



A Systematic Review of Risky Behaviors in Adolescence and its Related Factors: Evidence from the Iran

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Abstract

Background: Adolescence is one of the most challenging, stressful, attractive, and at the same time most problematic periods of life for both adolescents and parents, teachers, and health providers. We aimed to evaluate the tendency to high-risk behaviors and its related factors associated with adolescent risk behaviors among Iranian adolescents.

Materials and Methods: In this systematic review, the online databases (Medline, EMBASE, Scopus, Web of Science, Cochrane Library, CINAHL, CIVILICA, and Google Scholar search engine) were reviewed with no time limit up to July 2022. Two reviewers evaluated the quality of eligible studies and carried out the selection procedure. The quality of the data was evaluated using the STROBE guidelines.

Results: Finally, 19 studies were included. The prevalence of high-risk behaviors in adolescents were 63.1% (ranged: 5.4-63.1%). The selected studies highlighted five forms of high-risk behaviors including hookah smoking (6.9-59%), cigarettes smoking (10.9-44.1%), substance abuse (1.8-31.1%), sexual risk behaviors (14.5-41.6%), and violence (23.4%), respectively. There was a significant negative relationship between religious tendencies and risky behaviors of students. There was a significant relationship between age, gender, field of study, health literacy, family income, family structure, attachment to family and peers, commitment to norms, belief in moral principles, social inhibitions, and tendency to high-risk behaviors ($p < 0.05$).

Conclusion: The prevalence of high-risk behaviors in adolescents was high. The supply of tobacco products to teenagers should be prohibited. It is important to create healthy entertainment such as sports and cultural competitions, develop programs and designing educational interventions in order to prevent risky behaviors and increase communication skills and self-efficacy in adolescents. In addition, strengthening religious beliefs in adolescents, by parents and teachers suggest.

Key Words: Adolescents, Risky Behaviors, Iran, Related Factors.

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1- INTRODUCTION

Adolescence is a transitional stage of physical and psychological development that generally occurs during the period from puberty to adulthood (1, 2). This transition has biological, psychological, social and emotional dimensions that expose teenagers to a lot of stress (3-7). World Health Organization (WHO) definition officially designates an adolescent as someone between the ages of 10 and 19 (8). Adolescents are often characterized as excessively prone to risk taking and impulsivity as exemplified by the clustering of risky behaviors including harmful alcohol consumption, drug use, anti-social behavior, and unprotected sexual activity. There is ample evidence that risk-taking rises sharply in adolescence (9-12).

It has been nearly two decades that the prevalence of risky behaviors, especially among teenagers and young adults, has become one of the most important concerns of human societies (13). High-risk behaviors are defined as acts that increase the risk of disease or injury, which can subsequently lead to disability, death, or social problems. The most common high-risk behaviors include violence, alcoholism, tobacco use disorder, risky sexual behaviors, and eating disorders (14-16). Studies have shown that most high-risk behaviors begin before the age of 18 and include smoking, alcohol, and drug use (14-21). The studies conducted in Iran indicates that the prevalence of high-risk behaviors among teenagers has been significant in recent years (22-24). Some studies also, show the prevalence of high-risk behaviors such as smoking, hookah, alcohol, and drugs among teenagers aged 14-18 (25-30).

According to the latest national census, 28% of the country's population is in the age range of 10-19 years (31). The prevalence of high-risk behaviors among teenagers and young people has become a

social issue in Iran in recent years and has caused deep concerns at various managerial, academic and general levels of society. Given that, adolescents are vulnerable to risky behaviors. Therefore, it is necessary to investigate high-risk behaviors of adolescents in order to develop preventive programs and to promote health (32, 33). This study aimed to evaluate the tendency to high-risk behaviors and its related factors associated with adolescent risk behaviors among 10-19-year-old Iranian.

2- MATERIALS AND METHODS

The Preferred Reporting Items for Systematic review and Meta-Analysis (PRISMA) statement was used as the template for this review (34).

2-1. Eligibility criteria

Participants, interventions, comparators, and outcome (PICO) was used to formulate the review objective and inclusion criteria.

2-1-1. P (Participants): Iranian adolescents (aged:10-19 years old).

2-1-2. I (Intervention/exposure): Related to factors associated with risk behaviors.

2-1-3. C (Comparison): For absence of risk behaviors.

