

Role of Self-Efficacy and Sensation-Seeking in Predicting Adolescents' Tendency towards Risk-Taking Behaviors (Case Study: high school second-grade students in the fifth region of Tehran)

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Article history:

Received date: 1 September 2017

Review date: 24 November 2017

Accepted date: 28 December 2017

Printed on line: 2 March 2018

Keywords:

self-efficacy and sensation seeking in predicting adolescents' tendency towards risk-taking behaviors

Abstract

Purpose: The present study was aimed to predict adolescents' tendency towards risk-taking behaviors based on self-efficacy and sensation seeking. **Methodology:** Research method was descriptive-correlational. The statistical population of the present study consisted of high school second-grade students in the fifth region off Tehran. From the schools of this region, two schools were randomly selected; and from each school, 60 students were randomly selected and examined. Hence, totally 120 individuals were chosen as a sample group. The tools used in this study included Scherer's et al (1982) general self-efficacy questionnaire and Zukerman's (1996) sensation seeking scale as well as Ahmadabadi and Mohammadzadeh's (2011) risk taking scale. According to the level of data analysis and statistical hypotheses, multifold linear regression was used in order to test hypotheses. **Findings:** The results of the statistical analysis showed that factors such as excitability and adventure as well as seeking experience were significantly correlated with risk-taking behaviors in a 5% level. **Discussion:** The positivity of these coefficients, in fact, indicates that with an increase in these factors, there will be an increase in risk-taking behaviors. In addition, self-efficacy was negatively and significantly correlated with risk-taking behaviors.

Please cite this article as: Sourani, R. (2018). Role of Self-Efficacy and Sensation-Seeking in Predicting Adolescents' Tendency towards Risk-Taking Behaviors (Case Study: high school second-grade students in the fifth region of Tehran), *Iranian journal of educational Sociology*, 1(8), 86-94.

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1. Introduction

Adolescence is a complex period in life, which is a time of questioning, curiosity, and risk-taking. Personal, biological, and psychological experiences result in extensive changes in this period. And within these changes, individuals discover new different emotional and behavioral stimuli for their adulthood (Solmeyer, McHale, Crouter, 2014). Most theorists believe that adolescence is a very sensitive critical period which can be negatively affected by risk factors in a way that their mental health, social health, and emotional health get hurt (Defoe et al, 2015). In adolescence, conflicts reach their peak; and adolescents have experienced groups of risk-taking behaviors such as drug abuse, alcohol abuse, smoking, and unsafe sexual activities (Baumgartner, Altenburg, Peter, 2010).

Today, risk-taking behaviors are referred to as behaviors that put the health and wellbeing of adolescents, youths, and other people at risk (Irwin and Millstein, 2009). Risk-taking behaviors include violence, physical fights with others, smoking, alcohol abuse, drug abuse, addiction to exhilarant drugs, and risk-taking sexual behaviors (Mello et al, 2017).

2. literature Review

One of the factors related to adolescents' doing risk-taking behaviors is self-efficacy (Valois, Zullig, Revels, 2017). Every human has their own inferences about their abilities; and based on the inferences, they take action in order to confront problems and obstacles in life. All people possess belief systems which construct their world and give meaning to their experiences. Belief system in humans, on the one hand, leads to health, satisfaction with life, happiness, and quality. And on the other hand, it seems to result in many problems and issues that people experience, which is closely associated with their beliefs about them and their abilities. Self-efficacy is a belief system which plays a basic role in life quality and keeps balance between different dimensions of life (Bahadori and Hashemi Nosrat Abadi, 2012).

