Effects of Self-Efficacy in the Relationship between Environmental Factors, and Adolescent Cigarette Smoking Behavior

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Abstract

This paper examines the relationship between the environmental factors of peer pressure and family smoking (parents' smoking and siblings' smoking), and adolescent cigarette smoking habits in Kerman (as a big province in Iran). In addition, in terms of the afore-mentioned behavior, the moderating role of self-efficacy on the link of peer pressure and family smoking is studied. A quantitative research method was used for this purpose. The sample included 300 adolescents between the ages of 15 and 18 as current smokers. Self-administered questionnaires were used to collect the data which were then analyzed using AMOS Software and running Structural Equation Modeling (SEM).

The results showed positive significant relationship between peer pressure plus family smoking (parents' smoking and siblings' smoking), and adolescent cigarette smoking. The relevant findings and results revealed that self-efficacy has a considerable moderating effect on the relationship between cigarette smoking behavior, and peer pressure and family smoking. The results of the present study can contribute to the literature and have significant implications for practitioners and policy makers to prevent adolescents in Iran from developing smoking habits.

Keywords: cigarette smoking behavior, family smoking, peer pressure, self-efficacy, adolescent

1. Introduction

Cigarette consumption is recognized as a significant public health problem throughout the world (Dhalewadikar, 2014; Reisi et al., 2014). Cigarette smoking is associated with numerous negative effects and is a major contributor to the death of people as a result of chronic illnesses (Ramezankhani et al., 2010; Center for Prevention and Disease Control, 2006). Cigarette smoking is widely considered as a risk factor for the development of lung cancer and other chronic diseases (such as cardiovascular and respiratory diseases), which are related to higher mortality rates (Hsin-Chieh, 2010). Based on the reports from World Health Organization (WHO), almost 5.4 million people die each year as a result of cigarette smoking. It is expected that this figure will increase to 10 million by the year 2025 (WHO, 2011). According to WHO (2011), cigarette smoking is the sixth leading cause of death worldwide. If this trend continues, the mortality rate related to cigarette smoking will rise to 8-10 million people by the year 2030. According to WHO statistics, more than one billion people are addicted to different kinds of cigarette, which has approximately increased tenfold compared with the 20th century (WHO, 2011).

Cigarette smoking almost always starts during adolescence (Poorasl et al., 2011; Redonnet et al., 2012). Cigarettes smoking can directly affect physical, emotional, spiritual, and social wellbeing, as well as the development of individuals (Sally, 2009; Mee, 2009). Hence, as suggested by Steinberg (2010) and Johnston et al. (2013), if teenagers can be prevented from starting to smoke during their high school years, they will probably never start smoking. In adolescence, cigarette smoking is the first step to addiction and those who smoke regularly stand a higher risk of addiction to other drugs (Poorasl et al., 2011; Ramezankhani et al., 2010).

Smoking has been described by WHO (2011) as an epidemic in most of the emerging countries. According to

American Cancer Society (2006), approximately 80 percent of the 1.3 billion smokers throughout the world live in developing countries. It is estimated that death rates attributed to cigarette use will double in developing countries between the years 2002-2030 (Nakhaee et al., 2011; Poorasl et al., 2011). Based on the prognosis of the WHO, in 2015, cigarettes will cause 50 percent more deaths than the HIV/AIDS virus, and 10 percent of deaths in the world will somewhat contribute to cigarette smoking (Nakhaee et al., 2011).

Iran has 15 million adolescents, and therefore is considered as having one of the youngest populations in the world. A great number of studies showed increasing tendencies of smoking among Iranian adolescents (Poorasl et al., 2011; Karimy et al., 2012). According to the statistics from WHO (2009), the frequency of adolescents' smoking in Iran is 26.9%. Nearly 71% of the smokers in Iran have been reported to have their first smoking experience during their adolescence (Nazemi, 2011).

The present study took Kerman, which is one of the biggest provinces in Iran, as the target location of the study. Previous findings have reported that the prevalence of cigarette smoking among the male and female adolescents in Kerman is 39.9% and 25.5%, respectively (Nakhaee et al., 2011). Due to the high level of adolescent cigarette smoking in Kerman, leading to a critical condition, the researcher felt a need for conducting research in this area.

Hence, this research was designed to study the environmental factors of peer pressure and family smoking (parents' smoking and siblings' smoking) in relation to adolescent cigarette smoking habits. Also, the present study investigated the moderating impacts of self-efficacy on the link between environmental factors and adolescent cigarette smoking.

In the context of Iran and especially the province of Kerman, very few studies have explored the direct relationship between cigarette smoking behavior among adolescents and peer pressure and family smoking. Also, based on the results of some relevant studies (e.g. Arpawong et al., 2010; Hartman, 2006), there is a direct relationship between peer pressure and family smoking with self-efficacy. On the other hand, according to Hiemstra et al. (2011) and Lotrean et al. (2009), there exists a direct relationship between self-efficacy and cigarette smoking behavior among adolescents. But no research has so far examined the moderating effects of self-efficacy on the process of peer pressure and family smoking (as independent variables) and cigarette smoking behavior among adolescents (as dependent variable). This was the gap that the current study sought to fill.