2-1-4. O (Outcomes): High-risk behaviors such as substance use (including alcohol consumption and smoking tobacco and substance abuse), sexual risk behavior, and aggressive/violent behavior.

2-2. Included studies: The systematic review included studies containing any quantitative assessment, measurement, and evaluation of high-risk behaviors in adolescents (high school students only) in Iran, published up to July 2022, written in English or Persian, and published articles with full-text available.

2-3. Exclusion criteria: The exclusion criteria were abstracts without the full

article, articles not written in English or Persian, review articles, systematic review and meta-analyses, letters to the editor, editorials, short reports, case reports, and briefs.

2-4. Information sources

A systemic search of electronic databases Medline, EMBASE, Scopus, Web of Science, Cochrane Library, CINAHL, CIVILICA, and Google Scholar search engine was conducted. The search was done independently and in duplication by two reviewers, and any disagreement between the reviewers was resolved by the supervisor.

2-5. Search

Search words were a combination of (Students OR High school students OR Adolescents OR Teenagers) AND (High-risk behaviors OR Risky behaviors OR Behaviors OR Risk Factors) AND (Prevalence) AND (Iran).

2-6. Study selection

The studies were selected which reported the prevalence of smoking tobacco, alcohol consumption, substance abuse, sexual behavior, violence, and factors associated with adolescent risk behaviors among 10–19-year-old Iranians. A database search was done for possible studies, abstracts were screened for eligible studies, full-text articles were obtained and assessed, and a final list of included studies was made. This process was done independently and in duplication by two reviewers, and any disagreement was resolved by the third reviewer. References were organized and managed using EndNote software (version X8).

2-7. Data collection

A researcher form was developed and followed for each study. Two reviewers collected the data independently. Two independent inspectors gathered the information based on the following

parameters: author names, study period, study design, setting; sample size; gender, age range, and the rate of high-risk behaviors e.g., substance use (including alcohol consumption and smoking tobacco, and substance abuse), sexual risk behavior, aggressive/violent behaviors, and main findings.

2-8. Risk of bias in individual studies

The risk of bias was assessed following the standard STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guideline (35). It is a valuable tool for evaluating the quality of observational studies. This checklist has 22 items, scored based on the importance of each item in the present study. The final score of the checklist was 30, and the minimum was 15.0. The assessment was done by two reviewers independently and in duplication, and any discrepancies were resolved by the third reviewer.

2-9. Synthesis of results

Due to the studies' heterogeneity, such as different populations, the number of risk behaviors, and risk factors, no meta-analysis was attempted.

2-10. Ethics

Approval of a research ethics committee was not necessary as the study analyzed only publicly available articles.

3- RESULTS

Finally, 19 studies consisting of 8,027 adolescents were selected (**Figure.1**). The majority (77.25%) of the studies included in this review analyzed both boys and girls, although approximately 14.82% and 7.93% included only boys or girls, respectively. All included studies were of acceptable quality based on the STROBE scale. The main characteristics of the selected studies are summarized in **Table.1** and the following:

