

Family and the Risky Behaviors of High School Students

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Background: Family plays an important role in helping adolescent acquiring skills or strengthening their characters.

Objectives: We aimed to evaluate the influences of family factors, risky and protective, on adolescent health-risk behavior (HRB).

Patients and Methods: In this cross-sectional study, students of high schools in Kerman, Iran at all levels participated, during November 2011 till December 2011. The research sample included 1024 students (588 females and 436 males) aged 15 to 19 years. A CTC (Communities That Care Youth Survey) questionnaire was designed in order to collect the profile of the students' risky behaviors. Stratified cluster sampling method was used to collect the data.

Results: Using logistic regression, 7 variables enrolled; 4 of them were risk factors and 3 were protective factors. The risk factors were age, (linear effect, ORa = 1.20, P = 0.001), boys versus girls (ORa = 2.33, P = 0.001), family history of antisocial behavior (ORa = 2.29, P = 0.001), and parental attitudes favorable toward antisocial behavior (ORa = 1.72, P = 0.03). And, protective factors were family religiosity (ORa = 0.65, P = 0.001), father education (linear effect, ORa = 0.48, P = 0.001), and family attachment (ORa = 0.78, P = 0.001).

Conclusions: Our findings showed that family has a very significant role in protecting students against risky behaviors. The education level of the father, family religiosity, and attachment were the most important factors.

Keywords: Parents; Risk; Health; Behaviors; Adolescent

1. Background

Adolescents are valuable resources in human societies who encounter risk factors because of their age and evolutionary features (1). Sometimes, adolescent risk factors may last until adulthood and will become harmful for them and others (2). Risky and protective factors can affect children at different stages of their lives. At each stage, risky events occur that can be prevented through intervention measures. Early-childhood risks like aggressive behavior, can be changed or prevented by family, school, and community. These interventions focus on helping children develop appropriate and positive behaviors. If negative behaviors are not addressed properly, they can lead to worse situations such as academic failure and social difficulties, which put children at further risk like drug abuse (3). When a child enters adolescence, his or her family communications change drastically and attain a new form (4). Adolescent's ongoing attempts to achieve autonomy can result in increased parent-child conflicts at the beginning of this stage and negative feelings during this period.

These conflicts mainly happen because of different expectations of suitable behavior from both parents and children, as well as conflicting understanding of the responsibility, independence, and duties (5). The family is the fundamental factor in supporting adolescents emo-

tionally, economically, and providing them an identity and feeling of belonging (6). Any kind of positive or negative change in the family has a direct effect on the larger human society. Family stability or instability directly affects the society. Thus, in societies where family values are unstable, moral values are considered irrelevant. Although adolescents are susceptible to risky behaviors, there are factors such as religious activities, good relationship with parents, and parental support that might buffer against the adolescent's tendency towards high-risk behaviors (7, 8).

The concept of health-risk behavior can be defined as; any activity undertaken by people with a frequency or intensity that increases their risk of disease or injury such as substance abuse, risky driving, violence or suicidal tendencies, and antisocial behavior (9, 10). There is evidence that health-risk behaviors tend to cluster together with similar risk factors, underlying a lot of risk behaviors (11, 12). Inquiries into risk behaviors and protective factors among adolescents are prominent in the social, behavioral, and health sciences, and include study of particular risk factors (13). The significant role of family and its environment on adolescents' tendency towards high-risk behaviors, and the increasing rate of this problem among

Iranian adolescents has led many scholars to focus on this important social issue (14, 15).

Iran is an Islamic country, respecting family and is currently undergoing a transition towards a modern society. It has a special cultural condition, which emphasizes Islamic values. Because, Iran is in transition from a traditional society to a modern and industrial one, damages to family roles and relations are important problems (16). Moreover, in developing countries, the key role of family in educating adolescents and its effect on juvenile delinquency seems more important than that in western countries. Severe behavioral controls, which are imposed on adolescents by various organizations, also make the range and conditions of adolescent behaviors so different from western countries.

On the other hand, cultural issues of every society must be considered while speaking about risky behaviors. Values and norms of every society are effective in the pattern of these behaviors (17). Olds' reviews revealed that social norms are the strongest factor for participating in risky behaviors (18). Although there are some studies in this field in Iran, most published papers explored only the frequency of risk behaviors among Iranian students. This paper, however, presents comprehensively the results of an analytical study which explores the relationship between family factors and the profile of student's behavior.

