths and other people in the community (Atadokht et al., 2014). The general concept of high-risk behavior includes a series of actions that cause serious harm to the person involved in this behavior and the essential individuals in his life and cause unintentional damage to other innocent people (Kazemeini & Modarres Gharavi, 2013). High-risk behaviors are mainly classified into six categories: smoking, substance abuse, unhealthy sexual behavior, physical inactivity, unhealthy nutrition, and behaviors associated with injuries and trauma (Atadokht et al., 2014; Rasic et al., 2009; Reid et al., 2015). Khazaei (2017) argues that according to studies conducted in Tehran and Rasht on students, the results of this study showed that the prevalence of hookah, smoking, alcohol, opium, cannabis and ecstasy tablets had been 34%, 24%, 17%, 2.3%, 2.2%, and 0.7%, respectively in Tehran University. Also, the prevalence of smoking, alcohol, opium, cannabis and ecstasy tablet has been 24.3%, 10.5%, 4.87%, 2.2%, and 7.25%

respectively in Rasht University (Khazaei et al., 2017). In a study conducted by Kwaku Oppong Asante (2015) on 227 homeless youths in Akra and Ghana, the results showed that 87.6% of the subjects had psychological problems and high-risk behaviors (Asante et al., 2016). Zareipour (2010) also found that 33.5% of Tehran University medical students had a favorable opinion about smoking, which is one of the high-risk behaviors (Zareipour, 2011). It is anticipated that the smoking alone will have been led to the disease and mortality of 10 million people by 2030. If injuries from other high-risk behaviors such as violence and sexual behaviors are taken into account, the extent of damages will have been multiplied (Esmaielzadeh et al., 2012). Research shows that the most of these behaviors occur in the university setting, and high-risk behaviors such as high alcohol consumption, illegal drug use, and insecure sexual behavior can lead to high rates of illness and mortality among students (Kazemeini & Modarres Gharavi, 2013). Studies by Naemi (2015) and Hajian (2011) also show that high-risk behaviors of students at Azad University and technical engineering students are higher than that of medical students (Hajian et al., 2011; Naemi & Faghihi, 2015).

Considering the importance of examining the high-risk behaviors and related factors among students and because students of health and non-health universities have different talents and educational backgrounds, it is necessary to study the incidence of high-risk behaviors separately. Therefore, this study aimed to compare the students of two Kerman University of Sciences and Kerman University of Medical Sciences about high-risk behaviors.

Materials and method

Study Design and Setting:

This study was a comparative cross-sectional study conducted in two central universities of Kerman, Iran. Iran, officially the Islamic Republic of Iran, is located in Southwest Asia. Kerman is the largest city in the southeast of Iran, with a population of more than 722,000. There are two central governmental universities in Kerman (Kerman University of Medical Sciences and Shahid Bahrur University of Sciences). In the educational year of 2017-2018, 19089 students were studying in different majors and different degrees in these universities.

Sampling and Sample Size:

The sample size was estimated to be 300 in each group using the

mean difference formula. About the probability of dropout, in each university, 330 questionnaires were provided to the students using a convenience sampling method. 313 questionnaires were fully delivered from both universities, and they were included in the software (response rate 94.85).

Instrument:

The instruments used in this study include two parts: demographic characteristics form, and high-risk behaviors. The first part of the survey was related to the demographic data of the participants including age, gender, marital status, marital status of the parents, occupation, education, field of study, academic semester, university name and residency status.

Iranian adolescent riskiness scale (IARS) (Zade Mohammadi et al. 2008) was used to measure high-risk behaviors. The questionnaire consists of 39 items for assessing the vulnerability of adolescents in 7 high risk behaviors including hazardous driving (7 questions), violence (5 questions), smoking (5 questions), drug use (8 questions), alcohol use (6 questions), sexual relationship and behavior (4 questions) and tendency to the opposite sex (4 questions). The answer to these questions is in the

form of a five-point-likert scale ranging from I strongly agree to I strongly disagree. The total score varies from 39 to 159, and the higher score shows higher risk behaviors. The reliability of the Iranian adolescent riskiness scale has been evaluated through internal consistency and Cronbach's alpha using construct validity, exploratory factor analysis, and principal components analysis. The results indicate that the reliability of this questionnaire based on the general scale was 0.94 (Jaefar et al., 2014).