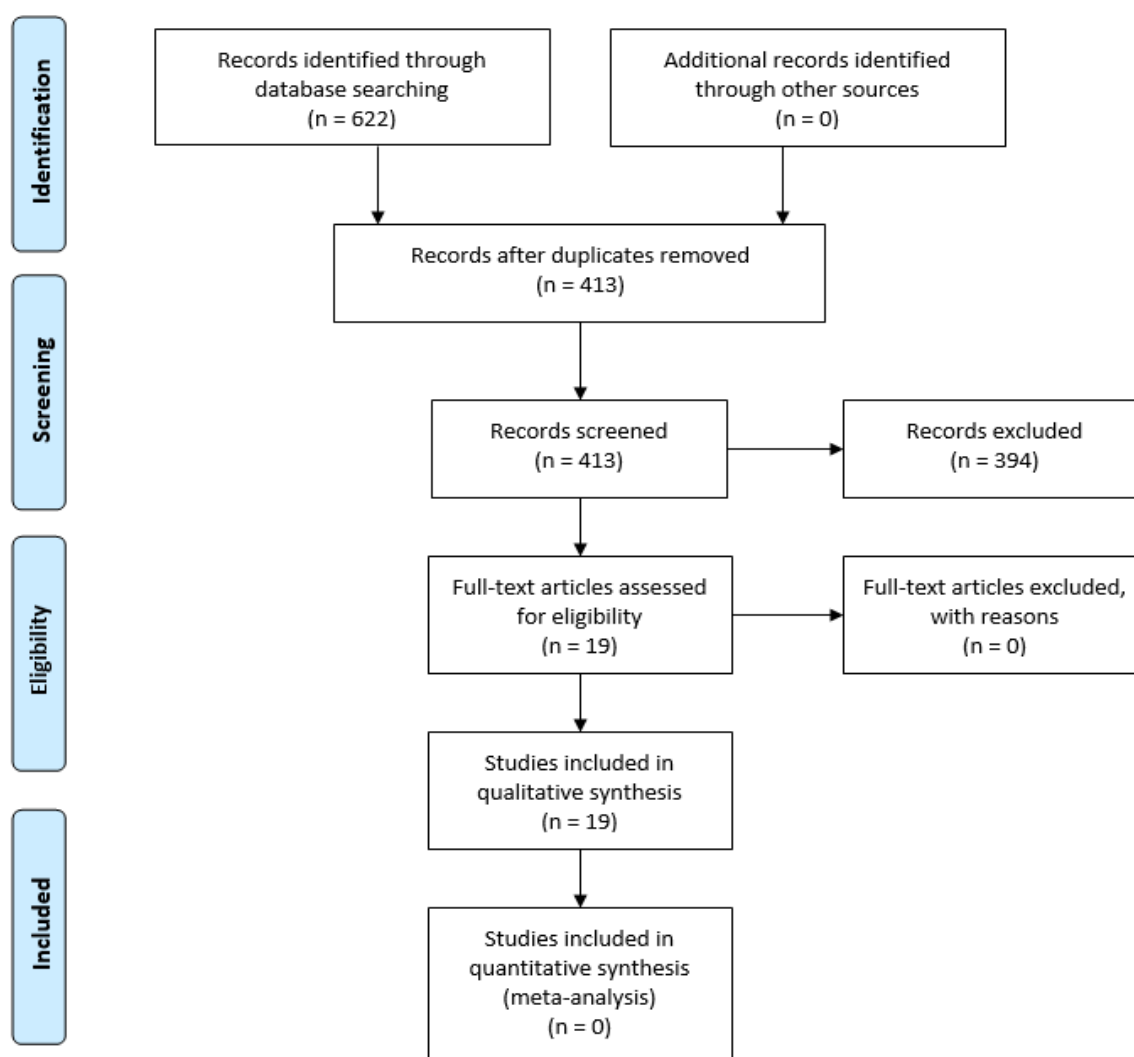


Fig.1: PRISMA flowchart.

1. In a cross-sectional study on 1280 high school students in Tehran in 2013, aimed to investigate the prevalence of high-risk behaviors among high school students, the results showed that the experience of smoking hookah, smoking cigarettes, having sex, being beaten outside the house, and the experience of alcohol consumption respectively, were the most common risky behaviors among teenagers. The average of high-risk behaviors was higher in boys than in girls (36).

2. In a cross-correlation on 3529 high school students from 30 high schools of Tehran in 2012, aimed to evaluate the role of family variables on adolescents' tendency towards high-risk behaviors. The

results showed that adolescents' tendency towards high risk behaviors are significantly related with family factors. This study demonstrates the significant role of family factors, especially smoking, alcohol consumption and drug abuse among family members, on Iranian adolescents' tendency towards high-risk behaviors (37).

3. In a cross-sectional study on 245 adolescents in the North of Tehran in 2018, aimed to explore the prevalence of risky behaviors among adolescents. The results showed that 6.9% of students had carried cold weapons with them at least once before; 15.17% had experienced drug consumption (opium and hash) at least;

21.3% consumed alcohol; 41.66% had sexual affairs with the opposite sex and 44.1% experienced smoking (38).

4. In a cross-sectional study on 450 high school students in Tehran in 2011-2012, aimed to estimate the prevalence of risky behaviors and its relationship to religious orientations among students (Shaahed and public schools). The results showed that the prevalence of risky behaviors was 8.2 percent in public school students, 1.5 percent in Shaahed school students and 3.2 percent in Shaahede Shaahed students. In addition, there was a significant difference between public school students and Shaahed students in public schools, in terms of the mean scores of risky behavior. Besides, a significant negative relationship was observed between religious tendencies ($p < 0.05$) and risky behaviors of public and Shaahed students. Considering subsidiary hypotheses, it was indicated that there was a significant positive relationship between age, and field of study ($p < 0.05$) with risky behaviors in public school students (39).