Within years, numerous psychological theories have tried to express how people behave. Social cognitive theory is also one of the theories. Self-efficacy which is considered as the core of this theory has a great impact on humans' actions and their way of approaching issues. Self-efficacy has not been defined and evaluated as a personality trait, but it is individuals' beliefs about their abilities to do skills and achieve goals in particular conditions, i.e. it is their judgment about their eligibility. In 1986, Bandura believed that self-efficacy beliefs in individuals are influenced by different factors, and that they do not grow only through convincing and encouraging them (Bandura, 1986). In addition, in the framework of the self-efficacy theory, Bandura (1997) stated that people with strong beliefs about their abilities, compared to those who doubt their abilities, make more efforts to do their assignments; and as a result, their performance is much better. In their studies, Asqari, Sadeqi, Ghasemi Jobaneh, and Dargahi (2015) found that adolescents' self-efficacy was significantly correlated with risk-taking behaviors. In their study, Jalali and Ahadi (2015) showed that there was a significant relationship between adolescents' self-efficacy and their drug abuse. The results obtained from studies conducted by Sajadpoor, Mehrabi, Hosseinalizadeh, and Abdolmohammadi (2013) indicated that there was a significant relationship between adolescents' social efficacy and the tendency towards risk-taking behaviors. The results obtained from a study done by Abbasi and Azari (2010) showed that the personality trait of self-efficacy in students predicts risk-taking behaviors.

One of the factors influencing the tendency towards risk-taking behaviors is individuals' psychological characteristics (Moore et al, 2017). Studies connected to this field have focused on sensation seeking. Sensation seeking is one of the most important factors which affect individuals' tendency towards risk-taking behaviors. Sensation seeking has been defined as a need for new, complex, various experiences and sensations, as well as a tendency towards taking social and physical risks in order to experience (Zukerman, 2007). Arnett (1994) defined sensation seeking as a negative trait which comprises seeking excitement, as well as new, complex, intense, different experiences, and a tendency towards physical, social, illegal, and financial risks. Sensation seekers are adventurous and extroverted individuals; they get tired of loss of diversity and then feel bored and restless, leading them to seek new, diverse, and exciting experiences. These individuals have more diverse sexual behavior and experience. They take more interest in sports such as free falling, jumping from heights, mountain climbing, motor races, parachuting, flying, and car races (Martin-Storey and Crosnoe, 2014).

There are two attitudes in connection to the question whether behavior is optional or obligatory: 1) one attitude believes that humans have control over their behavior in a line of forward moves, enabling them to control the environment; 2) the other attitude is the attitude of behaviorism which emphasizes external factors and environmental obligation. In the theory of self-determination which was devised by Deci and Ryan, individuals' conscious behavior is divided into two groups of behavior: independent behavior and controlled behavior. In independent behavior, individuals act based on their recognitions; however, in controlled behavior, people act affected by other factors. In other words, behaviors are mostly influenced by internal or external motives (Deci and Ryan, 2007).

According to Getzels' social-theoretical pattern, social behavior is not only a function of norm-based expectations, but it is also a function of certain tendencies; these two might not be overlapped. Based on these attitudes, psychological features such as sensation seeking can affect behavior. Studies show that sensation seeking is significantly correlated with drug abuse (Thornton et al, 2017), alcohol abuse (Drane, Modecki, Barber, 2014), abnormal sexual activity (Goedel et al, 2017), and impulsivity (Bouchard, 2009). A study done by Mohseni et al (2017) indicated that there was a significant relationship between adolescents' sensation seeking and risk-taking behaviors. The results obtained from a study done by Jebraeeli, Moradi, and Habibi (2017) showed that disruptions in emotion adjustment were significantly correlated with multifold abuse forms such as drugs, alcohol, and cigars.

The results of a study conducted by Jamali, Madani, and Gholamali Lavasani (2016) indicated that the components of sensation seeking (disinhibition and seeking experience) were negatively correlated with addiction. The results of a study done by Mehrabi, Mahmudi, and Molavi (2016) showed that sensation seeking has an impact on the tendency towards risk-taking behaviors. With a review of the above-mentioned, it can be stated that personal psychological factors such as self-efficacy and sensation seeking play a role in adolescents' tendency towards risk-taking behaviors. However, not many studies have at the same time focused on the effect of self-efficacy and sensation seeking on the tendency towards risk-taking behaviors; and in this area, there is lack of research. Therefore, the present paper was aimed to answer the question, "Do self-efficacy and sensation seeking affect the tendency towards risk-taking behaviors?"