Data Collection and Analysis:

In this research, the researcher referred to research settings after obtaining the code of ethics and presented a written letter to the university's management and security. The researchers referred to libraries, study halls, student dormitories and classes at Shahid Bahonar University and University of Medical Sciences in Kerman in the morning and afternoon. The questionnaires completed in self-report, and then the questionnaires were taken from the students. The inclusion criteria were students of Shahid Bahonar University, University of Medical Sciences, who were willing to participate in this study. Guest students, as well as incomplete questionnaires, were excluded from the study.

Data were analyzed using SPSS version 25. Frequency, percentage, mean and standard deviation were used to describe the studied variables.

The independent t-test was used to compare the high-risk behaviors scores between the two groups. If the parametric conditions had been established, the independent t-test and ANOVA would have been used to compare the high-risk behaviors score regarding demographic variables in each group. If the parametric conditions had not been met, the Mann-Whitney U and Kruskal-Wallis tests would have been used.

Ethical Approval:

The Kerman University of Medical Sciences approved this project (IR.KMU.REC.1396.1798). Also, the research was conducted according to the Declaration of Helsinki (WMA). After approval, permission was issued to the management of the two universities. After permission, some oral information was given to the participants including the goals and objectives of the study, the confidentiality and anonymity of the data, and that they were free to withdraw from the study at any

time. Informed consent was obtained from all individual participants included in the study.

Results

Socio-demographic Characteristics

A total of 626 students (313 non-health and 313 health science students of Kerman Universities) participated in this study. The mean age of non-health and health science students was 20.87 ± 3.62 and 21.81 ± 4.03 , respectively. 61 percent of the non-health science students and 73.8 percent of health science students were female, and 88.2 percent of health science students and 88.7 percent of non-health science students were single. Also, 11.8% of the non-health and health science students were employed, and 99.7% of non-health science students and 68.4% of health science students were studying at associate degree and Bachelor of Science levels. 32.9% of health science students and 39% of non-health science students were freshmen. 53.2% of health science students and 30.4% of health science students were native, 93.4% of health science students and 90.3% of non-health science students lived with both parents (Table 1).

The Comparison of high-risk behaviors between health and non-health science students:

The average total score of high-risk behaviors between the non-health and health science students was 74.94 ± 23.02 and 72.43 ± 22.23 , respectively. There was no significant difference in the total high-risk score among students in these two universities. However, there was a significant difference between the students of the two universities among the components of smoking, sexual relations, and sexual orientation towards the opposite sex, and the non-health science students were significantly more inclined towards the three components mentioned above than the health science students (Table 2).

Risky behaviors according to socio-demographic subcategories of students

There was no correlation between age and risky behaviors ($r = -0.04$, $P = 0.38$). Also, females had less risky behaviors than males. In health science university students, there was no correlation between age and risky behaviors ($r = -0.01$, $P = 0.11$). In addition, female and married students exhibit less risky behaviors than male and single students. Also, the results show that in non-health science university students, there was no correlation between age and risky behaviors ($r = -0.12$, $P = 0.06$), and females had less risky behaviors than males (Table 3).

Table 1. Socio-demographic characteristics of the sample (n = 626)

	non-health science university		health science university	
Variable	Mean	Standard deviation	Mean	Standard deviation
Age(yr.)	20.87	3.62	21.81	4.03
Variable	Frequency	Valid percent	Frequency	Valid percent
Educational year				
First	122	39	103	32.9
Second	83	26.5	92	29.4
Third	54	17.3	62	19.8
Forth	29	9.3	31	9.9
Fifth and upper	25	8	25	8
Sex				
Female	189	61	231	73.8
Male	121	39	82	26.2
Marital status				
Single	272	87.7	272	87.2
married	38	12.3	40	12.8
occupation				
Unemployed	276	88.2	269	88.2
Employed	37	11.8	36	11.8
Living with both parents				
Yes	280	90.3	282	93.4
No	30	9.6	20	6.6
Educational grade				
Bachelor's Degree	312	99.7	214	68.4
Master's Degree/Professional Doctorate	1	0.3	99	31.6
Major				
Medical	3	1	313	100
Non-medical	310	99	0	0
Living place				
Student Dormitory	115	38.2	204	65.4
Rented House	26	8.6	13	4.2
Resident of Kerman	160	53.2	95	30.4

For cases that the frequency was less than 313, there were missing values.