5. In a descriptive cross-sectional study on 252 students of Qom in 2019-2020, aimed to predict the adolescents' tendency to high-risk behaviors according to parenting style and healthy life style. The results showed that there is a significant relationship between parenting style (control, affection) and three aspects of life style (spiritual growth, health accountability, and exercise and physical activity) Moreover, according to the calculated coefficient of determination, parenting styles and healthy life style in adolescents can explain 30% of the changes in their risk. Furthermore, according to the calculated Beta coefficient, healthy life style has more effect on the emergence of adolescents' risk than the parenting style (40).

6. In a cross-sectional study on 800 high school students of Qom in 2016, aimed to estimate the prevalence of health risk

behaviors among high school students. The results showed that the prevalence of high-risk behaviors in the studied population was 56.25%. The prevalence of physical contact at school and outside school during a year; carrying a sharp weapon to school during a month; smoking in school during a month; and hookah smoking, use of alcohol and drug during a month had statistically significant difference in both sex ($p < 0.05$) (30).

7. In a cross-sectional study, on 180 high school students in Shiraz in 2019-2020, aimed to predict high-risk behaviors based on psychological motives in female teenagers, the results showed that the emotional and reckless motivations played the most important role in predicting female adolescents' willingness to use drugs, respectively. Moreover, emotional motivation played the most important role in predicting the tendency of teenage girls to use alcohol. Besides, regression impact coefficients indicated that irresponsibility and reckoning played the most important role in predicting the smoking trend variable, respectively (41).

8. In a cross-sectional study on 450 male students in Shiraz in 2020, aimed to evaluate the predictive model of high-risk behaviors in adolescents based on their motivations. The results showed that thrill-seeking, calculation, audience control, irresponsibility, and hedonistic motivation had significant relationships with high-risk behaviors. Also, except for attention-seeking, other motivations could significantly contribute to the prediction of high-risk behaviors. In addition, motivations generally explained 44% of the high-risk behaviors variance (42).

9. In a cross-sectional study on 400 of high school adolescents in Kashan in 2012, aimed to investigate the high-risk behaviors and their relations with demographic characteristics in adolescents, the results showed that 28.7% of boys and

22.5% of girls had risky behaviors. Significant difference was founded between general high-risk behaviors and tobacco; sexual high-risk behaviors and Acquired Immunodeficiency Syndrome (AIDS) behaviors, AIDS and law breaking domains in girls and boys also significant relationship was found between high-risk behaviors and some individual, family and social factors ($p < 0.05$) (43).

10. In a cross-sectional study on 400 high school adolescents in Kashan between December 2014 and June 2017, aimed to evaluate the relationship between risky behaviors and sensation seeking in a sample of Iranian adolescents. The results showed that risky behaviors were found in 51.2% of students, and a significant difference was found between the male and female students in this regard ($p < 0.05$). The overall sensation-seeking score and the scores in the dimensions of experience seeking, disinhibition, and boredom susceptibility were higher in males than females ($p < 0.05$). Therefore, sensation seeking can be used as an indicator for screening risky behaviors and should be monitored (44).

11. In a cross-correlation on 510 high school students of Qazvin in 2012, aimed to estimate the prevalence of health risk behaviors among high school students, the results showed that the use of hookah was the most popular in girls and boys (59%) as compared with cigarette smoking (32.7%), drug use (7.3%), and alcohol consumption (16.7%). The prevalence of physical violence in and outside the school in one year, carrying weapons to school in a month, cigarette smoking in the school in one month, smoking hookah, and alcohol and opioid use during one month were more frequently observed in boys than girls. The use of the seat belt was more common among girls than boys, and the total prevalence of using the seat belt was 23.7% (45).

12. In a cross-sectional study on 457 female adolescents in Zahedan in 2015, aimed to determine the prevalence of health-risk behaviors among teen girls in Southeastern Iran. The results showed that the highest prevalence of health-risk behaviors of students included: failing to drink natural fruit juice (53.1%), failing to wear a seat belt (43.0%), sitting in a car while the driver is sending message or emails (43.0%), failing to drink milk daily (36.0%), lack of minimum daily physical activity 37.0%, and watching TV more than 3 hours a day (35.0%). Additionally, the ANOVA showed a statistically significant difference in the average number of health risk behaviors of adolescents in families with high economic status, those who never talked with their parents or those who had physical relations with the opposite sex ($p < 0.001$) (46).

