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Awareness, Attitude, and Life Skills Related to Cigarette Smoking among High School Boy Students

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ABSTRACT

Background: Life skills training is one of the ways to deal with stressful situations and risk-taking behaviors. Given the importance of life skills to deal with risk-taking behaviors such as smoking, the objective of this study was to examine the association between awareness, attitude and life skills and smoking status among boy students in Ilam, Iran.

Methods: This was a descriptive study that was performed on 553 students in high school boy students in Ilam in 2018. Sampling was conducted in two steps: first, schools were selected by a random sampling method; second, one class was selected randomly from each school and each grade, and all of the students of the selected class were included using the census method. Data were collected through a valid and reliable three-part questionnaire, including demographic characteristics, life skills, and smoking status, and then analyzed by using descriptive and analytical tests at $SPSS_{22}$ software.

Results: The mean age of students, age of smoking initiation as well as the mean of individuals Grade Point Average (GPA) was 13.58, 11.27, and 17.95, respectively. The mean score of awareness toward the harmful effects of smoking, attitude toward smoking, and normative expectations were estimated at 82.18, 32.6, and 68.04, respectively. The total score of life skills was 57.3, which was higher than average. The highest and lowest life skills score was related to problem-solving skills (56.75) and compatibility skills (52.21). Besides, having friends and family members who smoke, attitude toward smoking as well as normative expectations were significantly associated with cigarette smoking status (P-value < 0.05).

Conclusion: Given the results of the study, the life skills score was moderate and far from the ideal status. Therefore, considering the smoking experience at an early age and focusing on life skills training is essential in elementary schools.

Key words: Life skills, Awareness, Attitudes, Smoking, Students

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Introduction

Cigareete smoking is a global problem. It is projected that the number of smokers increases from 1.3 billion in 2013 to 1.6 billion people in 2025 (1). Over the past decade, tobacco-related deaths around the world have tripled (2). Smoking kills more than 8 million people annually. More than 80 % of the world's 1.3 billion tobacco users live in low- and middle-income countries (3).

In the last three decades, smoking has decreased dramatically due to increased awareness regarding the health risks of cigarette smoking and effective control policy in developed countries, whereas it has increased in developing countries (4). Although health programs in developed countries have resulted in a reduction in smoking, cigarette smoking incidence is increasing among young ages in developing and low-income countries (5, 6). The existing data indicate that the first cigarette experience occurs between 11 and 15 years old and that 88 % of adult smokers start smoking before the age of 18 (7). According to the available statistics, on a daily basis, more than 3,800 younger people under the age of 18 initiate cigarette smoking (8). The younger you start smoking, the more likely you will find it hard to quit (9). Early smoking initiation brings about many problems because nicotine dependence is more severe in those who start smoking earlier compared to those who start smoking later and less possibility exists to quit smoking (5).

The use of prevention programs is regarded as the main strategy for reducing the rate of smoking among children and adolescents (10). Over the last three decades, schools have become a unique environment for implementing cigarette smoking prevention programs because most children are easily accessible and can easily apply tobacco prevention interventions and their daily activities (11, 12).

It is also worth noting that adolescents who do not acquire the necessary skills to deal with tense situations will be more prone to drug use, smoking, and antisocial behaviors (13). One of the ways to deal with tense situations is life skills training, which was developed by Botvin in 1979 (14). As an attempt to social psychology injuries prevention, the WHO developed a program entitled life skills training and suggested it to UNICEF (United Nations Children's Fund) in 1993 (15). Since adolescents are more accessible in schools for life skills training, this course is included in developed countries' adolescent curriculum (16).