2. Literature Review

2.1 Family Smoking and Cigarette Smoking Behavior

Family is the first place where a person grows up and his/her patterns of behaviors and beliefs are shaped. Family, the fundamental social unit of society, can be expected to exert influential impacts on the development of behavior problems such as adolescents' cigarette smoking (Gilman et al., 2009; Rouholamini, 2002). According to National Institute for Health and Welfare (2012), the first exposure of adolescents to smoking can often be sought in the context of their families. Adolescents are more likely to smoke if they socialize with others who are smokers (Akers et al., 2004; Bandura, 1986). Parents' smoking history may be an important predictor of adolescent smoking (Blokland et al., 2004; Otten et al., 2007). Evidence shows that family smoking (parental and sibling smoking) have been strongly associated with smoking among adolescent and they supports the suggestion that family cigarette smoking increases the likelihood of cigarette smoking behavior among adolescents (Baheiraei, 2013; Gilman et al., 2009; Huang et al., 2013; Khuder et al., 2008; National Institute for Health and Welfare, 2012; Otten et al., 2007).

2.2 Peer Pressure and Cigarette Smoking Behavior

In addition to the significant role of family smoking, peer pressure has also a particular effect on adolescents' cigarette smoking behavior. As stated by Santor et al. (2000), peer pressure is defined as urging and encouraging the individuals to join in the activities of the same age group. In other words, peer pressure is the influence exerted by a peer group, encouraging individuals to change their behaviors in order to conform to group norms (Santor et al., 2000). As a result of peer pressure, adolescents demonstrate many unwanted and negative behaviors, one of which is cigarette smoking. Hence, the smoking behavior of the existing members of the same age group provides enough reasons for the new adolescent members to start smoking (Ho et al., 2012; Huang et al., 2013). Each individual might believe that this is an effective way to be accepted by the group and to present himself as a grown-up. At the same time, it is documented that the main reasons of youngsters for starting smoking are the encouragement of friends, adapting to the group, and imitating others (Kiran-Esen, 2003; Huang et al., 2013; Nizami et al., 2011). Moreover, as declared by Ho et al. (2012) and Baheiraei et al. (2013), the smoking behavior of parents, brothers/sisters, and peers is an important risk factor for smoking behavior. On the

whole, the results of a large number of studies indicate that peer pressure is usually a major factor to start smoking and continue this behavior (Khuder et al., 2008; Skinner & Haggerty, 2009; Baheiraei et al., 2013; Ho et al., 2012; Huang et al., 2013; Nizami et al., 2011; Uslu, 2013). Hence, environmental factors play a crucial role in adolescents' smoking behavior through increasing the likelihood of their potential addiction to smoking.

2.3 Self-efficacy and Cigarette Smoking Behavior

Self-efficacy refers to individuals' beliefs in their ability to affect the outcome of a situation through their actions (Bandura, 1997). Self-efficacy includes both feeling confident in one's skills and feeling able to implement these skills as they are needed (Bandura, 1997). According to Hiemstra et al. (2011) and Yan et al. (2013), the effect of self-efficacy on behavior is documented to be pervasive and is well known to influence problem behaviors. Self-efficacy is one of the important cognitive factors that is linked to cigarette smoking behavior in the teenage years and also refers to adolescents' confidence in their ability to stay a nonsmoker and to refuse a cigarette (Hiemstra et al., 2011; Yan et al., 2013). A number of findings have demonstrated that there is a direct negative relationship between self-efficacy and cigarette smoking (Hiemstra et al., 2011; Lotrean et al., 2009; Sterling et al., 2007; Yan et al., 2013).

Self-efficacy is identified as the single most significant predictor of initiation, frequency and quantity of cigarette smoking behavior (Kear, 2002; Dian et al., 2005). It is also introduced by Yan et al. (2013) as an important factor in preventing smoking behavior among adolescents: i.e. higher level of self-efficacy results in lower rates of smoking and lower level of self-efficacy increases rates of smoking behavior. Hence, the existence of direct negative relationship between self-efficacy and cigarette smoking is shown in a number of studies in the literature on self-efficacy (Hiemstra et al., 2011; Lotrean et al., 2009; Sterling et al., 2007; Yan et al., 2013). Despite these findings, only few studies have examined whether higher self-efficacy acts as a moderator to change the effect of influencing factors on cigarette smoking behavior. Even though a great deal has been learned about the prediction of adolescent smoking by the influence of a lot of factors, not enough attention has so far been paid to how these constructs may interact with moderator variables.

