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The association of high-risk behaviors and their relationship with identity styles in adolescents

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Abstract:

BACKGROUND: Adolescence is considered an important stage in the onset of high-risk behaviors. Identity styles have significant pathological effects in various aspects of high-risk behaviors. The present study was conducted aiming at investigating the association between high-risk behaviors and identity styles in adolescents.

MATERIALS AND METHODS: The present cross-sectional research studied 384 girls and boys studying in the second grade of High School in Babol in 2018. Data collection was done through a demographic questionnaire, Mohammadkhani's Risky Behaviour Questionnaire, and Berzonsky's Identity Style Inventory. Data analysis was performed using Chi-square test, Pearson's correlation coefficient, and linear regression analysis. $P \leq 0.05$ was considered statistically significant.

RESULTS: The mean age of adolescents was 17.21 ± 48.4 years (aged 16–19 years). Aggression (23.4%), relationship with the opposite gender (14.5%), smoking cigarettes and hookah (10.9%), consuming alcohol (9.3%), suicidal thoughts and attempts (5.7%), running away from home (3.9%), and consuming psychotropic substances (1.8%) were among the most common high-risk behaviors observed in the adolescents. The scores of high-risk behaviors were negatively correlated with the identity scores of informational style (4.56 ± 3.107), normative style (4.45 ± 2.581), and identity commitment style (4.15 ± 2.245) and positively correlated with the scores of diffuse-avoidant style (4.15 ± 3.089). Regression analysis showed that only the informational style had a negative and significant correlation with high-risk behaviors.

CONCLUSIONS: The present study showed significant prevalence of high-risk behaviors and its relationship with identity styles in adolescents, which requires regular and planned health education intervention at schools.

Keywords:

Adolescents, high-risk behaviors, identity styles

Introduction

Adolescence is the transition phase from childhood to adulthood. The human personality develops and consolidates at the end of early adolescence and beginning of late adolescence.^[1] Adolescents comprise a large portion of the population of countries, especially our country, and play a vital role in the dynamism and continuity

of the social life of a nation and its comprehensive development.^[2] Therefore, recognizing and analyzing their issues has become the keystone of the works conducted by researchers around the world, and especially in our country, where the majority of population are adolescents and youngsters.^[3] High-risk behaviors are among the health threats for this stratum of the community.^[4] Investigations indicate that high-risk behaviors in adolescence have increased, and the tendency and diversity of high-risk behaviors, or

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undertaking several high-risk behaviors, is observed at this age.^[5]

High-risk behaviors include negative behaviors, namely, violence, quarrels, smoking cigarettes, verbal and nonverbal threats, neglecting the lessons, humiliating others, high-risk sexual behaviors, substance abuse, suicidal attempts, and aggression.^[6] The risk-taking level of adolescents and young people accounts for a higher percentage than others, and they showed to have a higher tendency toward high-risk behaviors.^[7] By and large, adolescents lack a clear understanding of the consequences of their high-risk behaviors or assume themselves immune and invulnerable to the consequences.^[8] Such perception promotes the development of high-risk behaviors among adolescents, heedless of the fact that high-risk behaviors affect their quality of life not only at adolescence but also later in their lives at adulthood and middle age. It is noteworthy that the emergence of a high-risk behavior such as smoking cigarettes or drinking alcohol paves the way for other high-risk behaviors,^[9] and the simultaneous occurrence of several high-risk behaviors is generally raised in the discussion about high-risk behaviors.^[10]

Meath introduced school violence, especially the harassment phenomenon, which is a new form of violence as one of the educational issues in England.^[11] Moreover, alcohol consumption and criminal behaviors are directly associated with childhood experiences related to emotional and physical abuse and negligence.^[12,13]