However, in developing countries, including Iran, smoking rates continue to rise, especially in adolescents (8). In Iran, tobacco use has accounted for more than 11000 annual deaths of all ages, with an upward trend in smoking prevalence over the past decades (17). In Iran, according to the WHO report, the prevalence of smoking in men, women, and the whole population is 20.4 %, 1 %, and 10.8 %, respectively (18), and the average daily cigarette consumption for smokers is 13.7 cigarettes per day (19). In a study conducted by Bidel et al. (20), the prevalence of smoking among boy students was 11.4 % in Ilam province of Iran. Given the increasing prevalence of smoking in Iran, especially in young people, and the importance of acquiring life skills to deal with risk-taking behaviors and its impact on smoking status, the objective of this study was to survey the awareness, attitude, and life skills status related to cigarette smoking among boy students in Ilam, Iran.

Materials and Methods

This was a descriptive study conducted among the first grade of high school boy students at state and non-profit schools in Ilam, in the west of Iran, in 2018.

Sample size and sampling methods

The sample size was determined based on the study of Naseri et al. (21). Given a 64 % rate of life skills in their study and a 95 % confidence interval and 0.04 effect size, the sample size was calculated according to the following formula (1):

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(1):

$$n = \frac{z^2 \cdot p(1-p)}{d^2} = \frac{(1/96)^2 \times 0/64 \times 0/36}{(0/04)^2} = 553$$

The sample size was taken into account with the possibility of a 10 % drop out in samples. Moreover, the sampling process was conducted in two steps, i.e., firstly schools were selected by a random sampling method. Secondly, from each education grade in each school, one class was selected randomly, and that all of the students of the selected class were included using the census method.

Data collection tools

Data were collected using a questionnaire, which has already been used in the study of Neseri et al. (21) to the evaluation of students' life skills in exposure to smoking in high school in Tabriz, Iran. The reliability of the questionnaire was determined between 0.7 and 0.75 which was variable in different parts of the questionnaire (21). Due to the minor changes in the questionnaire, the validity of the questionnaire was assessed again using the comments of 15 experts in the field of community health nursing, general health, social medicine, psychiatric nursing, psychology, and psychiatry. Additionally, the reliability of the questionnaire was evaluated using internal consistency. Cronbach's Alpha was 0.84 which reflects the high reliability of the questionnaire.

The questionnaire included three parts:

A: The first section was related to students' demographic characteristics.

B: The second part regarded the awareness about the harmful effects of smoking (10 items), the attitude toward smoking (10 items), and cigarette smoking-related life skills (36 items). In particular, cigarette smoking-related life skills consisted of normative expectations toward cigarette smoking (3 items), problem-solving and decision making skills (8 phrases), compatibility skills (7 items), communication skills (7 items), assertiveness skills (6 items), and finally resistance skills against smoking (5 items).

The items related to awareness comprised of two options. Responses were scored 1 for a correct answer and 0 for an incorrect answer, and higher scores indicating more awareness.

Four options were considered for attitude items. The scores 0, 1, 2, and 3 were assigned to the responses of completely disagree, disagree, agree, and completely agree, respectively. A lower score indicated a more negative attitude toward cigarette smoking.

Normative expectations questions consisted of five options. The scores 4, 3, 2, 1, and 0 were given to the responses of none of them, some of them, half of them, most of them, and all of them accordingly. The maximum score indicated the abnormality of smoking among students.

The questions related to problem-solving and decision-making skills, compatibility skills, and communication skills consisted of four options. The scores of 0, 1, 2, and 3 were allocated to the choices in the order of never, rarely, quite often, and always. Higher scores indicated higher skills.

The questions of assertiveness skills consisted of four choices. The scores 0,1,2 and 3 were given to the choices of I certainly can not, I probably can not, I probably can, and I certainly can, respectively. A higher score indicates more assertiveness skills.

The items of resistance skill comprised of three choices. The scores of 0,1 and 2 were given to the choices of not at all, maybe, and certainly, respectively. The maximum score indicates one's high level of resistance toward smoking.

Subsequently, the score of awareness, attitude, normative expectations, and life skills was adjusted at 0-100 to more comparability of dimensions.