3. Methodology

This research was practical in terms of objective; it was descriptive-correlational in terms of data collection method. The statistical population of the present study consisted of high school second-grade students in Tehran's region 5. In order to evenly distribute the sample, in this region, two schools were selected for data collection (schools: Nikan and Vahdat-e-Islami); and from each school, 60 students were randomly selected and examined. Hence, finally, 120 students were selected as a sample group. Considering data analysis method based on Pearson Correlation and regression analysis, to estimate sample size, conventional contracts were used for a favorable sample size. From the research population, 120 students were selected. Delavar (2005) recommended a 100-person sample size for correlation studies.

Data collection tools in the present research included Scherer's et al (1982) general self-efficacy questionnaire, Zukerman's (1996) sensation seeking scale, as well as Mohammadzadeh and Ahmadabadi 's (2011) risk-taking scale. In this research, Scherer's et al (1982) self-efficacy questionnaire was used, because this test measured self-efficacy, did not have certain conditions for implementation, its implementation for different age groups was allowed, it was a proper tool among available tools connected to self-efficacy, and it was used by many researchers.

In the study which was done by Scherer's et al (1982) for devising the test, 376 psychology students were asked to complete a self-efficacy questionnaire and personality multi-size questionnaire. Respondents had to determine the level of their agreement with each self-efficacy test by determining one of the choices (Keramati, 2001). The test had 17 items which measured general self-efficacy; and the 17 items had a mean value of 57.99 and a standard deviation of 12.08. Each item received scores ranging from 1 to 5. Barati (1997) used a split-half method in order to calculate the reliability of the test. Using Gutman's split-half method, the reliability of the test was calculated to be 0.76. Cronbach's alpha was 0.79, which is favorable. In his study, Keramati (2001) calculated Cronbach's alpha to be 0.85. In addition, Alinia (2003) calculated Cronbach's alpha to be 0.78, which is acceptable. In order to measure construct validity of the self-efficacy scale, Scherer et al (1982) determined the correlation between the scores of the scale, using the sizes of several personality features. These personality sizes comprise Rotter's scale of internal-external control, social capability degree scale (Marlowe-Crowne, 1964), alienation scale (Baron, 1953), and interpersonal competency scale (Rosenberg, 1965). Based on the conducted studies, there was a fairly positive correlation between Marlowe-Crowne's social capability degree scale and self-efficacy scale. In addition, the scores of the alienation scale and the interpersonal competency scale were fairly positively correlated with the scores of self-efficacy. Predicted correlations between general self-efficacy and the sizes of personality traits were medium, and they were used in order to approve construct validity of the test. In a study for calculating construct validity of the test, Barati (1997) did the test together with another test called self-esteem scale for a group of 100 individuals, and reported the correlation to be 0.6, and showed that it was significant in a 0.05 level. The reason why researcher used a self-esteem scale was that Scherer et al (1982) introduced it as one of the variables correlated with self-efficacy.

The fifth format of this questionnaire was used by Zukerman (1996) for measuring a favorable level of stimulation and motivation. In examining the validity of the construct in connection to the fifth format of the scale which was done by Zukerman, the scale measured 4 subsidiary factors: excitability and adventure (items 3, 11, 16, 17, 20, 21, 23, 28, 38, and 40), seeking experience (items 4, 6, 9, 10, 14, 18, 19, 22, 26,

37), and disinhibition (items 1, 12, 13, 25, 29, 30, 32, 33, 35, 36), as well as variety-seeking or sensitivity to loss of diversity (items 2, 5, 7, 8, 15, 24, 27, 31, 34, 39); for each factor, 10 items were considered. The questionnaire had 40 items, and the highest score for each person was 40. The higher the score of the respondent, the more they seek sensation. In Iran, the fifth format of this scale was normalized by Mahvi Yarazi. Ekhtiari et al reported Cronbach's alpha to be 0.76; and in the study done by Azami et al, the reliability of the scale was calculated to be 0.83.