2. Objectives

We aimed to evaluate family and its effects on the risky behaviors among Iranian high school students in South-East of Iran.

3. Materials and Methods

3.1. Participants

The present research is a cross-sectional study, carried out among high school students in one of the main cities in the southeast of Iran (Kerman), with a population of more than 650 000, from November to December 2011. The research sample included 1024 students aged 15-19 years, representing all levels of the high school (first to third grades and pre-university). Eligible schools included any high school with students in their first to third grades and pre-university in Kerman. Students, who were transferring permanently from another city to a Kerman high school during the study period, were not included in the research. In addition, high schools without all grades were excluded from our sample. In our sample, around 90% of schools were included. By receiving permission of the Education Department's Counseling Center in Kerman, we selected our subjects using a stratified cluster sampling technique.

First, we classified high schools based on their gender, location (north, west, east, and south), and type, either governmental or private. Then, in proportion to size, we selected schools randomly, while students were selected

from different grades within their classes. All participants were informed about the goals of the survey and received the guidelines and instructions to fill out the questionnaire. Participants signed written informed consent and then completed the questionnaires anonymously.

3.2. Instrument

We used "Communities That Care Youth Survey" to assess a broad set of risk and protective factors across the domains of family, school, community, peer, and individual as well as health-risk behavior outcomes. This questionnaire was prepared by Hawkins and Catalano (19, 20). In this study, we only used a part of this questionnaire, which measured family domain. The questionnaire consisted of an index of problem behaviors, including 14 items (which measured their frequency during the previous months or year) such as smoking, aggression, fighting, weapons carrying, and suspension from school. An index of protective factors assessing by family rewards for prosocial involvement included 3 components. Assessment of family attachment had 3 components. Family religiosity was assessed by 4 components and family opportunities for prosocial involvement by 4 components. Risk factors consisted of poor family management with 8 components, family conflict with 3 components, family history of anti-social behavior with 7 components and parental attitudes favorable toward antisocial behavior with 4 components.

Validity of the questionnaire was ensured through 3 stages, including scale translation, face validity, and content validity. Regarding scale translation, we used the procedure of forward-backward translation. Then, it was revised by four health education and panel members. They were asked to review each item and evaluate the appropriateness of the translated items for face validity, in other words, to be understandable by the research target. The content validity of CTC questionnaire was investigated both quantitatively and qualitatively by the same experts. We asked the experts to evaluate the quality and quantity of each item of CTC questionnaire. Necessity, relevancy, simplicity, and clarity of each item were assessed using Likert 5-point type scale. An open question was also asked to elicit the opinions of the experts concerning each item. Content validity index (CVI) was computed on the basis of the simplicity, clarification, and relevancy of each item. A CVI score of higher than 0.75 was considered reasonable. Content validity ratio (CVR) scores were calculated based on the necessity of each item. A CVR score of equal to or higher than 0.59 was envisaged a good content validity by 10 experts. The mean of CVI and CVR was 0.87 and 0.78, respectively, signifying a good content validity for CTC questioner.

Using the test-retest technique, 40 students (20 girls, 20 boys) responded twice with a gap of 10 days between the two assessments. The consistency between their scores was computed by the Pearson correlation coefficient of 0.75. Additionally, we computed the Cronbach α value for all participants after the data collection, which was at

0.78. The questions of each risky behavior style were measured by 5 items that were rated on a 5-point Likert scale ranging from never to more than 10 times in the last 30 days or last year. The presence of floor and ceiling effects may influence the reliability, validity, and responsiveness of an instrument. In order to determine floor and ceiling effects, we calculated the percentage of student with very low and very high scores. The rates of floor effect and ceiling effect were calculated for each scale in all questionnaires and were considered suitable when it was below 15%, because there was no consensus on how to define floor and ceiling effects mathematically.

3.3. Procedure

Students in grades first to third and pre-university who were enrolled in high schools in Kerman were targeted during the study period. We collected consent form from the students and their parents separately. Students whose parents and themselves provided written consent to participate were identified by the school manager. Having checked with the schools, students were approached in their classes, but they answered the questions in a private environment and their responses were collected without any identifiers. In order to assess the associations between HRB and family factors, we estimated the sample size by comparing two mean formulas. In this calculation and were set at 5% and 10%, and the minimum effect size of 0.5 of the standard deviation, and design effect of 1.5. Based on these assumptions, the estimated sample size was 1050.