C: The third part was related to smoking status and evaluated via six questions.

Data analysis

Data analysis was performed using SPSS22. The normality of data was examined through the Kolmogorov-Smirnov Test. Considering the results of the K-S test, Mann-Whitney U and Kruskal-Wallis tests were used to examine the association between demographic variables and life skills. Besides, the Spearman correlation was

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run to examine the association between age, GPA, awareness, attitude, and life skills. Chi-Square test was applied to examine the association between demographic variables and smoking status, intention to smoke in the future. The binary logistic regression model was used to assess influencing factors on dependent variables.

The current research study was approved by the Ethics Committee of Tabriz University of Medical Sciences (IR.TBZMED.REC.1395.162) and the Department of Education in Ilam. The study participants were recruited after being informed about the purpose of the study, the voluntary nature of the study, and given the assurance of confidentiality and anonymity.

Results

Characteristics of the students included in the current analysis are summarized in Table 1. The mean age of students, the mean age of smoking initiation, and the mean students' GPA were 13.58, 11.26, and 17.95, respectively. 32 % of students had a smoker friend, while 17.8 % had a smoker father. The prevalence of smoking was estimated at 11.45 % among students.

It was revealed that 22.2 % of students who had smoker friends would smoke, whereas it was only 5.1 % for those who did not have any smoker friends. Out of 22.2 % of students, 5.2 % of them stated that they intend to cigarette smoking in the next year. On the contrary, only 0.8 % of students who had no smoker friend stated that they have the intention to cigarette smoking in the next year. 19.3 % of smokers and 0.2 % of non-smokers reported that they will undoubtedly smoke next year. Moreover, there was a statistically significant association between the smoking status and having a smoker friend, having a smoker family member, father's profession, and education grade. Besides, a statistically significant association was further observed between the intention of cigarette smoking in the future, and having smoker friends, having smoker family members, cigarette smoking.

As represented in Table 2, the mean score of awareness of the harmful effects of smoking was 82.18, and the mean score of attitude toward smoking was 32.6. Additionally, the mean score of normative expectations was 68.04. The score of all items in life skills was higher than average (> 50). The total score of life skills was 57.3. The highest and the lowest score for life skills was related to problem-solving skills (56.75) and the compatibility skills (52.21) accordingly. The results showed that the mean total score of life skills was higher among non-smokers than smokers. The non-smokers considered smoking as a deviant matter more than smokers.

The analytical statistics are presented in Table 3. The correlation between age and awareness of the harmful effects of smoking, normative expectations toward smoking, assertiveness as well as resistance skills was statistically significant. Besides, there was a statistically significant correlation between the GPA and normative expectations toward smoking and problem-solving skills. Awareness of the harmful effects of smoking had a significant negative correlation with attitude toward smoking and a significant positive correlation with normative expectations toward smoking. Moreover, a significant and negative correlation was found between attitude and normative expectations.

As shown in Table 4, awareness of the harmful effect of smoking, attitudes toward smoking, and normative expectations were significantly associated with having smoker friends. Students who had no smoker friends had more awareness of smoking and a more negative attitude towards smoking, and also considered smoking as abnormal behavior. Awareness of the harmful effects of smoking, normative expectations, assertiveness, and resistance skills was significantly associated with grade. Awareness of the harmful effects of smoking, assertiveness, and resistance skills was higher in third-grade high school students. Furthermore, first-grade high school students considered smoking as a more abnormal behavior than second and third-grade high school students. Problem-solving skills,

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assertiveness, resistance skills, and the total mean score of skills were significantly associated with the habitation status, and especially those living in rural areas had a higher score. Attitudes toward smoking, normative expectations, and the total mean score of life skills were significantly associated with smoking status, and non-smokers had a more negative attitude toward smoking than smokers. It was observed that non-smokers considered smoking more abnormal than smokers. The mean score of total life skills was also higher in non-smokers than in smokers.