A study titled "Youth Risk Behaviour Survey" is conducted annually in the United States which divides the risky behaviors in adolescents into six groups including unintentional injuries and damages (e.g., driving accidents), violence, consumption of alcohol and cigarette, the use of unpermitted drugs, sexual intercourse and transmission of sexually transmitted diseases (often AIDS), unhealthy behaviors and diets, and weight gain.^[14] These studies led to a decrease in behaviors such as suicidal attempt and tendency, which in turn indicates the efficiency and effectiveness of studies and investigations on high-risk behaviors among students.^[15] Research results in Iran indicated that the social network of adolescents with relatives had a negative and significant effect, and the network of friends and neighbors had a positive and significant effect on high-risk behavior in adolescents.^[16] The results of other studies in Iran indicated that the experience of using hookah, smoking cigarettes, sexual intercourse, outdoor fights, and consuming alcohol were the most epidemic risky behaviors among adolescents, and the mean level of risky behaviors was higher in boys than in girls, though there was no significant difference between the extent of high-risk behaviors among students of different grades in

different ethnic groups.^[17,18] However, in general, studies in Iran focus on a few specific behaviors, and there is no accurate statistics on the extent and type of high-risk behaviors of students.

Marcia Mussi-Pinhata and Maria Quintana hold that there is a relationship between high-risk behaviors and identity. Identity involves a relatively sustainable sense of self-unity.^[19] In Sachs-Ericsson's opinion, adolescence is the identity exploration period such that the identity indicates mental health and the conflict between identity, and identity confusion is a sign of a healthy personality.^[20] Soenens *et al.* believe that identity acquisition is also a response to the need of young people to understand that they are distinct from others despite sharing characteristics with them. In their opinion, people act differently in dealing with identity struggles and processing the related information and have different identity styles.^[21] Berzonsky defines identity styles as the cognitive-social methods adopted by an individual to process, organize, apply, and modify their own information and proposed three identity styles, namely, informational (information oriented), normative, and diffuse-avoidant styles. In informational identity style, the adolescent is actively seeking and evaluating information. In the normative identity style, the adolescent also bases his/her values on his/her expectations of the most prominent people in his/her life and mainly defines himself/herself with characteristics such as "my family," "my religion," and "my ethnicity." In the diffuse-avoidant style, the adolescent postpones confrontation with identities as long as possible and tends to emphasize his/her contingent social aspects such as "my reputation," "my popularity," and "my impression on others." These three identity styles are strongly related to the adolescent adaptation.^[22]

In addition, numerous studies have indicated that the personality, behavioral characteristics, and social perceptions of individuals have a significant relationship with high-risk behaviors^[23] and seemingly certain elements of personality show high-risk behaviors. Regarding the high prevalence of high-risk behaviors in adolescents, a precise assessment of adolescents' behaviors in terms of high-risk behaviors and identification of their identity styles can lead to the development of a comprehensive guide to reduce the complications and injuries caused by high-risk behaviors. Thus, the present study was conducted aiming at investigating the association between high-risk behaviors and identity styles in adolescents.

Materials and Methods

The present cross-sectional research was conducted on 384 male and female students aged 16–19 years in

Babol in 2018 which has been approved by the Ethics Committee of Babol University of Medical Sciences with approval code MUBABOL.HRI.REC.1396.183. Sampling was calculated based on the following formula:

$$n = \frac{x^2 p (1 - p)}{d^2} = \frac{1.96^2 \times 0.5 (1 - 0.5)}{0.05^2} = \frac{0.96}{0.0025} = 384$$