3.4. Data Analyses

The data was computerized and analyzed using the statistical package of social sciences (SPSS) version 18, and before data entry, all completed questionnaires were evaluated by the main investigator. Then, the distribution of the responses was assessed and the main variables were described. In the next step, risky behaviors were divided into two groups: low-risk if the subject had smoking, aggression behaviors less than three times per month and weapons carrying, fighting, suspension from school less than three times per year, and high-risk groups if the subject had exposure to the above-mentioned items more than three times.

In this analysis, the main dependent variables were age (in year) gender, grade (first to third grades and pre-

university), risk and protective factors in the family (in 8 subscales, each one had a score between 0 and 4). Using logistic regression, crude and adjusted ORs between having risky behaviors and other independent variables (sociodemographic variables, risk and protective factors in the family) were computed. In the final multivariate model, only the significant variables in crude models were entered.

4. Results

A total of 1024 students between 15 and 19 years of age (57.4% females, mean of age = 16.4, SD = \pm 1.5 year) completed the questionnaires. The percentage (number) of students in grades first to third and pre-university were 28% (287); 26.6% (272); 26.4% (270); and 19% (195), respectively (Table 1) The number of students stated that they didn't practice any risky behaviors was 443 (41.7%). Conversely 307 (52.3%) girls and 136 (31.2%) boys and 13 (2.2%) of girls and 29 (6.7%) of boys experienced more than 6 instances of HRB (Table 2). A significant positive association was found between age and the frequency of HRB (crude add ratio (ORc) = 1.23, P = 0.01, adjusted odds ratio (ORa) = 1.20, P = 0.001. The results of the logistic regression model showed that boys had more HRB (ORc = 2.40, P = 0.001; ORa = 2.33, P = 0.001). Although the association between grade levels and HRB was significant in the univariate analysis (ORc = 1.16, P = 0.001); it was not significant in the multivariate model (ORa = 0.90, P = 0.42). The number of sibling in family (ORc = 1.28, P = 0.001) had a significant positive association with HRB, but its association was not significant in the multivariate model (ORa = 0.98, P = 0.78).

Table 1. Demographic Characteristics of Students in Kerman High Schools ^a

Variables	Results, No. (%)
Gender	
Female	588 (57.4)
Male	436 (42.6)
Grade differences	
Grade 1	287 (28)
Grade 2	272 (26.6)
Grade 3	270 (26.4)
Grade 4	195 (19)

^a Data are presented as No. (%).

Table 2. Gender, Age and Number of Risky Behaviors Among Participating Students in Kerman High Schools ^a

	0	1	2	3	4	5	+6	
Females	307 (52.3)	146 (24.8)	62 (10.6)	32 (5.4)	17 (2.9)	11 (1.9)	13 (2.2)	588 (100)
Age, y								
15	102 (48.6)	59 (28.1)	23 (11.0)	13 (6.2)	7 (3.3)	2 (1.0)	4 (1.9)	210 (100)
16	144 (47.5)	72 (23.8)	33 (10.9)	28 (9.2)	7 (2.3)	6 (2.0)	13 (4.3)	303 (100)
17	138 (42.5)	85 (26.2)	40 (12.3)	24 (7.4)	11 (3.4)	15 (4.6)	12 (3.7)	325 (100)
18 + 19	59 (31.7)	50 (26.9)	25 (13.4)	15 (8.1)	14 (7.5)	10 (5.4)	13 (7.0)	186 (100)
Total	443 (43.3)	266 (26.0)	121 (11.8)	80 (7.8)	39 (3.8)	33 (3.2)	42 (4.1)	1024 (100)

^a Data are presented as No. (%).

Table 3. Logistic Regression Model, the Association Between the Presence of Health Risk Behavior and Family Variables Among Participating Students in Kerman High Schools