According to the results of Binary Logistic Regression, having a smoker family member, having a smoker friend, attitude toward smoking, and normative expectations were significantly associated with smoking status. Having smoker family members and smoker friends increased the risk of smoking by 24 % and 2.28 times, respectively. A negative attitude toward smoking decreased the risk of smoking by 77 %. Besides, considering cigarette smoking as a normal action increased the risk of smoking by 2.17 times, as described in Table 5.

Table 1. Demographic Characteristics of Students

Variables	Modes	Frequency	Percent(%)
Grade	First grade	166	30.2
	Second grade	192	34.9
	Third grade	192	34.9
Custody status	Living with mother and father	512	93.1
	Others	38	6.9
Father's education status	Illiterate	39	7.1
	Reading and writing	99	18
	Under diploma	97	17.6
	Diploma	175	31.8
	Academic education	140	25.5
Mother's education status	Illiterate	59	10.7
	Reading and writing	121	22
	Under diploma	106	19.3
	Diploma	188	34.2
	Academic education	76	13.8
Family members' smoking status	Father	98	17.8
	Mother	3	0.5
	Brother	9	1.6
	Sister	7	1.3
	None	433	78.7
Friends' smoking status	Yes	176	32
	No	374	68
Smoking initiation age	Less than ten years old	21	33.9
	More than ten years old	41	66.1
Habitation status	Urban	466	84.7
	Rural	84	15.3

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Table 2. Mean (SD) of Awareness and Attitude Toward Cigarette Smoking and Life Skills

Variables	Mean	SD
Awareness	82.18	14.19
Attitude	32.6	16.35
Normative expectations	68.04	16.65
Problem-solving skill	56.75	30.18
Compatibility skill	52.21	21.05
Communication skill	55.62	24.76
Assertiveness skill	56.28	29.89
Resistance skill	55.9	28.81
Total life skills score	57.3	13.33

Table 3. The Correlation Between Age, GPA, Awareness, Attitude, and Life Skills

Variables		a*	b	c	d	e	f	g	h
Age	CC**	0.093*	- 0.058	0.154**	0.061	0.019	0.034	0.134**	0.177**
	P	0.03	0.17	< 0.001	0.15	0.66	0.42	< 0.001	< 0.001
GPA	CC	0.08	- 0.04	0.14**	0.09*	0.001	0.07	0.06	0.05
	P	0.54	0.25	< 0.001	0.02	0.88	0.07	0.12	0.21
Awareness	CC		- 0.21**	0.14**	0.01	0.001	- 0.02	0.06	0.01
	P		< 0.001	< 0.001	0.82	0.86	0.59	0.11	0.7
Attitude	CC			- 0.23**	- 0.001	0.001	0.02	- 0.01	- 0.03
	P			< 0.001	0.82	0.97	0.49	0.71	0.46

*a. Awareness b. Attitude c. Normative expectations d. Problem-solving skill e. Compatibility skill f. Communication skill g. Assertiveness skill h. Resistance skill

** *Correlation Coeffecience is significant at the 0.05 level.*

Table 4. Association Between Demographic Variables and Awareness, Attitude and Life Skills

Variables	a	b	c	D	e	F	g	h
Custody status	0.59	0.39	0.35	0.29	0.65	0.16	0.40	0.02*
Father's education	0.22	0.89	0.16	0.04*	0.49	0.08	0.04*	0.001*
Mother's education	0.23	0.87	0.14	0.13	0.30	0.2	0.01*	0.01*
Family members' smoking status	0.02*	0.58	< 0.0001*	0.84	0.57	0.84	0.53	0.69
Grade	0.005*	0.05	0.003*	0.26	0.68	0.43	0.001*	0.001*
Father's job	0.16	0.75	0.53	0.003*	0.2	0.006	0.05	0.007*
Type of school	0.15	0.96	0.006*	0.18	0.89	0.06	0.35	0.17
Friends' smoking status	0.04*	< 0.0001*	< 0.0001*	0.72	0.95	0.8	0.62	0.18
Habitation status	0.08	< 0.0001*	0.21*	0.02	0.13	0.07	0.02	0.02
Cigarette smoking status	0.07	< 0.0001*	< 0.0001*	0.09	0.25	0.44	0.25	0.35