Table 2: Comparison of scores of high-risk behaviors and their dimensions among students of the Universities of health and non-health sciences

variable	University of non-health Sciences		University of Health Sciences		Independent t-test	P value
	Mean	SD	Mean	SD		
Risky behaviors	74.94	23.02	72.43	22.33	1.39	0.17
Risky Driving	20.17	4.68	20.86	4.69	-1.84	0.07
Violence	9.95	3.86	9.76	3.76	0.62	0.53
Smoking cigarette	7.67	4.34	7	3.74	2.06	0.04
Drug use	10.80	4.56	10.86	5.65	-0.15	0.8
Alcohol use	9.50	5.19	8.98	4.60	1.33	0.18
Sexual behaviors	9.79	4.67	8.37	4.33	3.97	<0.001
Orientation with the opposite sex	7.03	3.95	6.42	3.52	2.05	0.04

Table 3. Scores of high-risk behaviors regarding demographic variables of students

Variable	Risky Behaviors (total sample: 626)		Statistical test & P-value	Risky Behaviors (non-health science university students: 313)		Statistical test & P-value	Risky Behaviors (Health Science University students: 313)		Statistical test & P-value
	Mean	SD		Mean	SD		Mean	SD	
Educational year									
First	72.42	20.79	F = 0.51	73.43	20.98	F =1.53	71.22	20.6	F =0.84
Second	73.49	23.24	P = 0.73	73.08	21.13	P =0.19	73.86	25.1	P =0.50
Third	74.20	23.61		75.05	25.57		73.44	21.95	
Forth	75.35	26.74		84.24	29.85		67.3	20.65	
Fifth and upper	76.84	22.05		77.36	23.00		76.32	21.53	
Sex									
Female	67.57	18.72	Z = 10.21	68.44	19.42	Z =-6.77	66.86	18.14	Z =-7.52
Male	86.14	24.93	P < 0.001	84.81	24.57	P < 0.001	88.11	25.49	P < 0.001
Marital status									
Single	74.31	22.50	t = 1.87	74.98	23.00	t =0.23	73.64	22.82	Z =-2.64
married	69.18	23.49	P = 0.06	74.08	28.16	P =0.82	64.52	17.07	P =0.008
occupation									
Unemployed	73.81	22.61	t = 0.22	74.81	22.97	t =-0.28	72.73	22.22	T =0.61
Employed	73.16	22.69	P = 0.83	75/92	23.69	P =0.78	70.33	20.20	P =0.54
Living with both parents									
Yes	73.93	22.142	t = -0.34	75.63	22.88	t =1.11	72.25	21.29	Z =-0.69
No	75.08	28.97	P = 0.73	7073	24.25	P =0.27	81.60	34.52	P =0.49
Living place									
Student Dormitory	73.74	24.02	F = 1.46	77.94	26.67	H =1.45	71.37	22.12	F =2.38
Rented House	78.82	24.66	P = 0.23	75.65	23.42	P =0.48	85.15	26.79	P =0.1
Resident of Kerman	72.31	20.17		72.21	19.43		72.48	21.47	
University									
Non-health Sciences	74.94	23.02	T = 1.39						
health Sciences	72.43	22.33	P = 0.17						

SD = Standard deviation, t = Independent t test; F = Analysis of Variance, Z = Mann-Whitney U test; H = Kruskal-Wallis's test

Discussion:

The results of this study showed that the average score of high-risk behaviors among students of the University of Health Sciences and University of Non-Health Sciences was lower than the median score of the questionnaire. In other words, the prevalence of high-risk behaviors among health and non-health science students was lower than average. These results were consistent with the results of Mirdoraghi (2017), Ahmadi (2016) (Ahmadi & Khodadadi, 2016; Mirdoraghi et al., 2017). Also, there was no significant difference in the total score of high-risk behaviors among students in these two universities, which was not similar to the results of studies by Mirdoraghi (2017), Ahmadi (2016), Rokrok (2015), Cavazos-Reg (2009), and Vazsonyi (2006) (Ahmadi & Khodadadi, 2016; Cavazos-Rehg et al., 2009; Mirdoraghi et al., 2017; Rokrok et al., 2015; Vazsonyi et al., 2006). The different instruments for measurement of high-risk behaviors, as well as the different ages of research samples, can be the cause of this contradiction. The sample of this study was composed of students, while most of the mentioned studies were adolescents. Adolescence is the most critical period for adaptation to high-risk behaviors, and adolescents are more inclined to

engage in high-risk behaviors (Rokrok et al., 2015).