3. Methodology

3.1 Sample Procedure and Sample Profile

This study focuses on 15 to 18 year-old students in high schools in Kerman; Kerman is divided into two educational zones (Ministry of Education, 2012). Using cluster sampling technique would provide a chance for the researcher to collect data equally from each zone. Totally, there are 105 high schools in Kerman (with a total number of 24,310 students). Out of these schools 46 are located in zone one, and the remaining 59 high schools are located in zone two. In cluster sampling, normally 10 percent of the whole population in each cluster is randomly selected. In the present study, 20 percent of the total number of schools; that is, 10 schools from zone one and 12 schools from zone two, randomly selected for data collection. The reason was that the number of current adolescent smokers who volunteered to respond to the questionnaires was low.

In addition, to calculate the sample size, G*Power (Version 3.1) was used. The software is a well-established instrument used in determining the suitable sample size (Faul et al., 2007). In this study regression would be used as the data analysis method; therefore, having selected it as the statistical analysis method, and setting the values of effect size (R^2 = .1, medium to large), power (.95) and level of significance (α = .05), the ideal sample size calculated by the software was n = 270. Predicting a respondent attrition rate of 10%, 30 additional samples were added to the calculated sample size by G*Power, which resulted in a sample size of 300.

Moreover, the sampling method used for the selection of respondents (current cigarette smokers) was random sampling. Considering the inclusion criteria, a total of 475 students from the selected schools of both educational zones were identified as the population of this study. Each member of this population was assigned a number. Subsequently, out of these smoking adolescents, the researcher randomly selected a sample of 300 using the Random Number Generator (www.random.org). The gender ratio of the respondents of the study was 65 percent male and 35 percent female.

The data collected by means of self-administered questionnaires and then analyzed by AMOS software (to run Structural Equation Modeling) for windows program version 20. The Amos software, which was applied in this study was a new method of analysis testing provided by (IBM).

3.2 Instrumentation

Self-Efficacy Scale: An 8-item instrument derived from Etter's smoking self-efficacy instrument (2000) was adapted for measuring this construct. Responses were scored on a 5-point Likert scale which ranged from "not sure" (1) to "absolutely sure" (5). An internal consistency reliability value of .82 was also obtained for

Self-efficacy Scale in this study.

Cigarette Smoking Behavior Scale: For the purpose of measuring the cigarette smoking behavior, a questionnaire adapted from the National High School questionnaire and according to the Centers for Prevention and Disease Control (2006) was used. This research tool was a 5-item questionnaire, which was developed to rate the cigarette smoking behavior on a Likert scale with 7 points ("1=0 days to 7=all 30 days" and "1=less than one cigarette per day to 7= More than 20 cigarettes per day"). Smoked 10-30 days in the past 30 and smoked less than five cigarettes each day means light current smoker. 'Smoked 10-30 days in the past 30' and 'smoked five or more cigarettes each day' means heavy current 'smoker and smoked 1-9 days in the past 30' means occasional current smoker. An internal consistency reliability value of 0.77 was also gained for the Cigarette Smoking Behavior Scale in this study.

Peer Pressure Scale: Peer pressure was measured by the Peer Pressure Inventory as stated in Santor et al. (2000). The students were supposed to rate the eleven original subscale items and decide on the extent to which the items applied to themselves on a 5-point Likert Scale in the range of 1-5, from (1) strongly disagree to (5) strongly agree. The findings of the test of internal reliability of this survey questionnaire were found 0.85.

Family Smoking Scale: As indicated in previous research by Morrison (2011), Otten et al. (2007), Mohammadpoor et al. (2007), and Selya et al. (2012), parental smoking status was determined going through the responses to the questions, "Do your parents smoke?" Respondents were given the following options: 1: None of them, 2= Both of them, 3= Father only, 4= Mother only and 5= I don't know. In addition, as researchers Mohammadpoor et al. (2007), Rajan et al. (2003) and Gibbs (2005) showed, for measuring the siblings' smoking, the respondents were asked "Do any of your brothers or sisters have ever smoked cigarette?". Respondents were given the following options; 1: None of them, 2: all of them 3: brother(s), 4: sister(s), 5: I don't Know. Participants who responded "I don't know" were not included in the analysis. At the same time, the estimated reliability value for the internal consistency of this scale in the present study was .80, which is a high level of reliability (Hair et al., 2006).

3.3 Validity of the Instruments

Basically, the instrument that was employed in this research had been validated by its developer (Santor et al., 2000; Etter et al., 2000; Morrison, 2011; Centers for Prevention and Disease Control; 2006; Rajan et al., 2003). However, in order to account for the validity of the instruments even further, three Iranians experts in the area checked it. Then, the questionnaire was used in the pilot test, when all the three experts expressed their satisfaction with the questionnaire.