Sampling was performed randomly such that a total of four schools were selected by choosing one girls' school and one boys' school from each of the two municipal districts. Then, using the proportion, the share of each educational grade and field of study from the target population was calculated. Moreover, in each school, the required samples were selected randomly among all the grades and fields of study. The inclusion criteria included being student, studying in the second grade of high school, and the absence of any severe physical and mental restrictions. The exclusion criteria were students' unwillingness to complete the questionnaire or providing an incomplete questionnaire. In this research, data were collected through a demographic questionnaire, Risky-Behaviour Questionnaire developed by Mohammadkhani, and Berzonsky's Identity Style Inventory. The Risky-Behaviour Questionnaire prepared by Mohammadkhani was developed through adopting the questionnaire of the Centre for High-risk Behaviour Control (Centre for Controlling Diseases, 2006). It comprised 39 questions assessing the prevalence of seven groups of high-risk behaviors including smoking cigarettes and hookah (8 items), alcohol consumption (5 items), psychotropic drug consumption (3 items), aggressive behaviors (9 items), suicidal thoughts and attempts (5 items), running away (4 items), and relationship with the opposite sex (5 items). It also evaluates the prevalence of high-risk behaviors in the lifetime, the past 12 months, and the recent month and the tendency to consume different types of drugs in future. Structural correlation method was used to calculate the validity of the risky behaviors questionnaire so that the correlation of each question with the total score of the questionnaire was calculated. The results indicate that all the items have a significant relationship with the whole questionnaire ($P < 0.001$). In addition, the correlation coefficients vary from 0.26 to 0.47.^[24] The reliability of this instrument was reported to be 0.87 in the study of Mohammadkhani (2007) and 0.82 in Hajabi and Hosseini (2018).^[25]

The Berzonsky's Identity Style Inventory is a 40-item scale, of which 11 items are related to the informational identity style scale, 9 items to normative identity style scale, 10 items to diffuse-avoidant style, and 10 other items to identity commitment scale, which are used for the secondary analysis. The participants' answers to

the questions were graded using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Assessing and measuring the internal consistency of the identity style inventory was conducted by Ghazanfari using the Cronbach's alpha coefficient on the original sample data (81%).^[26] The questionnaires were filled in through attending the research site. Data collection was performed at the schools by pretrained male and female nursing students. The importance of honest completion and how to complete the questionnaires were explained to the study population before completing the questionnaire. Then, the questionnaires were completed in a self-administered way and then collected at the every session. In this study, data analysis was done using SPSS software version 18 (IBM Company, Armonk, NY, USA) and descriptive statistical tests including Chi-square test, Pearson's correlation coefficient, and linear regression analysis.

Results

In the present study, among the 400 qualified people, 384 students were studied. Table 1 shows the demographic data of the participants. The mean age of the adolescents (aged 16–19 years) was 17.21 ± 0.48 years. The results of this study showed that aggression (23.4%), relationship with the opposite gender (14.5%), smoking cigarettes and hookah (10.9%), consuming alcohol (9.3%), suicidal thoughts and attempts (5.7%), running

Table 1: Frequency distribution and percentage of demographic characteristics of the students

Variable	n (%)
Gender	
Male	194 (50.5)
Female	190 (49.5)
Age (year old)	
16	53 (13.8)
17	203 (52.8)
18	119 (31)
19	9 (2.4)
Grade	
Tenth	135 (35.2)
Eleventh	126 (32.8)
Twelfth	123 (32)
Economic situation of the family	
Good	47 (12.2)
Medium	278 (72.4)
Weak	59 (15.4)
Father's education	
Illiterate	12 (3.1)
Elementary and middle	134 (34.9)
High school and university	238 (62)
Mother's education	
Illiterate	15 (3.9)
Elementary and middle	149 (38.8)
High school and university	220 (57.3)

away from home (3.9), and consuming psychotropic substances (1.8) were among the most prevalent high-risk behaviors observed in adolescents [Table 2].

Regarding the criteria for high-risk behaviors, it was observed that boys showed more high-risk behaviors than girls [Table 2], and in investigating the relationship and correlation between demographic criteria and varieties of high-risk behaviors, gender had the highest relationship and the economic status of the family had the least relationship with high-risk behaviors. Moreover, the most prevalent high-risk behavior in adolescents was smoking hookah [Table 3].