Variable	Crude Odd Ratio	P Value	Adjusted Odd Ratio	P Value
Linear effect of age, y	1.23 (1.10-1.38)	0.001	1.20 (1.03-1.36)	0.001
Gender				
Female	1		1	
Male	2.40 (1.86-3.12)	0.001	2.33 (1.70-3.17)	0.001
Grade level				
Grade 1	1		1	
Grade 2, 3, 4	1.16 (1.03-1.30)	0.001	0.90 (0.61-1.07)	0.42
Mother education (Linear effect)				
Primary, secondary and high school	1	0.001	1	0.58
University	1.29 (1.06-1.32)		1.02 (1.10-1.59)	
Father education (Linear effect)				
Primary, secondary and high school	1	0.001	1	0.001
University	0.60 (0.41-0.88)		0.48 (0.28-0.83)	
Number of siblings in family	1.28 (0.93-1.29)	0.001	0.98 (0.91-1.08)	0.78
Family rewards for prosocial involvement	0.72 (0.61-0.76)	0.001	0.92 (0.74-1.17)	0.51
Family attachment	0.66 (0.58-0.73)	0.001	0.78 (0.70-1.01)	0.001
Family religiosity	0.57, (0.47-0.67)	0.001	0.65 (0.54-0.86)	0.001
Family opportunities for Prosocial involvement	0.60, (0.54- 0.71)	0.001	0.94 (0.78-1.16)	0.56
Poor family management	1.96 (1.57-2.44)	0.01	1.23 (0.91-1.33)	0.12
Family conflict	1.15 (1-1.33)	0.001	0.98 (0.81-1.16)	0.83
Family history of antisocial behavior	3.11 (2.38-4.07)	0.04	2.29 (1.64-3.39)	0.001
Parental attitudes favorable toward antisocial behavior	2.54 (1.85-3.48)	0.01	1.72 (1.10-2.68)	0.03

Mothers' education levels had a significant positive association only in the univariate analysis (ORc = 1.29, P = 0.001; ORa = 1.02, P = 0.58). On the other hand, fathers' education levels showed a negative association as a predictor of HRB in both models (ORc = 0.60, P = 0.01; ORa = 0.48, P = 0.001). Risk factors related to "the family history of antisocial behavior" had a very strong positive association with HRB in both models (ORc = 0.3.11, P = 0.04; ORa = 2.29, P = 0.001). Whereas "poor family management" showed a significant association with HRB only in the univariate model (ORc = 1.96, P = 0.01; ORa = 1.23, P = 0.12), "parental attitudes favorable toward antisocial behavior" had a positive association with HRB in both the univariate and multivariate models (ORc = 3.35, P = 0.001; ORa = 1.27, P = 0.003). Also, "family conflict" was another variable, which had statistically significant positive asso-

ciation with HRB in the univariate analysis (ORc = 1.15, P = 0.001). However, in the multivariate, the association was absent (ORa = 0.98, P = 0.83).

Protective factors related to "family rewards for prosocial involvement" (ORc = 0.72, P = 0.01; ORa = 0.92, P = 0.51) and "family opportunities for prosocial involvement" (ORc = 0.3.11, P = 0.004; ORa = 2.29, P = 0.001), showed a significant negative association with HRB only in the univariate but, in the multivariate, the association in both variables were removed. In the final multivariate logistic regression, 4 variables, including age, (ORa = 1.20, P = 0.001), males versus females (ORa = 2.33, P = 0.001), family history of antisocial behavior (ORa = 2.29, P = 0.001), and parental attitudes favorable toward antisocial behavior (ORa = 1.72, P = 0.03) were risk factors for adolescents with HRB in both models. Additionally, family religiosity (ORa

= 0.65, $P = 0.001$), fathers' education levels ($ORa = 0.48$, $P = 0.001$) and family attachment ($ORa = 0.78$, $P = 0.001$) were protective factors (Table 3).

5. Discussion

The presented results provide a broad picture of the effect of family risk and protective factors on adolescents' health-risk behaviors. We found that family attachment, father education and family religiosity were protective factors. On the other hand, boys versus girls, age, family history of risky behaviors, and parental attitudes favor toward antisocial behavior, which could result in increased risky behaviors. In recent decades, dealing with the population of adolescents has become an international problem, and this problem is important in Iran. According to the traditional system in Iran, the family plays an important role in training and guiding adolescents. The presence of various competitive institutions like schools, peers, the Internet, and satellite networks, which have deep potential differences in terms of values and ideals has changed the dynamics of the family and challenged family performance.

In studying the reasons of risk factors in families, it is better to pay attention to a combination of factors and relationships and to take an effective step to prevent and treat them. Results of the present study have revealed that when adolescents grow older, they get more involved in risky behaviors. Other studies showed similar results (21, 22). This variable can be considered a suitable indicator of adolescent high-risk behaviors. Therefore, initial preventive programs must begin in preadolescent ages in the form of informative and warning programs and must focus more on adolescents who are at higher risks. Another individual risk factor is the role of gender in high-risk behaviors; i.e. boys are at higher risk than girls. It can be attributed to cultural features namely, cultural and educational conditions limit girls and allow boys to have more freedom. Studies have taken sex differences into account and mentioned that different cultures treat girls and boys differently, which subsequently affect their socialization and various behaviors. Studies carried out by Huebner et al. and Kapungu et al. revealed similar results (23, 24).