13. In a cross-sectional study on 384 high school students in Babol in 2018, aimed to investigate the association between high-risk behaviors and identity styles in adolescents. The results 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 away from home (3.9%), and consuming psychotropic substances (1.8%) were the most prevalent high-risk behaviors among adolescents. Regression analysis showed that only the informational style had a negative and significant correlation with high-risk behaviors (47).

14. In a descriptive-analytical cross-sectional study on 716 high school students in Bushehr in 2019, aimed to determine the status of adolescents' tendency to high-risk behaviors and related factors. The results showed that high risk driving had the highest mean score (14.5 ± 88.67 , ranged: 5-25). There was a direct and significant relationship among all three high-risk behaviors (comprising

smoking, violence, and high-risk driving subscales). The presence of smoker friends had direct and significant relationships with all three high-risk behaviors, and the amount of pocket money had a direct and significant relationship with the tendency to high-risk driving ($p=0.016$) (48).

15. In a cross-sectional study on 377 male students of high schools in Bushehr in 2017, aimed to explore the prevalence of high-risk behaviors among male adolescents in the South of Iran. The results showed that the highest frequency of high-risk behaviors in male adolescents involved physical contact and struggle out of school (22.81%), hookah consumption within a month (19.62%), physical contact and struggle at school within a year (18.30%), and smoking cigarettes out of school in a month (11.14%). Besides, the rate of hookah consumption within a month and outside school were reported to be 19.62% and 11.14% (49).

16. In a cross-sectional study on 334 high school students in Rabor city in 2021, aimed to investigate the relationship between high-risk behaviors (HRB), and mental health in adolescents. The results showed that the male gender is one of the risk factors for alcohol, smoking and other substances, tendency to high-risk sexual behaviors, depression and suicide in adolescents. The variables of age, sex, marital status of parents, and number of children in the family, educational level, smoking, hookah and alcohol have been determined as influential and facilitating factors in HBR of adolescents. Adolescents with better mental health are physically healthier, show more positive social behaviors, and engage in less risky behaviors. In contrast, adolescents with mental health problems such as depression are more likely to engage in risky behaviors (50).

17. In a descriptive cross-sectional study on 560 high school students in West Azerbaijan province in 2019-2020, aimed to investigate the relationship between health literacy and high-risk behaviors with respect to the mediating role of positive adolescent development among students in West Azerbaijan province, Iran. The results showed that health literacy has a significant relationship with high-risk behaviors and reduces the tendency to high-risk behaviors. The total mean scores high-risk behaviors in students was 20.57 ± 13.64 (addiction: 5.21 ± 4.98 , alcohol: 4.92 ± 4.85 , sexual behaviors: 3.27 ± 2.75 , and violence: 7.20 ± 5.08) (51).

18. In a cross-sectional study on 384 high school students of Guilan province in 2020-2021, aimed to determine the prevalence of smoking, alcohol and drug use among adolescent students. The results showed that high-risk behaviors of smoking (34.96%), drug use (31.17%) and alcohol (30.62%) were the most common among adolescent students, respectively (52).

19. In a cross-sectional study on 363 male high school students in Sanandaj in 2018, aimed to determine the factors associated to high-risk behaviors among students in Sanandaj based on Health Belief Model. The results showed that the prevalence of high-risk behaviors among students was 63.1%. There was a significant statistical difference between knowledge and perceived susceptibility constructs, cues to action, perceived barriers and perceived self-efficacy ($p < 0.05$) in students with high risk behaviors and those who did not have high risk behavior (53).

Table-1: The general characteristics of included studies (n=19).