The results of Pearson’s correlation test indicated that the scores of informational, normative, and identity commitment styles had a negative correlation with the scores of high-risk behaviors in both genders and generally in students. In other words, there was an inverse relationship between these three identity styles and the occurrence of high-risk behaviors, while the scores of diffuse-avoidant style were positively correlated with the scores of high-risk behaviors [Table 4].

Regarding the results of linear regression analysis to predict risky behavior based on identity styles, the R^2 obtained (0.099) means that 9.9% of variance of the variable risky behavior was explained by the identity styles. In other words, 9.9% of the observed dispersion in the high-risk behavior variable can be justified by these variables [Table 5].

Discussion

Based on the results of this study, aggressive behavior (23.4%), relationship with the opposite gender (14.5%), smoking cigarettes and hookah (10.9%), consuming alcohol (9.4%), suicidal thoughts and attempts (5.7%), running away from home (3.9%), and consuming psychotropic substances (1.8%) were the most prevalent high-risk behaviors among adolescents. Ahmadi and Khodadadi reported that aggression (20.4%), consuming alcohol (15.1%), smoking cigarettes (12.3%), and drug abuse (6.4%) were the most prevalent high-risk behaviors in adolescents.^[18] The study conducted by Esmailzadeh *et al.* among adolescents in Qazvin reported 32.7% of cigarette smoking, 16.7% of

Table 2: Distribution of the prevalence of high-risk behaviors in adolescents based on demographic status

Variables	Frequency of high-risk behavior						
	Relationship with the opposite sex, n (%)	Escape, n (%)	Thinking and committing suicide, n (%)	Aggressive behaviors, n (%)	Psychotropic substance use, n (%)	Alcohol consumption, n (%)	Smoking, n (%)
Gender							
Boy	43 (76.7)	12 (80)	13 (59)	76 (84.4)	6 (85.7)	33 (91.6)	35 (83.3)
Girl	13 (23.3)	3 (20)	9 (41)	14 (15.6)	1 (14.3)	3 (8.4)	7 (16.6)
Age (year old)							
16	11 (19.6)	1 (6.7)	6 (27.3)	11 (12.2)	1 (14.3)	7 (19.4)	3 (7.2)
17	25 (44.6)	4 (26.7)	10 (45.4)	41 (45.5)	3 (42.8)	15 (41.6)	13 (30.9)
18	17 (30.4)	5 (33.3)	5 (22.8)	34 (37.7)	2 (28.6)	12 (33.3)	21 (50)
19	3 (5.4)	2 (13.3)	1 (4.5)	4 (4.4)	1 (14.3)	2 (5.6)	5 (11.9)
Grade							
Tenth	19 (33.9)	2 (13.3)	6 (27.3)	21 (23.3)	2 (28.6)	10 (27.8)	7 (16.7)
Eleventh	16 (28.6)	7 (46.7)	10 (45.4)	46 (51.1)	3 (42.8)	14 (38.9)	12 (28.6)
Twelfth	21 (37.5)	6 (40)	6 (27.3)	23 (25.6)	2 (28.6)	12 (33.3)	23 (54.7)
Economic status of the family							
Good	11 (19.6)	3 (20)	4 (18.2)	16 (17.7)	4 (57.1)	13 (36.1)	15 (35.7)
Medium	32 (57.1)	5 (33.3)	8 (36.4)	36 (40)	2 (28.6)	9 (25)	13 (30.9)
Weak	13 (23.3)	7 (46.7)	10 (45.4)	38 (42.3)	1 (14.3)	14 (38.9)	14 (33.4)
Father’s education							
Illiterate	3 (5.4)	4 (26.7)	4 (18.2)	5 (5.6)	3 (42.8)	5 (13.9)	4 (9.5)
Elementary and middle	25 (44.6)	5 (33.3)	10 (45.4)	66 (73.3)	3 (42.8)	18 (50)	21 (50)
High school and university	28 (50)	6 (40)	8 (36.4)	19 (21.1)	1 (14.3)	13 (36.1)	17 (40.5)
Mother’s education							
Illiterate	4 (7.1)	3 (20)	3 (13.7)	7 (7.8)	2 (28.6)	6 (16.7)	7 (16.7)
Elementary and middle	27 (48.2)	5 (33.3)	12 (54.5)	45 (50)	4 (57.1)	18 (50)	20 (47.6)
High school and university	25 (44.6)	7 (46.7)	7 (31.8)	38 (42.2)	1 (14.3)	12 (33.3)	15 (35.7)
Frequency of high-risk behavior in adolescents	56 (14.5)	15 (3.9)	22 (5.7)	90 (23.4)	7 (1.8)	36 (9.3)	42 (10.9)