One unique contribution of the existing study was to obtain the most important risk factor which was the predictor of the adolescents' health-risk behaviors in family, i.e. a family history of risky behavior. Adolescent in the families which excuse them for breaking the law are more likely to develop problems with risky behavior. Families whose parents engage in risky behavior inside or outside the home are at greater risks for exhibiting risky behavior. Adolescents whose parents practice drug abuse have higher tendencies towards risky behaviors because they watch their parents' behavior every day and attempt to (under the influence of observational learning) select them as their models in life and act accordingly. In addition, similar studies support the results obtained in

this research (20, 25). Parental attitudes favorable toward antisocial behavior were another risk factor. Parental attitudes do appear to be influential in their own right; for example, children whose parents behave aggressively or violently at home are more likely to become aggressive and violent adolescents (26, 27). However, the independent significance of this risk factor may be most relevant to drug use. A number of US studies have linked 'parental modeling' with favorable attitudes towards the use of alcohol, tobacco, and illegal drugs at home to the chances of children becoming users and abusers (20).

One of the most protective elements in the family was attachment and intimacy between family members, especially parents. It is shown that this factor has a significant effect on health-risk behaviors. In his research, Wisner (2004) concluded that poor attachment between family members, lack of parental empathy, and absence of parents at home are predictors of high-risk behaviors in children (28). Conversely, warm and intimate relationship between parents and children are the basis of emotional security in adolescents and result in strong bonds between parents and adolescents; this conformity causes improved self-esteem in adolescents, makes them spend most of their free times with their families and thus reduces high-risk behaviors (29-31).

The second protective factor was the role of religious beliefs and religious practices within the family. One of the most important factors in reducing high-risk behaviors is religious beliefs and religious practices as well as encouraging adolescents to practice religion. Religious beliefs play an important role in providing health, especially mental health. Risky behaviors are strongly influenced by religious values and beliefs; for example, it was shown in a research on 299 American adolescents that religious constraints and a sense of belonging to Muslim heritage prevented adolescents from drinking alcohol (27, 32). It was shown that religious beliefs prevented high-risk behaviors (33).

Surprisingly, we found a positive association between the level of mother's education and risky behavior. This type of association was also reported by another study in Iran (34). However, most studies in the world showed comparable negative associations between mothers' education levels and risky behaviors. Besides, higher education is associated with higher probability of having a job and being busy. Working mothers spend less time for emotional support, continuous supervision, encouraging and helping with school activities, and this might result in developing riskier behaviors among their children (35). Similar to other findings, our results showed that family has a key role in shaping students' behavior in Iran. A warm family with strong support, and religious practices would have a very significant role in training students. However, we should note that well educated mothers might have less impact on the risky behaviors of their children. This is most probably due to the lack of time these mothers spend with their children.

5.1. Limitation

This study could not clearly determine which behavioral factor would result in other behaviors. Moreover, these findings were obtained only from students who attended the school, and thus school dropouts, students who had failed academically, those who could not enter high school and those who studied at night schools were not included. Additionally, because of the sensitivity of some subjects like smoking, students might underreport their behaviors, although by using different techniques, we attempted to convince students to respond with minimum barriers.

5.2. Human Subjects Approval Statement

Based on the proposal of the study, the Medical Research Ethics Committee of the University of Kerman gave an approval to the researcher to conduct the survey among high school students in Kerman, and informed consents submitted to Medical Science University of Kerman. In this regard, two different written consent forms were taken: the first one involved the permission to do the study; the second one from Ministry of Education for participation in the study. After we have identified the classrooms in a school, enough parental permission forms were delivered to the principal for each selected student. The code and date of ethical approval were K/89/70-2011. We certify that there is no conflict of interests with any financial organization regarding the material discussed in the manuscript.

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Authors' Contributions

Abbas Abbaszadeh and Eshagh Dortaj Rabori contributed to the development of the protocol, and the original idea. Faroukh Abazari developed the original idea and the protocol, abstracted the data, and prepared the manuscript. Dr. Aliakbar Haghdoust analyzed the data, wrote the manuscript, and was the guarantor.

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