The results of this study showed that among the high-risk behaviors, non-health science students had higher risk behaviors in smoking, sexual behavior and relationship and orientation to the opposite sex compared to the health science students. It seems that health science students are more aware of sexual behavior and relationships, smoking, and its complications and consequences than non-health science students, which can lead to a lower inclination to these high-risk behaviors. In explaining these results, it can be said that the positive attitude toward smoking is considered to be a factor related to smoking. Non-health science students with a positive attitude toward smoking and its calming effect are more likely to use it (Rokrok et al., 2015). But in the results of Ahmadi (2016), the tendency toward risky driving, violence, and sex was the highest among students in civilian families compared to the military families (Ahmadi & Khodadadi, 2016). In the study of Mirdoraghi (2017), students with ADHD were significantly more inclined to risky driving, violence, and sex than non-affected students (Mirdoraghi et al., 2017). In the results of Hajian (2011), physical involvement and smoking, and in the results of

Esmaelzadeh (2012) and Rashid (2015), hookah, smoking, and drug use were more prevalent (Esmaelzadeh et al., 2012; Hajian et al., 2011; Rashid, 2015). This difference may be due to cultural differences and social conditions among Qazvin and Tehran with Kerman, use of a different questionnaire and study of the adolescent group.

Regarding the comparison of the prevalence of high-risk behaviors among students and two universities separately based on gender, the results of this study showed that the incidence of high-risk behaviors was significantly higher in boys than in girls. The results of the present study are consistent with the results of Ahmadi (2016), Atadokht (2013), Shokri (2015). Hajian (2011) and Cotton (2005)(Ahmadi & Khodadadi, 2016; Atadokht et al., 2014; Cotton et al., 2005; Hajian et al., 2011; Shokri et al., 2015). The lack of acceptance of high-risk behaviors by women and different gender expectations, different biological issues and greater freedom of action in boys may be the reason for this difference. The results also showed that the prevalence of high-risk behaviors was the same in married and single students in non-health sciences university and in total students but in health science university students, married students have

less risky behaviors than singles. It could be said that married people who are committed to their marital life show less willingness to engage in illicit sex and high-risk behaviors. The results of studies by Hajian (2011) and Hawes and Berkley-Patton and (2014) also confirmed the results of this study (Hajian et al., 2011; Hawes & Berkley-patton, 2014). Also, the results regarding total sample and in two universities showed that students living in a hired house were not significantly different from the students living in a dormitory and with their parents regarding a tendency toward high-risk behaviors (Hajian et al., 2011). They were inconsistent with the results of Atadokht (2013) and Hajian (2011)(Atadokht et al., 2014; Hajian et al., 2011). In previous studies, alcohol, smoking, and inactivity have been more pronounced among students in rented houses, which may be due to the difference between the tools of research mentioned above and the cultural differences in smoking. No significant relationship was found between the students' scores of risky behaviors and two universities students separately and age. The results of the study of Chamrathirong (2010) and Cotton (2005) did not match the results of the present study (Chamrathirong et al., 2010; Cotton et al., 2005). The difference

between the age of subjects in the current study (age range of 18-41 years) and those in the mentioned studies (13-16 years) may be the reason for this difference. It seems that puberty and the onset of hormonal and sexual changes expose more greatly the person to high-risk behaviors.

In this study, self-reporting was used to collect data. This method may not be honest, and risk behaviors may not be reported honestly. Other limitations of this study include the large number of items in the questionnaire, which reduces student engagement in answering questions. Therefore, it is suggested that surveys with a small number of questions and checklists be used in future studies.

Conclusion:

The results showed no significant difference in the total score of high-risk behaviors between non-health science and health science students. But non-health science students were significantly more inclined to smoke, sexual relations, and sexual orientation toward the opposite sex than the health science students. According to these results, it can be concluded that paying attention to young people's demographic characteristics, such as gender, marital status, housing status, and university type, can also be useful in the prevention of high-risk behaviors. Therefore, it is essential

that preventive measures be designed and implemented according to the target community. It is suggested that due to lack of research in the field of predictive factors of high-risk behaviors in the youth group, especially students, research on this issue be implemented on young people in other provinces for preventing of high-risk behaviors.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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Data Availability

Data are available by contacting the corresponding author by email.

Authors contribution

MD and AGH designed the study and collected data. MD contributed to the study design, they provided critical feedback on the study and analysis, and inputted to the draft of this manuscript. AGH and ARA wrote the manuscript. All authors have read and approved the final manuscript.

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