3.4 Pilot Study

Two high schools in Kerman were randomly selected for pilot study (one school from zone one and one schools from zone two). The questionnaires were pretested to 30 adolescent current smokers; this was equal to 10 percent of the sample size. Then, the data were analyzed and the Cronbach's alpha coefficient of reliability was derived. Each construct of the instrument was assessed for its reliability separately. According to Garson (2009), the dimensions should have a Cronbach alpha of at least .70 to establish reliability of constructs. The results of pilot study in this research showed reliability coefficients of .80 for family smoking scale and .85 for peer pressure scale as the environmental factors. Also, a coefficient of .82 was observed for self-efficacy scale. In addition, results showed the reliability coefficient of .77 for cigarette smoking behavior scale. According to Hair et al. (2006), these can all be interpreted as high levels of reliability. After the pilot study, the main data collection could be conducted more confidently.

4. Results

4.1 Descriptive Statistics

The demographic characteristics and key variables are described in this section.

4.1.1 Demographic Analyses

The descriptive analyses of the respondents' demographic background such as age, gender, level of education, monthly pocket money are presented in Table 1. The results of the study showed that the age-range of reported teenage smokers was 15 to 18 years, with a mean of 16.5 years. It was also observed that more than half of the participants of the study (53%) were in the age-range of 17-18 years. Regarding gender, 65% of the adolescents were male and 35% were female. In terms of education, the largest part of the subjects in this study belonged to the third grade; that comprised 26.7% of the whole subjects. Also, Table 1 illustrates that the majority of the respondents (66.3%) received (0-130 thousand Tomans equal to $40) as their monthly allowance.

Table 1. Frequencies and percentages of respondents' demographic background

Variables	Number (N=300)	Percentage (%)
Age (n=300)		
15 years	69	23.0
16 years	72	24.0
17 years	80	26.7
18 years	79	26.3
Mean=16.5		
Level of Education		
First grade	69	23.0
Second grade	72	24.0
Third grade	80	26.7
Pre-university	79	26.3
Gender		
Male	195	65.0
Female	105	35.0
Monthly Pocket Money (Thousand Toman)		
< 130	199	66.3
> 130	101	33.7

4.1.2 Key Study Variables

The key study variables are described in Table 2.

As table 2 shows, the majority of the respondents (54.3%) reported their mother and father smoke cigarette (both of them). 31% of the respondent reported just one of them (mother or father) smokes a cigarette. The remaining respondents (14.7%) reported that none of the parents are smokers. Also, the majority of the respondents (44.3%) reported their sibling smoke cigarette (all of them). 39.3% of the respondent reported just one of them or more (brother(s) or sister(s)) smokes cigarettes. The remaining respondents (16.3%) reported that none of siblings smokes. In addition, the majority of the respondents (63.7%) showed a high level of perceived peer pressure and 27.3% of the respondents' showed a moderate level of perceived peer pressure and the remaining respondents (9%) were attributed to a low level of perceived peer pressure.

Moreover, In order to test the moderating effects of self-efficacy it was necessary to recode and categorized this variable in two levels including low and high self-efficacy respondents. As Table 2 displayed, majority of the respondents (62.3%) showed a low level of self-efficacy and (37.7%) of the respondents' showed a high level of self-efficacy. Regarding to cigarette smoking behavior, the majority of the respondents (51%) were heavy current smoker, 27% were light current smoker and 22% were occasional current smoker.

Table 2. The frequencies and percentages of the levels of key variables

Variables	Number N=300	Percentage (%)
Family Smoking (Parent smoking) None of them	44	14.7
One of them	93	31
Both of them	163	54.3
(Sibling smoking)		
None of them	49	16.3
One of them or More	118	39.3
All of them	133	44.3
Peer Pressure		
Low (1-2.33)	27	9
Moderate (2.34-3.66)	82	27.3

Variables	Number N=300	Percentage (%)
High (3.67-5)	191	63.7
Self-efficacy		
Low (1-2.33)	187	62.3
High (3.67-5)	113	37.7
Cigarette smoking behavior		
Occasional smoker	66	22
Light smoker	81	27
Heavy smoker	153	51

4.2 Inferential Statistics

The inferential statistics utilized in this study were the Structural Equation Model and the advance technique of multi-group Structural Equation Modeling analysis by AMOS software. The direct structural model employed to approach the objectives and test the hypothesized path relationships between the variables based on the conceptual research framework. In order to test the moderating effect of self-efficacy of this study on the path relation between the variable the advance technique of multi-group Structural Equation Modeling analysis was employed.

4.2.1 The Results of Inferential Statistics through Structural Equation Modeling (SEM)

Before initiating the Structural Equation Modelling (SEM), it deemed necessary to verify the research constructs individually with regard to their convergent validity and model fit.

The model fit should be assessed through Goodness-Of-Fit (GOF) indices. GOFs are criteria to look at the coincidences of the covariance matrix of planned model with the sample covariance matrix (Kline, 2010). The commonly used GOF indices and their cut-off point are reported in Table 3. The GOF indices are categorized in three groups including Absolute Fit Measures, Incremental Fit Measurement, and Parsimonious Fit Measures. To confirm a model fit, three to four indices should meet the cut-off point in which one should be from among the absolute indices and one from among the incremental indices (Hair et al., 2006).