Table 3: Relationship and correlation of high-risk behavior with demographic characteristics

Behavior	Demographic characteristics of the students											
	Chi-square test (relationship of type of behavior with demographic variables)											
	Age		Gender		Grade		Economic situation of the family		Father's education		Mother's education	
	P	R	P	R	P	R	P	R	P	R	P	R
Aggressive behavior	0.173	0.211	0.001	0.995	0.212	0.154	0.041	-0.738	0.091	-0.343	0.042	-0.763
Psychotropic substance use	0.073	0.424	0.001	0.995	0.093	0.253	0.022	0.656	0.046	-0.635	0.037	-0.616
Escape	0.073	0.423	0.032	0.764	0.087	0.465	0.015	-0.913	0.043	-0.679	0.025	-0.734
Relationship with the opposite sex	0.044	0.655	0.046	0.652	0.093	0.395	0.373	0.325	0.391	0.266	0.369	0.238
Smoking	0.021	0.813	0.035	0.876	0.025	0.798	0.468	-0.197	0.047	-0.597	0.023	-0.717
Thinking and committing suicide	0.046	0.646	0.067	0.445	0.021	0.837	0.292	-0.352	0.024	-0.784	0.025	-0.738
Alcohol consumption	0.233	0.287	0.024	0.834	0.337	0.234	0.354	0.244	0.042	0.632	0.066	-0.435

Table 4: Mean and standard deviation of components of identity style and their correlation by gender

Components of identity styles	Identity styles scores, mean±SD			Correlation		
	Male	Female	Total	Boy	Girl	Total
Information style	4.35±3.116	4.78±3.101	4.56±3.107	-0.461	-0.395	-0.498
Normative style	4.32±2.685	4.69±2.443	4.45±2.581	-0.302	-0.312	-0.352
Diffuse-avoidant style	5.68±2.223	5.26±2.287	5.47±2.245	0.142	0.211	0.276
Identity commitment	4.21±3.123	4.09±3.056	4.15±3.089	-0.562	-0.421	-0.576

SD=Standard deviation

Table 5: Summary regression analysis to predict high-risk behavior based on identity styles

Predictor	B	SE	β	t	Significant
Constant	44.351	3.013	-	4.893**	0.001
Informational style	-0.612	0.034	-0.264	-2.687*	0.011
Normative style	-0.298	0.132	-0.112	-1.269	0.267
Diffuse-avoidant style	0.102	0.089	0.026	0.298	0.762
Identity commitment	-0.021	0.028	-0.009	-0.118	0.810

**P<0.01; *P<0.05. R=0.315; R²=0.099 (adjusted) R²=0.092; F=3.294. SE: Standard error

alcohol consumption, and 7.3% of drug abuse.^[27] These findings can be attributed to the increased access to these drugs by adolescents at this age, greater social interactions, and more sense of independence, which increased the exposure to the drugs.