Authors, Study period, References	Study design	Area	Sample size	Gender	Setting	Main results	*Quality assessment result
Rashid, 2013, 36	cross-sectional study	Tehran	1280	M/F	High school	The experience of smoking hookah, smoking cigarettes, having sex, being beaten outside the house, and the experience of alcohol consumption respectively, were the most common risky behaviors among teenagers.	17
Panaghi et al., 2012, 37	cross-correlation	Tehran	3529	M/F	High school	The results demonstrates the significant role of family factors, especially smoking, alcohol consumption and drug abuse among family members, on Iranian adolescents' tendency towards high-risk behaviors	17
Marashi et al., 2018, 38	cross-sectional study	Tehran	245	M/F	High school	6.9% of students had carried cold weapons with them at least once before; 15.17% had experienced drug consumption (opium and hash) at least; 21.3% consumed alcohol; 41.66% had sexual affairs with the opposite sex and 44.1% experienced smoking.	19
Valizadeh et al., 2011-2012, 39	cross-sectional study	Tehran	450	M/F	High school	The prevalence of risky behaviors was 8.2 percent in public school students, 1.5 percent in Shaahed school students and 3.2 percent in Shaahede Shaahed students.	18
Abbasi et al. 2019-2020, 40	cross-sectional study	Qom	252	M/F	High school	The parenting styles and healthy life style in adolescents can explain 30% of the changes in their risk. Also, healthy life style had more effect on the emergence of adolescents' risk than the parenting style.	17
Marzban et al., 2016, 30	cross-sectional study	Qom	800	M/F	High school	The prevalence of high-risk behaviors in the studied population was 56.25%.	17
Sehat et al., 2019-2020, 41	cross-sectional study	Shiraz	180	F	High school	The emotional and reckless motivations played the most important role in predicting female adolescents' willingness to use drugs, respectively. Moreover, emotional motivation played the most important role in predicting the tendency of teenage girls to use alcohol.	16
Aminimanesh et al., 2020, 42	cross-sectional study	Shiraz	450	M	High school	Based on the results, thrill seeking, calculation, audience control, irresponsibility, and hedonistic motivation had significant relationships with high-risk behaviors.	17
Aghajani et al., 2012, 43	cross-sectional study	Kashan	400	M/F	High school	The results showed that 28.7% of boys and 22.5% of girls had risky behaviors.	18
Safa et al., 2014-2017, 44	cross-sectional study	Kashan	400	M/F	High school	More than half of the adolescents (51.2%) had risky behaviors. Also, a significant difference was found between the male and female students in this regard.	18

Esmailzadeh et al., 2012, 45	cross-correlation	Qazvin	510	M/F	High school	The use of hookah was the most popular in girls and boys (59%) as compared with cigarette smoking (32.7%), drug use (7.3%), and alcohol consumption (16.7%).	19
Shahraki-Sanavi et al., 2015, 46	cross-correlation	Zahedan	457	F	High school	The highest prevalence of health-risk behaviors of students included: failing to drink natural fruit juice (53.1%), failing to wear a seat belt (43.0%), sitting in a car while the driver is sending message or emails (43.0%), failing to drink milk daily (36.0%), etc.	19
Zabihi et al., 2018, 47	cross-sectional study	Babol	384	M/F	High school	The 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%), etc. were the most prevalent high-risk behaviors among adolescents.	18
Zarei et al., 2019, 48	cross-sectional study	Bushehr	716	M/F	High school	The high risk driving had the highest mean score (14.5 ± 88.67 , ranged 5-25).	18
Sotoudeh et al., 2017, 49	cross-sectional study	Bushehr	377	M	High school	The highest frequency of high-risk behaviors in adolescents involved physical contact and struggle out of school (22.81%), hookah consumption (19.62%), physical contact and struggle at school (18.30%), and smoking cigarettes out of school (11.14%).	19
Jalali et al., 2021, 50	cross-sectional study	Rabor	334	M/F	High school	The male gender is one of the risk factors for alcohol, smoking and other substances, tendency to high-risk sexual behaviors, depression and suicide in adolescents.	16
Brouki Milan et al., 2019-2020, 51	cross-sectional study	West Azerbaijan province	560	M/F	High school	The total mean scores high-risk behaviors in students was 20.57 ± 13.64 (addiction: 5.21 ± 4.98 , alcohol: 4.92 ± 4.85 , sexual behaviors: 3.27 ± 2.75 , and violence: 7.20 ± 5.08).	18
Omidpour et al., 2020-2021, 52	cross-sectional study	Guilan province	384	M/F	High school	The high-risk behaviors of smoking (34.96%), drug use (31.17%) and alcohol (30.62%) were the most common among adolescent students.	19
Panahi et al., 2019, 53	cross-sectional study	Sanandaj	363	M	High school	The prevalence of high-risk behaviors among students was 63.1%.	17

M: male, F: female.