Moreover, to assess the convergent validity, which is the amount of variance shared by the items to measure a latent variable, the researcher looked through three indicators based on the ideas of Hair et al. (2006), including Standardize Factor Loading (with cut-off point of greater than .5), Average Variance Extracted (with cut-off point of greater than .5), and Construct Reliability (with cut-off point of greater than .7. Furthermore the value of .8 shows a good and .9 shows a very good level of construct reliability).

Table 3. Fit indices

Goodness-of-Fit Measure	Acceptable Fit Levels
Absolute Fit Measures	
Chi-square statistic, χ^2 (df , ρ)	$\rho > .05$ (at $\alpha = .05$ level)
Goodness-of-Fit Index (GFI)	Values closer to .90 and above indicate satisfactory fit
Root Mean Square Error of Approximation (RMSEA)	RMSEA<.08
Incremental Fit Measurement	
Tucker-Lewis Index (TLI)	Values closer to .90 and above indicate satisfactory fit
Normed Fit Index (NFI)	Values closer to .90 and above indicate satisfactory fit
Comparative Fit Index(CFI)	Values closer to .90 and above indicate satisfactory fit
Parsimonious Fit Measures	
Normed Chi-square (χ^2 /df)	$1.0 < \chi^2 /df < 3.0$
Akaike Information Criterion (AIC)	Model with lowest AIC is preferred

Source: Byrne (2010); Hair et al. (2006, 2010); Kline (2011); Schumacker & Lomax (2010).

Peer Pressure Confirmatory Factor Analysis:

The peer pressure was measured using seven items. The Confirmatory Factor Analysis for this construct was determined, and in the initial attempt, the findings of goodness of fit indices confirmed that the model fitted the data. In fact, using the scales with standard items enabled the researcher to get a good fit and there was no need for any modification. The goodness of fit indexes that supports the fitting model of this construct included: CFI = .986, Relative $\chi2$ = 2.832, GFI = .964, IFI = .986, RMSEA =. 078, TLI = .979. Thus, the portrayed model, as shown in Figure 1, indicated a good fit. Additionally, Chi-Square was significant $\chi2$ (14) = 39.645, p = .000 and did not meet the required value. However, it was not a point of concern as the other indices met the criteria and not meeting the required value was due to the large sample size.

In addition, Table 4 presents the indicators of construct validity including construct reliability, average variance extracted, and standardized factor loading. The standardized factor loading of peer pressure construct showed that the values were ranging from .811 to .883 in which all items surpassed the cut-off point of 0.5. The normal variation obtained for the construct of peer pressure was also met as the value of .723 exceeded the cut-off point of .5. Also, the calculated value of construct reliability for peer pressure construct was .95 that again exceeded the cut-off point of .7 and showed a good level of reliability. In sum, the peer pressure construct convergent validity was satisfied as all three related indicators met the cut-off point value.
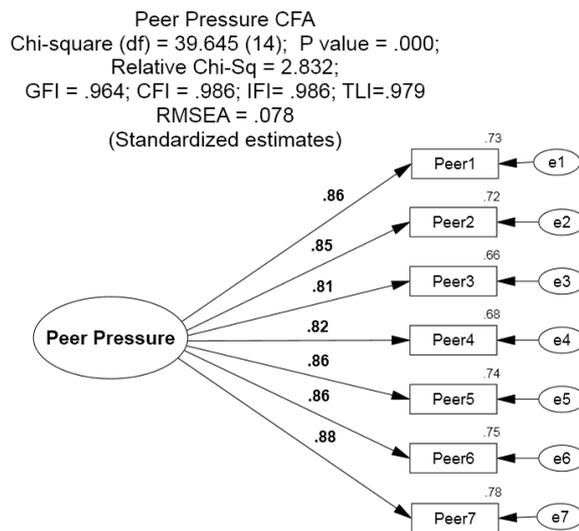
Figure 1. Peer pressure confirmatory factor analysis model

Table 4. Peer pressure confirmatory factor analysis results

Variable	Items	Standardized loading	Factor	Construct (CR)	Reliability	Average Variance Extracted (AVE)
Peer Pressure	P(1)	.856				
	P(2)	.851				
	P(3)	.811				
	P(4)	.823		.95		.723
	P(5)	.862				
	P(6)	.863				
	P(7)	.883				

Self-Efficacy Confirmatory Factor Analysis:

Evaluating the model fitness with the self-efficacy construct resulted in the support for the idea of fitness of the model with the data, which was consistent with the goodness of fit indexes in the following values, as shown in Figure 2: GFI = .954, CFI = .973, Relative Chi-Sq= 2.772; IFI = .973, RMSEA = .077 (P value = .000, chi-square (df = 55.440(20)), TLI = .963. As a result, goodness of fit indexes were found to provide support for a

good model fit. As for the convergent validity, the standardized factor loading for self-efficacy ranged between .697 and .853, all of which exceeded the cut-off point of .5 and fell in the acceptable range. The normal variance obtained for self-efficacy was a satisfying value of .57, which exceeded the essential value of .5. At the same time, the reliability score for self-efficacy was .91 which was acceptable and exceeds the acceptable value of .7, as shown in Table 5. Therefore, in this study the items measuring self-efficacy were valid and reliable.