In this study, there was a significant relationship between gender and aggressive behavior, drug abuse, and alcohol consumption. The results of the study conducted by Clarke *et al.* also indicated that there was a significant relationship between the gender index and the incidence of high-risk behaviors.^[28] The findings of other studies also indicated that suicidal thoughts were higher in girls than in boys, whereas suicidal attempts were higher in boys than in girls. The results of Esmailzadeh *et al.* on the relationship between gender and high-risk behaviors were similar to the results of the present study.^[27] In the study of Shawar and Crane in 2017 in the USA, quite like the abovementioned studies, the incidence of high-risk behaviors was significantly higher in boys than in girls.^[14]

Regarding the relationship between age and high-risk behaviors, the results of the present study indicated

that there was a significant relationship between age and smoking cigarettes and hookah, as well as suicidal thoughts, such that high-risk behaviors were more prevalent in older students. In the studies conducted by Craig and Austin in the USA^[23] and Esmailzadeh *et al.* in Iran,^[27] there was a direct relationship between age and smoking cigarettes and suicidal thoughts.

The present study indicated that there was a negative relationship between the parents' level of education and consumption of psychotropic drugs, running away from home, smoking cigarettes and hookah, aggressive behaviors, and suicidal thoughts of students. This relationship could be due to the high level of adolescent awareness of the consequences of high-risk behaviors in parents who had higher levels of education and thereby educated their children about avoiding high-risk behaviors. The study of Mir Heydari *et al.* in Iran indicated that parent's education, especially the mother, had a direct and significant relationship with the occurrence of high-risk behaviors, namely, violence, smoking cigarettes, drinking alcohol, suicidal thoughts, and running away from home.^[17] Sawyer *et al.* also pointed to a negative relationship between parents' level of education and high-risk behaviors such as running away from home, consuming cigarettes and alcohol, and high-risk sexual behaviors.^[15] The results of the present study indicated that there was a significant relationship between the economic status of the family and the occurrence of aggression and drug abuse in students, which is consistent with the results of the study conducted by Rahmani *et al.*^[16]

The results of the present study indicated that there was a negative correlation between informational, normative, and identity commitment styles and high-risk behaviors and a positive correlation between diffuse-avoidant identity style and high-risk behaviors among adolescents. In other words, prevalence of high-risk behaviors was higher in adolescents with a diffuse-avoidant style. Moreover, the results indicated that, among different identity styles, only the identity commitment style was a negative predictor of suicidal thoughts. The results of other studies also indicated that individuals with normative identity style were approximately three times more likely to incline toward drugs and individuals with social identity style were approximately six times more likely to incline toward drugs compared to those with informational identity style.^[29]

Moreover, according to the results of linear regression analysis to predict risky behaviors based on the four identity styles, namely suicidal, informational, diffuse-avoidant, and normative, one can conclude that there is a significant correlation between the variables studied and the variables of high-risk behaviors. By referring to the *t*-statistic and the significance levels, it can be judged that, among the four variables, only the informational identity style has a significant correlation with the high-risk behavior variables. The sign of the beta coefficients shows that informational style variable has a negative and significant relationship with the high-risk behaviors. Researches conducted pertaining to identity styles and risk taking also indicate that individuals with normative and informational identity styles are less likely toward high-risk behaviors due to their high commitment and can adapt themselves to conditions. However, individuals with diffuse-avoidant style cannot adapt themselves to conditions due to personality disturbances and lack of purpose and plan, and thus the prevalence of high-risk behaviors is higher in these individuals.^[30]

Despite the widespread sensitivities in the Iranian society, which originates from unique cultural and religious backgrounds in relation to high-risk behaviors, programs can be designed in accordance with the culture and needs of adolescents. This study is the first comprehensive survey about risky behaviors in adolescents in the north of Iran, especially about the occurrence of some high-risk behaviors such as suicide and the tendency to use drugs.

Conclusions

The present study shows a significant increase in high-risk behaviors and their relationship with identity styles. Identity styles can predict the tendency toward high-risk behaviors in adolescents and prevent the

occurrence of them. Because prevention of high-risk behaviors is easier, less costly, and more effective than treatment, health education interventions are recommended for the prevention of high-risk behaviors regularly and organized at the school level.

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Conflicts of interest

There are no conflicts of interest.

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