**P-value < 0.05 considered as significant*

a. Awareness b. Attitude c. Normative expectations d. Problem-solving skill e. Compatibility skill f. Communication skill g. Assertiveness skill h. Resistance skill

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Table 5. Binary Logistic Regression Results of Demographic Variables and Smoking Status

Variables	Sig.	Exp (B)	95 % C.I. for EXP(B)	
			Lower	Upper
Age	0.217	0.701	0.399	1.232
Custody status	0.077	1.547	0.953	2.512
Father's education	0.583	0.893	0.594	1.340
Mother's education	0.426	0.850	0.571	1.267
Having a smoking family member	0.022*	1.244	1.031	1.501
Having a smoking friend	0.027*	2.281	1.097	4.743
GPA	0.136	1.161	0.954	1.412
Grade	0.341	0.714	0.357	1.427
Father's job	0.027*	0.496	0.266	0.924
Habitation status	0.688	1.227	0.452	3.335
Awareness	0.606	0.533	0.049	5.824
Attitude	0.0001*	0.235	0.117	0.472
Normative expectations	0.006*	2.174	1.256	3.764
Problem-solving skills	0.609	1.217	0.573	2.584
Comparability skills	0.263	0.714	0.396	1.288
Communication skills	0.649	1.196	0.553	2.583
Assertiveness skills	0.728	0.900	0.499	1.625
Resistance skills	0.414	1.392	0.629	3.082

Discussion

The results of this study showed that awareness of the harmful effects of smoking was negatively associated with attitude and was positively associated with normative expectations. This means that an increase in awareness not only leads to a negative attitude toward smoking but causes smoking to be considered as an abnormal behavior among students. Therefore, it seems that promoting student awareness about the harmful effects of smoking is essential as the first step in smoking prevention programs. Besides, a significant association was found between attitude and normative expectations toward smoking, stating that those who had a greater negative attitude toward smoking were more likely to consider smoking as an abnormal matter. Moreover, the results showed that having a negative attitude toward smoking and considering cigarette smoking as abnormal behavior is effective in smoking prevention. Therefore, as the proceeding steps, appropriate interventions should be made to change students' attitudes toward smoking and to modify the social norms related to smoking. The prominence of this concept can be supported by a study in which Osaki et al. (22) conducted a survey on cigarette smoking among junior and senior high school students in a province in China and throughout Japan (N = 69,402). In their study, the relative risk of cigarette smoking was higher among students who did not think that smoking harms their health. In a similar study conducted by Cowdery et al. (23) on 385 adolescents, positive attitudes towards smoking have been revealed as a risk factor for initiating smoking.

As witnessed in the present research, the mean score of all the life skills was higher than average, but yet far from the ideal status. The lowest scores of life skills were related to compatibility skills. Therefore, designing and implementing training interventions for promoting student smoking-related life skills, especially compatibility skill, are proved to be essential. None of the smoking-related life skills had a statistically significant association with awareness, attitudes, normative expectations, and smoking status In a study by Haen Wikel et al. (24), it was claimed that although life skills training had a marginal effect on smokers and experimental smoking, it had a positive impact on awareness, students' social competencies and also affected their attitude toward smoking. However, life skills training and prevention programs had a positive impact on protective variables toward smoking for a few months but had no impact on cigarette smoking