Smoking Self-Efficacy CFA
Chi-square (df) = 55.440 (20); P value = .000;
Relative Chi-Sq = 2.772;
GFI = .954; CFI = .973; IFI= .973; TLI=.963
RMSEA = .077
(Standardized estimates)
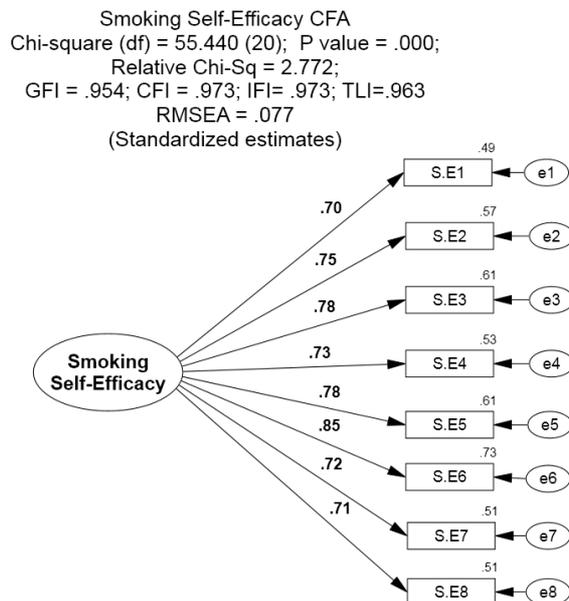
Figure 2. Confirmatory factor analysis model for self-efficacy

Table 5. Confirmatory factor analysis results for self-efficacy

Variable	Items	Standardized loading	Factor Average (AVE)	Variance Extracted	Construct (CR)	Reliability
Self.Efficacy	S(1)	.697				
	S(2)	.752				
	S(3)	.780				
	S(4)	.726	.57		.91	
	S(5)	.779				
	S(6)	.853				
	S(7)	.717				
	S(8)	.711				

Family Smoking:

The family smoking (parents' and siblings' smoking) was measured as dummy variables. In fact, in SEM analysis, independent and dependent variables should not be categorical data. Therefore, in order to solve this limitation for two variables of family smoking and siblings smoking, the researcher decided to serve these variables as dummy/dichotomy variable (Zero and One). In order to define the dummy variable, the "none of them" category (recoded as Zero) along with two other categories of "one of them" and "both of them" (recoded as One) were used.

4.3 The Structural Equation Model

The assessment of hypothesized testing yielded the following result:

H_{A1}: There is a positive relationship between family smoking (parents' smoking and siblings' smoking) and adolescent cigarette smoking.

Table 6 presents the results that indicate the significant positive connection between the cigarette smoking

behavior of adolescents and family smoking (parents' smoking (β = .201, C.R= 5.029, P= .000) as well as siblings' smoking (β = .076, C.R= 2.215, P= .027)). Thus, the hypothesis was supported on the path relation between family smoking (including parents' smoking and siblings' smoking) with adolescent cigarette smoking. It showed that family smoking was the key contributor to raise the risk of adolescent cigarette smoking.

H$_{A2}$: There is a positive relationship between peer pressure and adolescent cigarette smoking.

The findings also indicated a positive major link between peer pressure (β = .222, C.R= 4.596, P= .000) and cigarette smoking behavior, as shown in Table 6. Thus, the relationship between peer pressure and adolescent cigarette smoking was supported. So, it was concluded that a high level of peer pressure can raise the risk of adolescent smoking behavior.
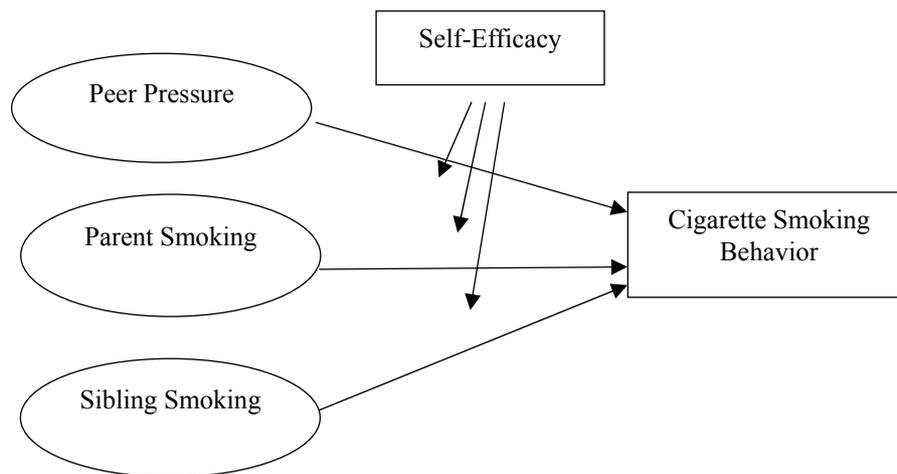
Figure 3. Research framework

