



Nicotine dependency and its relationship with emotional intelligence among male smoker employees

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Abstract

Smoking is one of the most common causes of mortality in the world. Emotional intelligence is the adaptation ability of adapting to the environment and people and responding them appropriately. It plays an important role in various aspects of life such as facing stressful situations and consequently, consuming cigarette. The aim of this study was to investigate the relationship between nicotine dependency and emotional intelligence among male smokers. This study was conducted on 350 male smokers working at Urmia university of medical sciences. The study tools were cyberia shrink emotional intelligence questionnaires and Fagerstrom's nicotine dependence test. The mean scores of nicotine dependency and emotional intelligence were 3.33 ± 2.31 (scores ranged from 0 to 10), and 110.26 ± 16.24 (scores ranged from 33 to 165), respectively. Overall, the results showed that there was a significant reverse relationship between emotional intelligence and its dimensions with nicotine dependency. Individuals with higher emotional intelligence had lower degree of nicotine dependency. Therefore, emotional intelligence acts as a guard against harmful behaviors such as smoking. Nicotine dependency can be reduced by teaching emotional intelligence skills.

Keywords: Emotional Intelligence, Employee, Nicotine Dependence

Introduction

Cigarette smoking is one of the biggest health threats which has mortal and disabling effects on health. It has a major role in the development of diseases such as cancers, cardiovascular diseases and other chronic diseases [1,2] and is one of the most important preventable causes of disability and premature death [3,4]. The World Health Organization estimates that if the current

cigarette smoking trend continues, the annual deaths from tobacco-related diseases will rise from 5 million in 2000 to 10 million in 2020 [5]. Tobacco addiction is a chronic condition which by itself has been the leading cause of early mortality in nearly half a million people in the United States. So far, It has been the most common preventable cause of mortality

worldwide [5,6]. Cigarette is the dominant form of tobacco and is important due to its nicotine dependency. Generally, "dependence is a set of cognitive, behavioral, and physiological symptoms that makes a person with an abusive disorder, while aware of its adverse consequences, continue consuming it". In fact, the person smokes for relaxation or pleasure due to the reduction of nicotine or getting accustomed to smoking. Nicotine dependency features include compulsive usage, resistance increase to its effects, and the development of a quit-based syndrome during sudden cessation [7,8].

Many factors, including social factors, play an important role in smoking, however, these factors may be due to psychological processes. One of the psychological factors that can play a role in cigarette smoking is emotional intelligence [9,10]. Emotional intelligence is a set of abilities (verbal and non-verbal) that enables a person to produce, recognize, express, appreciate and evaluate his/her feelings and those of others. It helps individuals in thinking and taking action in adaptation to the environmental demands and pressures, and is considered as one of the most important predictors of success in life [11-13].

Those with less emotional intelligence have less perception of their feelings regarding smoke, thus, they are less capable to express negative responses to cigarettes. However, those with high emotional intelligence are able to refuse cigarette because they have clearly perceived their emotions regarding smoke. The more they have perception, the more they have self-confidence in responding negatively to smoke and prevent harming to a social situation [13].

Emotional intelligence is a way by which people adapt themselves to life's challenges and control their emotions more effectively to get succeed in life. Besides, emotional intelligence is a set of acquisitive skills that can be upgraded during time with increasing age and raising experience. Therefore, teaching emotional intelligence skills, in thought and practice, along with successful adaptation to the demands and environmental pressures, can strengthen individuals and reduce the incidence of high-

risk behaviors such as smoking and nicotine dependency [14-18].

Trinidad et al., studied the protective association of emotional intelligence with psychosocial smoking risk factors on 416 students in Los Angeles in 2004. Their results showed that emotional intelligence was a protective factor against cigarette smoking. Particularly, people with high emotional intelligence scores, have a higher perception of negative behaviors such as smoking. However, people with low emotional intelligence, prefer to smoke in order to cope with negative emotions [10].

A study on 740 students of Jiroft universities, in South of Iran, showed that emotional intelligence and smoking had a negative and inverse relationship. In fact, higher scores in the emotional intelligence questionnaire were associated with lower levels of smoking and intention to smoke, because people with high emotional intelligence were able to deal with difficulties and solve the problems [9].

Considering the smoking prevalence in the west Azarbaijan province (its prevalence in the country was 11% and in Azarbaijan Gharbi was 14%) and higher smoking rate among men in this province compared with other provinces [19], this study aimed to investigate the status of emotional intelligence and its impact on nicotine dependency in Urmia, especially among the employees of Urmia university of medical sciences.