This questionnaire was devised by Mohammadizadeh and Ahmadabadi (2011) for the purpose of measuring risk-taking in Iranian adolescents. 38 items were considered for measuring risk-taking behaviors such as risk-taking driving (6 items), violence (5 items), smoking (5 items), drug abuse (8 items), alcohol abuse (6 items), and relationship with sexual behavior (8 items). Respondents announced their agreement or disagreement with these questions based on a 5-point Likert scale (from "I totally disagree = 1 to "I totally agree = 5). The validity of this scale was evaluated using an internal consistency method, with the help of Cronbach's alpha as well as construct validity, using an exploratory factor analysis and by analyzing the main components in Zadehmohammadi's et al (2011) study. Cronbach's alpha was 0.93 for the general scale, and 0.71 to 0.93 for the dimensions of the questionnaire. The results obtained from the validity and reliability of the scale indicated that it is an appropriate tool for measuring Iranian adolescents' risk-taking.

4. Findings

In this research, based on research literature, sensation seeking has 4 dimensions whose relationship with self-efficacy and risk-taking behaviors has been examined. The descriptive findings of research scales have been given in table 1.

Table 1. Descriptive findings of research sub-scales

Statistical Index	Number	Mean	Standard Deviation
Excitability and adventure	120	5.78	1.31
Seeking experience	120	6.10	1.11
Disinhibition	120	5.86	1.10
variety-seeking	120	5.90	1.06
Self-efficacy	120	55.91	15.15
Risk-taking behaviors	120	91.70	15.59

When using the statistical method, first, using a Smirnov-Kolmogorov statistical test, the normality of data was tested and approved. Another regression hypothesis is loss of a co-linear effect between independent variables. Variance tolerance indexes and variance inflation check these hypotheses. In the present research, all figures show that there is not an intense co-linear effect between predictor variables. Another regression hypothesis was error independence; and the hypothesis that there is a correlation between errors must be rejected. In order to check this hypothesis, we can use "Durbin-Watson" statistics. To approve of this hypothesis, the value of this statistic should be between 1.5 and 2.5. In this research, this statistic was 1.75, which indicates that the pre-hypothesis is correct.

The first test was a general model test. In fact, if at least one of the predictor variables of the research has a significant impact on criterion variables, researcher model is approved. Null hypothesis and alternative hypothesis are as follows:

$$\begin{cases} H_0 : \beta_1 = \beta_2 = \dots = \beta_5 = 0 \\ H_1 : \beta_i \neq 0 \quad \forall \text{ one } i \text{ for } i = 1, 2, 3, 4, 5 \end{cases}$$

Table 2. Regression results of factors such as sensation seeking and self-efficacy on risk-taking behaviors

Model	Sum of Squares	Degree of freedom	Mean of Squares	F	R	R ²	R ² _{adj}	sig
Regression	10085.76	5	2017.15	12.21	0.59	0.34	0.32	0.001
Residual	18839.03	114	165.25					
Total	28924.80	119						

As it can be seen in the table, value of sig is smaller than 0.05, indicating that model regression is significant, i.e. at least one of the predictor variables affects criterion variable. R² (multifold beta coefficient): This index determines that some of the changes in criterion variable are expressed by predictor variables; in other words, predictor variables only have a small percentage of the fitting of dependent variable. In this research, R² equals 0.34, meaning that factors such sensation seeking and self-efficacy have 34 percent of the ability to predict risk-taking behaviors, and the other 66 percent is related to other factors.

R²_{adj} (corrected beta coefficient): this index is able to predict dependent variable by predictor variables in the society; in fact, with a little adjustment, it generalizes the sample to the whole society. The value of this coefficient was 0.32 in the present research. In other words, sensation seeking and self-efficacy had the ability to predict risk-taking behaviors by 32 percent. Considering the significance of the whole model, now, we must determine which coefficient is not zero; in other words, which variable or variables have a significant impact on the model. Hence, a "t" test was used.