Table 6. The results of path coefficients between variables

Items			Estimate	S.E.	Std. Regression	C.R.	P
Parents' smoking	→	Adolescent Cigarette Smoking	1.349	.268	.201	5.029	.000
Siblings' smoking	→	Adolescent Cigarette Smoking	.482	.218	.076	2.215	.027
Peer pressure	→	Adolescent Cigarette Smoking	.689	.150	.222	4.596	.000

4.4 Test of the Moderation

For examining the moderating impact of self-efficacy on the connections among variables, the innovative system of Multi-group SEM analysis was used by means of AMOS Software.

H$_{A3}$: Self-efficacy moderates the correlation between peer pressure and adolescent cigarette smoking.

The result supported the impact of self-efficacy on the connection between peer pressure and adolescent cigarette smoking, since the relationships between these variables for participants with low levels of self-efficacy were significant (peer pressure: β = .211, P= .000, C.R= 4.063). However, regarding the participants with higher levels of self-efficacy, there was not any significant relationship (peer pressure: β = .138, P= .146, C.R= 1.453). As a result, and based on the analyzed data shown in Tables 7 and 8, the casual relationships between the cigarette smoking behavior, and the peer pressure of the respondents under the influence of self-efficacy was supported in the present research.

H$_{A4}$: Self-efficacy moderates the correlation between family smoking (parents' smoking and siblings' smoking) and adolescent cigarette smoking.

Based on the results of this study, self-efficacy was found to act as a moderator in the relationship between the family smoking (including; parents' smoking and siblings' smoking) and adolescent cigarette smoking, because a significant difference was documented in the relationships between adolescent cigarette smoking behavior and family smoking of the study participants with low self-efficacy (parents' smoking: β = .280, P= .000, C.R= 5.630; siblings' smoking: β = .112, P= .005, C.R= 2.784); however, this correlation value for the respondents with high self-efficacy was not significant (parents' smoking: β = .163, P= .060, C.R= 1.879,; siblings' smoking: β = .025, P= .73C.R=.333). Hence, as shown in Tables 7 and 8, the casual relationship between the adolescent cigarette

smoking behavior and family smoking (parents' smoking and siblings' smoking) of the participants under the influence of self-efficacy is maintained in this study.

Table 7. The results of regression weights for participants in low levels of self-efficacy

Items			C.R.	Std. Regression	S.E.	Estimate	P
Parents' smoking	→	Adolescent Cigarette Smoking	5.630	.280	.391	2.199	.000
Siblings' smoking	→	Adolescent Cigarette Smoking	2.784	.112	.274	.762	.005
Peer pressure	→	Adolescent Cigarette Smoking	4.063	.211	.146	.595	.000

Table 8. The results of regression weights for participants in high levels of self-efficacy

Items			C.R.	Std. Regression	S.E.	Estimate	P
Parents' smoking	→	Adolescent Cigarette Smoking	1.879	.163	.422	.793	.060
Siblings' smoking	→	Adolescent Cigarette Smoking	.333	.025	.366	.122	.739
Peer pressure	→	Adolescent Cigarette Smoking	1.453	.138	.324	.470	.146

5. Discussion

Based on the findings and results of the current study, the variables of family smoking (parents' smoking and siblings' smoking) and peer pressure had a positive significant effect on the adolescent cigarette smoking habits. These findings support the social cognitive theory of Bandura (1986) based on which, an adolescent learns to smoke cigarettes in small and informal groups, and he/she is also more likely to smoke in case he/she is associated with the other smokers. Theoretically, family is important for adolescent to exhibit smoking behavior because it is the initial assembly for a person where attitudes and behaviors are learned (Bandura, 1986). In the present study, it was observed that parents or siblings acted as role models for adolescents, and typically the adolescents tended to imitate the habits and behavior of their parents and siblings. Hence, the adolescents were influenced to become smokers later in life because they had witnessed their parents or siblings smoke. They considered whatever they observed in the family as acceptable and normal behavior, so they initiated the smoking behavior (Bandura, 1986). For this reason, the adolescents who had at least one smoking parent or sibling had greater potentials to become smokers as compared to those who had no parent or sibling. Also, in some adolescents' point of view, smoking was an act of maturity; therefore, they were prone to initiate this behavior to show that they had actually entered adulthood (Milton et al., 2008).