Regarding the prevalence of smoking and its complications, as well as the role of emotional intelligence in the using cigarettes and nicotine dependency, this study was conducted to measure the nicotine dependency among male smoker employees in Urmia and its relationship with their emotional intelligence. This research was conducted at Urmia University of Medical Sciences.

Method

This study was an analytical research on 350 male smokers among employees population of Urmia university of medical sciences selected by purposive and accessible sampling method in 2016.

In order to identify and access the smoker employees, all units were searched whether there were any smokers observed in those offices or not (if the smokers were not at their work on that time, the questionnaires were delivered to their colleagues). In the next stage, the research objectives were explained and the participants were asked to participate in the research, if they tended to do so. The participants were assured that the information would remain confidential and they could leave the study at any stage of the research.

In order to achieve the study goals, the demographic characteristics questionnaire, the Fagerstrom's Test for Nicotine Dependence (FTND), and the Cyberia Shrink standard questionnaire for emotional intelligence were used.

Fagerstrom's Test for Nicotine Dependence (FTND): This test is widely used to measure the level of nicotine dependency. This was a short scale with 6 options ranging from 0 to 10. The low level of dependency score was between 0 and 3, the moderate level was between 4 and 6, and the high level was between 7 and 10 [20-22]. The Cronbach's alpha was estimated to be 0.85 in previous studies. Other researches have reported it as $r=0.90$ and $r=0.94$ [20-22]. Azizi et al., based on a research on 118 participants, calculated the Cronbach's alpha as 0.83 [23].

Cyberia Shrink emotional intelligence questionnaire: This questionnaire consists of 33 questions [24]. It is designed to assess five areas of emotional intelligence including self-motivation, self-awareness, self-control, empathy, and social skills. This questionnaire is based on 5-option Likert scale [25,26]. The scores of this questionnaire ranges from 33 to 165. This questionnaire was translated and standardized by Mansouri in Iran [27]. The reliability of this test using Cronbach's Alpha is reported more than 80%. The validity of this questionnaire has also been examined in the form of concurrent validity and construct validity through the internal consistency and convergent/ divergent factor analysis [27]. The reliability of this questionnaire was calculated by double-summing and Cronbach's alpha,

and the coefficients were 0.94% and 0.81% respectively [24].

In order to collect data, after receiving the ethical certificate and making coordination with the head of each department, male smoker employees were identified and selected by purposive and accessible sampling method.

The collected data was analyzed by SPSS 16 software. Descriptive statistics (frequency, percentage, mean, standard deviation, minimum and maximum) was used to describe the data and independent T-Test and ANOVA was used to compare the means. Besides, to determine the relationship between emotional intelligence and nicotine dependency the Pearson's correlation test was used. The significance level in this study was $p<0.05$.

First the ethical certificate was received by research team. Then the coordination with the head of each department was made. The participants were provided with necessary explanations and were ensured that their information would remain confidential. Besides, they were informed that they could leave the study at any stage of the research. This research was approved by the Vice-Chancellor for Research and Technology of Tabriz university of medical sciences with the ethical code number of IR.TBZMED.REC.1395.695.

Results

A total of 350 male smokers participated in this study and demographic characteristics of the participants are listed in Table 1 and 2.

Findings indicate that the mean and standard deviation of emotional intelligence score among male smoker employees of Urmia university of medical sciences is 110.26 ± 16.24 . Besides, self-awareness had the highest mean (29.32 ± 4.69), while social skills had the lowest mean among the dimensions of emotional intelligence (19.82 ± 3.83). The nicotine dependency had also the mean and standard deviation of 3.33 ± 2.31 . Based on Pearson's correlation test, there was a significant reverse correlation between emotional intelligence scores and nicotine

dependency ($r=-0.316$, $p<0.001$, $n=350$). Also, there was a significant difference between the scores of emotional intelligence dimensions

and nicotine dependency (Table 3). The statistical analysis of demographic variables is presented in Table 1 and 2.