Table 3. Standard coefficients, non-standard coefficients, and "t" statistics of variables entering regression equation

Predictor variable	Regression Coefficients			sig	significance
	Non-standardized	Standardized	"t" statistics		
Constant	131.29		10.95	0.001	0.05
Excitability and adventure	5.20	0.44	5.55	0.001	0.05
Seeking experience	2.72	0.19	2.43	0.017	0.05
Disinhibition	0.61	0.04	0.55	0.58	0.05
variety-seeking	0.36	0.03	0.31	0.75	0.05
Self-efficacy	-0.22	-0.21	-2.73	0.007	0.05

As the results in table 3 show, factors such as excitability, adventure, and seeking experience have a significant relationship with risk-taking behaviors in a 5% level. And the positivity of these coefficients in fact indicates that with an increase in these factors, the level of risk-taking behaviors increases. In addition, self-efficacy has a negative significant relationship with risk-taking behaviors.

5. Discussion

The results of data analysis showed that factors such as excitability, adventure, and seeking experience have a negative significant relationship with risk-taking behaviors in a 5% level. According to Thornton et al (2017), it seems that students' sensation seeking, on the one hand, increases their risk-taking for joy, in a way that they do risk-taking actions in order to enjoy themselves and avoid loss of variety; on the other hand, they evaluate the risks and negative consequences of tendency towards such behaviors to be less than a real level.

The results of the research refer to the fact that it is favorable to consider biological, mental, and social approaches in the examination of risk-taking behaviors. Based on this pattern, in each area, the factors which empower and sustain risk-taking behaviors are identified, and the factors of risk-taking behaviors are considered. In the field of biology, we can refer to the role of genetic factors and hormonal changes in puberty. In the field of psychology, low error understanding, external control focus, high seeking experience, variety-seeking, high negative emotions, and high sensation seeking have been considered (Goedel et al, 2017).

In sum, it seems that sensation seeking is a need for new, different, and complex feelings and experiences; and individuals with such a behavior are ready to take risky social or physical actions in order to gain such experiences. Consistent with this finding of the present research, a study done by Mohseni et al (2017) showed that there was a significant relationship between adolescents' sensation seeking and risk-taking behaviors. The results of a study done by Jabraeeli, Moradi, and Habibi (2017) showed that disruptions in emotion adjustment were significantly correlated with consumption and multifold consumption of drugs, alcohol, and cigars. The results of Jamali, Madani, and Gholamali Lavasani's (2016) study indicated that sensation seeking components also (disinhibition and seeking experience) had a negative relationship with addiction. The results of a study done by Mehrabi, Mahmudi, and Molavi (2016) showed that sensation seeking played a role in students' tendency towards risk-taking behaviors.

In addition, research results showed that self-efficacy had a negative significant relationship with risk-taking behaviors. This finding can be expressed in the framework of Bandura's (1997) self-efficacy theory. Based on this, individuals with strong beliefs about their abilities, compared to individuals who have doubts about their abilities, make more efforts to actively do their assignments. As a result, they are more responsible when doing assignments. Consistent with the present study, Asqari, Sadqi, Ghasemi Jobaneh, and Dargahi (2015) showed that students' self-efficacy was significantly related to their risk-taking behaviors. In their study, Jalali and Ahadi (2015) indicated that there was a significant relationship between adolescents' self-efficacy and drug abuse. The results of a study done by Sajjadpoor, Mehrabi, Hosseinalizadeh, and Abdolmohammadi (2013) showed that there was a significant relationship between adolescents' social self-efficacy and tendency towards risk-taking behaviors. The results of a study done by Abbasi and Azari (2010) showed that self-efficacy in students predicts their risk-taking behaviors.

The present research examined the relationship between sensation seeking and self-efficacy with risk-taking behaviors, and showed that individual-level variables of sensation seeking and self-efficacy affect risk-taking behaviors. However, the level of expressed variance was 34 percent. This shows that their factors in a different level like family, school, and society level affect this variable. It is necessary to identify and examine them in future studies. Additionally, considering the complexity of the tendency towards risk-taking behaviors, using qualitative studies, the effect of sensation seeking and self-efficacy on students' risk-taking behaviors was examined. Furthermore, the present research sample consisted of Tehran's high school second-grade students. Therefore, the generalization of findings to students of other courses or cities is constrained; and it is necessary to repeat studies connected to the generalizability of findings.

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