Thus, it is concluded that family cigarette smoking increases the likelihood of cigarette smoking among adolescents. In addition, peer groups, as the small groups structured by the friends in similar ages and sharing the same interests (Kircler et al., 1993), well served the adolescents' needs and potentially controlled them through peer pressure. As a result of this pressure, which was found to contribute to adolescent smoking behaviors, the adolescents acquired and demonstrated unwanted behaviors. Therefore, peer pressure had a significant influence on cigarette smoking behavior among the adolescents in this research.

So, peer pressure and family smoking (including; parents' smoking and siblings' smoking) had a crucial role in the adolescents' smoking habit and could increase the likelihood of the development of an addiction to cigarette smoking.

Moreover, the present study investigated the role of self-efficacy as a moderator on the connection between peer pressure and family smoking and adolescent cigarette smoking. The findings also indicating the moderating effect of self-efficacy on the connections among these variables, revealed the significance of self-efficacy with respect to the level of cigarette smoking. Theoretically, self-efficacy has a pervasive effect on behavior and can influence problematic behaviors (Bandura, 1986). In addition, according to Hiemstra et al. (2011), high level of self-efficacy can help to control negative behaviors such as smoking. Considering the impact of self-efficacy as a moderator in the connection between environment, cognition, and cigarette smoking habit, it could be said that a higher degree of self-efficacy predicts a lower probability of developing a smoking habit, even when the adolescent is in a highly stressful and risky environment.

6. Conclusions and Implications

The results of the present study showed that peer pressure and family smoking can influence adolescent cigarette smoking, and self-efficacy as a moderator can control these relationships. Hence, it deems necessary to provide the kind of programs in which these factors are addressed.

Based on the results of the study, it is recommended that the devised strategies for intervention programs of smoking prevention and cessation be focused on increasing the adolescents' self-efficacy and resistance against smoking leading to a decrease in their smoking behavior.

One other recommendation of the study is that families should be included in smoking prevention programs and be trained for further parenting skills. This kind of training can provide actual help for parents to monitor their adolescents' behavior, improve the family communication, and be prepared for critical situations. As children reach puberty, appropriate parental involvement and supervision can be crucially important in preventing smoking during adolescence. Besides, programs should encourage the parents to be actively involved and intervene to influence their adolescents' smoking behavior, even if they themselves are smokers. Parents should be educated to practice constant long-term anti-smoking strategies. They should develop and improve their parental confidence and ability to control their adolescents' smoking behavior.

In addition to family, the schools where teenagers study play a significant role in controlling and reducing their problematic behaviors such as smoking. Adolescents spend about a third of their wake up time in schools, and much of the peer pressure related to smoking takes place in this environment. Note that the majority of smokers start smoking before leaving high school. So, it is recommended that school prevention programs put an especial emphasis on adolescents' social and academic skills (good decision-making skills, coping skills, self-control, and refusal skills to resist smoking).

Moreover, educators should provide programs to teach adolescents how to behave in smoking groups. Having acquired these skills, adolescents may further develop and adapt proper methods for risky situations. In addition, to prevent and decrease smoking behavior among adolescents in schools, they should generate an anti-smoking environment. These programs should not only focus on one aspect of smoking, like health problems, but should also thematize the social influences, acceptability, and disadvantages of smoking, along with the negative social consequences and problems faced by smokers. This approach will cause the school students to develop negative attitudes towards smoking and discourage them from considering smoking in general. Additionally, to prevent cigarette smoking, families and other family members (siblings) should be involved in school prevention programs, which could increase family discussions about smoking, control the mechanisms at home and even encourage adult smokers to quit smoking. Considering the fact that a great number of adolescents are already smokers, prevention programs should devise strategies to assist young smokers to quit. In fact, 61% of high school smokers want to quit smoking but only 6% of them are able to stop for a month or longer. Therefore, school programs can provide students with information on how to quit and link up with community prevention programs or invite program representatives to schools.

At the same time, policy makers can also decrease smoking behaviors through public education. It is recommended that proper policies need to be used to provide a powerful supplement to the existing efforts to decrease the smoking behavior among adolescents. It was then documented that the prevalence of smoking in communities with integrated prevention programs was significantly lower than in communities without these programs.

In their long-standing efforts to decrease smoking rates among adolescents, policy makers are expected to organize anti-smoking campaigns via the media such as newspapers, television, billboards, publications with materials for public education, and Internet. At the same time, certain training programs need to be held to develop students' skills and offer consultation on site. Leaflets and flyers could also be helpful to let students gain a better knowledge about the threats of smoking. Furthermore, policy makers are recommended to develop and offer specific programs to raise the public awareness on the threat to the health of the teenage community, and pass laws to limit cigarette smoking by adolescents through banning cigarette smoking in public places. Nevertheless, education, as a much more influential tool than obligation, plays an undeniable role in the attempt to reduce the rate of smoking among youngsters. The more effectiveness of education is because of the rebellious nature of the adolescents causing them to react adversely while being prescribed under the direct obligation of quitting smoking, while they easily accept the mild and indirect instruction provided for them in an educational context.

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