Table 1 *The descriptive and test statistics of nicotine dependency and emotional intelligence scores by demographic characteristics*

Variable		Frequency (percentage)	Mean and standard deviation of nicotine dependence	Sig.*	Mean and standard deviation of emotional intelligence	Sig.*
Age	Less than 30 years	70(22.0)	2.46 $\pm$ 3.50	$p=0.835$ $F=0.287$	15.85 $\pm$ 110.01	$p=0.929$ $F=0.151$
	Between 30-40 years	145(41.4)	2.28 $\pm$ 3.21		15.25 $\pm$ 110.37	
	Between 41-50 years	90(25.7)	2.27 $\pm$ 3.38		18.33 $\pm$ 109.35	
	More than 50 years	38(10.9)	2.31 $\pm$ 3.34		15.94 $\pm$ 110.42	
Marital status	Married	304(86.9)	2.32 $\pm$ 3.39	$p=0.472$ $F=0.753$	16.24 $\pm$ 110.13	$p=0.684$ $F=0.380$
	Single	44(12.6)	2.27 $\pm$ 2.97		16.31 $\pm$ 110.65	
	Divorced	2(0.5)	0.70 $\pm$ 2.50		21.21 $\pm$ 120.00	
Number of children	Without any children	77(22.0)	2.26 $\pm$ 3.01	$p=0.064$ $F=2.104$	16.76 $\pm$ 111.77	$p=0.164$ $F=1.583$
	One child	94(26.8)	2.46 $\pm$ 3.45		15.16 $\pm$ 109.93	
	Two children	135(38.6)	2.18 $\pm$ 3.33		15.73 $\pm$ 109.45	
	Three children	31(8.9)	2.04 $\pm$ 3.58		18.34 $\pm$ 111.87	
	Four children	12(3.4)	2.99 $\pm$ 3.33		19.10 $\pm$ 111.33	
	Five children	1(0.3)	10.00		69.00	
Education	Less than high school diploma	53(15.1)	2.35 $\pm$ 4.01	$p=0.111$ $F=1.891$	17.36 $\pm$ 109.39	$p=0.566$ $F=0.738$
	High school diploma	96(27.4)	2.49 $\pm$ 3.44		16.06 $\pm$ 108.30	
	Associate degree	63(18.0)	2.08 $\pm$ 3.30		15.40 $\pm$ 111.87	
	Bachelor	113(32.3)	2.22 $\pm$ 3.01		16.53 $\pm$ 111.58	
	Master degree and more	25(7.2)	2.36 $\pm$ 3.00		15.55 $\pm$ 109.56	
Duration of smoking	Between 1-10 years	132(37.7)	2.26 $\pm$ 3.00	$p=0.183$ $F=1.628$	14.56 $\pm$ 111.32	$p=0.251$ $F=1.373$
	Between 10-20 years	119(34.1)	2.29 $\pm$ 3.46		14.64 $\pm$ 110.44	
	Between 20-30 years	67(19.1)	2.26 $\pm$ 3.53		14.18 $\pm$ 110.40	
	More than 30 years	32(9.1)	2.62 $\pm$ 3.81		23.59 $\pm$ 104.87	
Age of smoking start	Under 18 years	122(34.8)	2.58 $\pm$ 3.89	$p<0.001$ $F=8.006$	17.99 $\pm$ 109.66	$p=0.562$ $F=0.578$
	Between 18-28 years	192(54.9)	2.16 $\pm$ 3.18		15.36 $\pm$ 110.13	
	More than 28 years	36(10.3)	1.61 $\pm$ 2.27		14.64 $\pm$ 112.94	
Daily cigarette consumption	Under 10 cigarettes	167(47.7)	1.7 $\pm$ 1 2.10	$p<0.001$ $F=57.158$	14.24 $\pm$ 113.18	$p<0.001$ $F=9.949$
	Between 10-20 cigarettes	151(43.1)	2.03 $\pm$ 4.06		15.07 $\pm$ 109.88	
	Between 20-30 cigarettes	21(6.0)	2.30 $\pm$ 6.00		19.35 $\pm$ 96.14	
	More than 30 cigarettes	11(3.2)	1.97 $\pm$ 6.90		25.04 $\pm$ 97.90	
Weekly cigarette consumption	Under 70 cigarettes	165(47.1)	1.66 $\pm$ 2.06	$p<0.001$ $F=64.571$	13.90 $\pm$ 113.52	$p<0.001$ $F=6.724$
	Between 70-140 cigarettes	57(16.3)	1.81 $\pm$ 3.28		13.51 $\pm$ 110.12	
	Between 140-210 cigarettes	16(33.2)	2.12 $\pm$ 4.79		18.30 $\pm$ 107.06	
	More than 210 cigarettes	12(3.4)	2.08 $\pm$ 7.00		24.34 $\pm$ 96.91	