4- DISCUSSION

This study aimed to review and evaluate the tendency to high-risk behaviors and its factors associated with adolescent risk behaviors among 10-19-year-old Iranian. The results showed that the prevalence of high-risk behaviors in

adolescents were 63.1%. The most common five forms of high-risk behaviors including hookah smoking, cigarettes smoking, substance abuse, sexual risk behaviors, and violence, respectively. There was a significant relationship between age, gender, field of study, health literacy, family income, family structure,

attachment to family and friends, commitment to norms, belief in moral principles, social inhibitions, and tendency to high-risk behaviors ($p < 0.05$).

Health-threatening behaviors are one of the most important health and psychosocial challenges that most countries in the world are involved in in some way and impose extensive and severe problems on societies. Despite the many efforts that have been done in the last two decades to increase public awareness of the harm and danger of high-risk behaviors, we are still facing an increasing increase in these behaviors, especially among young people and teenagers (54).

Adolescence is one of the most important and valuable periods of every person's life, and puberty, as a very sensitive path in the growth period, which is the stage of transition from childhood to adulthood, has given the period of adolescence great importance. In this period, a series of physical, psychological and social changes happen in people, which form the foundation of the adult life and old age of people in the future. The process of changes in the period of puberty and adolescence due to its special characteristics is such that this period can face special problems (31-33). Surveys have shown that high-risk behaviors such as smoking, alcohol and other substances are seen among middle school students and high school students (21).

This review showed that the prevalence of high-risk behaviors in Iranian adolescents were high (ranged: 5.4-63.1%). Some researchers believe that teenagers' tendencies towards high-risk behaviors, which are increasing day by day, are a reflection of the emotional and psychological problems they face. These experts believe that feelings of depression, loneliness and isolation often have a direct relationship with high-risk behaviors in teenagers, especially suicide, and

similarly, high self-esteem and having strong social support resources are protective factors for teenagers against high-risk behaviors such as smoking, alcohol and they are anti-social behaviors (55, 56). Another study showed that the causes of risky behaviors are biological (genetic), personal, environmental, social (gender and race), and cultural (57). According to the latest national census, 28% of the country's population is in the age range of 10-19 years. Therefore, knowing the high-risk behaviors of this age group is necessary for future planning and logical and principled intervention to reduce high-risk behaviors (31, 32).

In this study, some of the most common adolescent high-risk behaviors include tobacco smoking (cigarette smoking, hookah smoking), substance abuse, sexual risk behaviors and violence, respectively.

Tobacco use is evolving in adolescents. Youth use of tobacco products in any form is unsafe, irrespective of whether it is smoked, smokeless, or electronic. Tobacco product use is started and established primarily during adolescence (58, 59). Nearly 9 out of 10 adults who smoke cigarettes daily first try smoking by age 18, and 99% first try smoking by age 26 (59). Results of current review showed that hookah smoking (ranged: 6.9-59%) and cigarettes smoking (ranged: 10.9-44.1%) in Iranian adolescents were high. In 2022, about 4 of every 100 U.S. middle school students (4.5%), and about 1 of every 6 U.S. high school students (16.5%) reported current use of a tobacco product. Also in 2022, 0.5% of middle school students and 1.5% of high school students reported that they had smoked hookah in the past 30 days (60, 61).

Results of current review showed that substance abuse (ranged: 1.8-31.1%), and alcohol consumption (ranged: 9.3-30.6%) in Iranian adolescents was remarkable. Based on YRBS results, alcohol is the

most commonly used substance among young people in the U.S (62).

According to YRBS results from 13, 677 high school students: 29% drank alcohol, 14% binge drank, 5% of drivers drove after drinking alcohol, 17% rode with a driver who had been drinking alcohol and 8% had been in a physical fight on school. Alcohol, drugs and tobacco impact the developing brain. Usage has the ability to alter brain structure and impair decision-making abilities, even after one use. The most commonly abused substances by adolescents are alcohol and psychotropic substances (62, 63).

The results of some studies show youth who drink alcohol are more likely to experience:

- School problems, such as higher rates of absences or lower grades.
- Social problems, such as fighting or lack of participation in youth activities.
- Legal problems, such as arrest for driving or physically hurting someone while drunk.
- Physical problems, such as hangovers or illnesses.
- Unwanted, unplanned, and unprotected sexual activity.
- Disruption of normal growth or sexual development.
- Physical and sexual violence.
- Increased risk of suicide and homicide.
- Alcohol-related motor vehicle crashes and other unintentional injuries, such as burns, falls, or drowning.
- Memory problems.
- Misuse of other substances.
- Changes in brain development that may have life-long effects.
- Alcohol poisoning (63-66).