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prevalence in the short-term. Finally, they concluded that these programs affected cigarette smoking indirectly through an effect on knowledge, social competencies, and other individuals' protective variables. In the same line, Luna et al. (10) suggested that life skills training programs had no immediate effect on smoking prevention and initiating smoking in secondary school students but may be effective in the prevention of an increase in smoking consumption. Similarly, another study claimed that life skills-based prevention programs have a significant impact on mediating variables that directly impact smoking prevention for seven grade students of middle/junior high schools (25). A study by Kaur et al. (26) revealed a positive and significant correlation between effective communication dimensions and problem-solving of life skills with risk-taking behaviors. The leading effective predictions of risk-taking behaviors were the total score of life skills and communication dimension. In the study by Hassanzade et al. (27), life skills training had a significant and positive effect on drug abuse preventive behaviors and promoted drug abuse preventive behaviors. Epstein et al. (28) reported that peer smoking norms, adults smoking norms, drug refusal techniques, assertiveness skills, and positive attitude toward smoking were associated together, and that prevention programs which were based on normative training, resistance, competence enhancement approaches, and parenting skills training can be effective in smoking prevention among rural adolescents. Additionally, some studies showed the positive effects of life skills training on the general and mental health of student and university students (29,30). The differences between the studies result can be due to a number of reasons, including social and cultural norms, the tobacco industry influences as well as prevention activities. Besides, the age of population included and the region in which the study was conducted can be responsible for inconsistencies between the studies.

According to the current results, smoking status and intention to smoking in the future were significantly associated with the smoking status of families and friends. It seems that if students have friends or family members who smoke, they are more likely to initiate smoking and have a stronger tendency to smoke in the future. The results indicate the importance of normative expectation in the prevention of smoking. Hence it appears that students' parents should have sufficient control over their children's choice of friends and teach them to choose friends wisely. Moreover, smoking prevention programs and required education for students whose family members smoke should be regularly and consistently applied to school and society. A study conducted by Osaki et al. (22) and Cowdery et al. (23) reported that the relative risk of cigarette smoking was higher among students who had friends smoking, and having smoker friends was associated with initiating smoking.

Assertiveness and resistance skills had more scores in the higher grades. Besides, higher grades considered smoking as an unusual matter more than lower grades. Therefore, interventions pertaining to promote life skills and modify normative criteria in schools should begin at lower academic grades. Moreover, problem-solving skill, assertiveness skill, resistance skill, and total score of life skills had a higher score in rural residents compared to urban residents. In this study, life skills scores were lower in urban students, although it was expected to be higher.

Consequently, it is suggested that more attention be paid to this issue. Non-smokers had a more negative attitude toward smoking and considered it as an abnormal matter than smokers. Besides, the total score of life skills was higher among non-smokers than smokers. Therefore, it is suggested that life skills training and interventions related to modifying attitudes and normative expectations in smokers be taken regularly and with more intensity, which indicates the importance of attitude, normative expectations, and life skills in the prevention of smoking.

Conclusion

According to the findings of this study awareness of harmful effects of smoking was high in students and most of them had a negative attitude toward smoking and considered smoking

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as an abnormal behavior, but the score of life skills was average and away behind the ideal status. Moreover, awareness, attitude, and normative expectations were not in a favorable situation in younger students and those who had smoker friends and family members. Therefore, it is necessary to begin appropriate interventions to raise students' awareness about the harmful effects of smoking, change attitudes toward smoking, and improve life skills from an early age, especially among those who had smoker friends and family members.

This study has some limitations, however. Given that this was a cross-sectional study, the effect of age, father and mother educational status, habitation status, and smoking status in friends and family members were not controlled. Hence, to more precisely examine the effect of life skills on cigarette smoking status, further studies in a matched case-control design for controlling these variables are suggested in the future.

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Conflict of interests

The authors have declared no conflict of interests.

Authors' contributions

Sahebihagh MH designed research; Jalilian H analyzed data; Azadi A conducted research; and Zolfi M wrote manuscript. Sahebihagh MH had primary responsibility for final content. All authors read and approved the final manuscript.

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