Results of current review showed that sexual risk behaviors (14.5-41.6%), in Iranian adolescents was high and alarming. Sexual risk behaviors place youth at risk for HIV infection, other STDs, and unintended pregnancy. Among U.S. high school students surveyed in 2019, 38% had ever had sexual intercourse (67). When adolescents become sexually active, their behaviors can often result in sexually transmitted infections (STI), and unplanned pregnancy. Even though many STIs can be treated, the symptoms and complications from infections, such as herpes and HIV, must be managed for life. Most teenagers engaging in sexual activity aren't using consistent birth control methods or protection, and if they are, it's not done properly – both increasing the risk of unplanned pregnancy (33, 68). School health programs can help young people adopt lifelong attitudes and behaviors that support their health and well-being—including behaviors that can reduce their risk for HIV and other STDs. These programs in schools should provide health information that is basic, accurate, and directly contributes to health-promoting decisions and behaviors.

Results of current review showed that violence (23.4%) in Iranian adolescents was remarkable. Youth violence is a significant public health problem that affects thousands of young people each day and in turn, their families, schools, and communities. Youth violence can have serious and lasting effects on young people's physical, mental, and social health. It can harm development and contribute to impaired decision-making, learning challenges, decreased connections to peers and adults, and trouble coping with stress. Violence increases health care costs, decreases property value, negatively impacts school attendance, and decreases access to community support services. A combination of individual (history of violent victimization, attention deficits,

involvement with drugs, alcohol, or tobacco, antisocial beliefs and attitudes, etc.); family risk factors (authoritarian childrearing attitudes, harsh, lax, or inconsistent disciplinary practices, parental substance abuse, etc.); peer and social risk factors (association with delinquent peers, poor academic performance, school failure, etc.); and community risk factors (diminished economic opportunities, high concentrations of poor residents, socially disorganized neighborhoods, etc.) contribute to the risk of youth violence. We can protect youth and support their growth into healthy adults. Certain factors may increase or decrease the risk of youth experiencing or perpetrating violence. In order to prevent youth violence, we must understand and address risk and protective factors at the individual, relational, community, and societal levels (67, 69-71). In current review, there was a significant negative relationship between religious tendencies and risky behaviors of students. One of the factors that protect an individual from risky behavior is religiosity, which has been referred to as a shield against risky behaviors (72). Studies have shown that young people who believe in God and the important role of religion in their lives, in comparison with their non-religious peers, are less often involved in risky behaviors, such as violence and early sexual relations (73-75). Results of a meta-analysis to examine 40 studies on the relationship religion has with destructive and constructive behaviors, show there is a significant positive relationship between religiosity and constructive behaviors (76). As a result, by strengthening religiosity and religious beliefs in students, risky behaviors will also decrease.

5- CONCLUSION

Adolescence is a period known as the period of vulnerability, of being at risk, and adolescents are exposed to high-risk behaviors. Risky behaviors refer to those behaviors that put the health and well-

being of adolescents and other people in danger. Based on the review, the prevalence of high-risk behaviors in Iranian adolescents was high. The five most common adolescent high-risk behaviors include cigarette smoking, hookah smoking, substance abuse, sexual risk behaviors, and violence, respectively. There was a significant relationship between age, gender, field of study, health literacy, family income, and family structure, attachment to family and peers, commitment to norms, belief in moral principles, social inhibitions, and tendency to high-risk behaviors. We can protect youth and support their growth into healthy adults. So, the supply of tobacco products to adolescents should be prohibited. It is important to create healthy entertainment such as sports and cultural competitions, develop programs and designing educational interventions in order to prevent risky behaviors and increase communication skills and self-efficacy in adolescents.

One of the factors that protect an individual from risky behavior is religiosity, which has been referred to as a shield against risky behaviors. There was a significant negative relationship between religious tendencies and risky behaviors of students. Studies have shown that young people who believe in God and the important role of religion in their lives, in comparison with their non-religious peers, are less often involved in risky behaviors, such as violence and early sexual relations. Research shows that prevention efforts by teachers, administrators, parents, community members, and even students can reduce risky behaviors and improve the school environment.

6- CONFLICT OF INTEREST: None.

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