*ANOVA Test

Table 2 The descriptive and test statistics of nicotine dependency and emotional Intelligence scores for the variable of smoking status

Variable		Frequency (percentage)	Mean and standard deviation of nicotine dependence	Sig. (T-Test)	Mean and standard deviation of emotional intelligence	Sig. (T-Test)
Smoking status	Smoking	309(88.3)	2.32±3.39	p=0.202	16.28±109.77	p=0.129
	Quitted	41(11.7)	2.23±2.90	F=1.635	15.68±113.87	F=2.312

Table 3 Distribution of mean scores of emotional intelligence dimensions based on the severity of nicotine dependency

Emotional intelligence	Nicotine dependence	Mean and standard deviation	ANOVA test statistics	p-value
Self-motivation	Low dependence	23.0±3.27	10.36	<0.001
	Moderate dependence	22.15±3.72		
	High dependence	20.39±3.66		
Self-awareness	Low dependence	30.01±4.39	8.21	<0.001
	Moderate dependence	29.04±4.46		
	High dependence	26.93±5.71		
Self-control	Low dependence	22.16±4.28	7.34	<0.001
	Moderate dependence	21.23±5.07		
	High dependence	19.23±4.83		
Empathy	Low dependence	20.53±3.65	8.65	<0.001
	Moderate dependence	19.20±3.98		
	High dependence	18.27±3.57		
Social skills	Low dependence	18.0±3.40	12.59	<0.001
	Moderate dependence	16.64±3.90		
	High dependence	15.13±4.25		

Discussion

Male smoker employees of Urmia university of medical sciences had a low cigarette nicotine dependency. Since there is no baseline for the emotional intelligence score, high levels of emotional intelligence scores is investigated in different studies. Considering the mean score of emotional intelligence in the present study, it can be concluded that higher emotional intelligence is associated with a mild dependency on cigarette smoking. Due to the reverse relationship between the scores of nicotine dependency and emotional intelligence, with the increase of emotional intelligence score, the degree of dependency on smoking is reduced. It means that the higher the intelligence skills are, the lower the level of nicotine dependency is. This is consistent with the findings of previous studies. The results of various studies show a significant difference between the scores of emotional

intelligence in smokers and non-smokers. Trinidad et al. also confirmed that people with low emotional intelligence do not perceive the negative social consequences of smoking [10]. The Kun study also supports this theory that low levels of emotional intelligence lead to smoking and nicotine dependency [15].

The present study shows that there is a significant reverse relationship between emotional intelligence and nicotine dependency. Therefore, with the increase of the emotional intelligence, the nicotine dependency decreases. In other words, if the score of the emotional intelligence test is high; there is less dependence on nicotine. This findings is consistent with the previous studies.

Ghasempour and et al showed that there was a significant difference between the scores of emotional intelligence in smokers and

non-smokers. Considering that smoking is the consequence of not having the ability to control emotions and is used as a strategy to reduce tensions; improving emotional intelligence skills, especially self-control, can hinder individuals from smoking [28].

According to study findings, there was also a significant relationship between the scores of different dimensions of emotional intelligence and the level of nicotine dependency. Low self-control is one of the important factors which affects smoking. People with low self-control probably less think about the consequences of their behaviors and get more dependent on tobacco [29]. However, people with high level of self-control are more aware of their feelings and less likely engaged in antisocial behavior. The more individuals have self-awareness or perception of their feelings, the greater they have self-confidence and therefore, the less they are likely to participate in high-risk behaviors, including cigarette smoking and nicotine dependency, when facing stressful situations [13].

Because of ethical considerations, only male smokers were included in this study. Due to the heavy workload of employees and the high number of questions (several research questionnaires), the employees were less willing to participate in the study. To control these limitations, they were asked to complete the questionnaires at their leisure time, and they were given adequate time to fill out the questionnaire. Employees were also assured that their information would remain confidential.

Conclusion

Emotional intelligence as an acquisitive skill, can be reinforced through training. It is a kind of ability that helps individuals to effectively use their emotional intelligence skills in solving the problems and adapting to the environment. Besides, it assists people facing tensions and stress. On the other hand, training courses will improve the emotional intelligence skills to control the use of addictive substances, including cigarettes. Considering the study variables relationships, it can be concluded that

people with high emotional intelligence are less dependent on cigarette smoking.

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Authors' contributions

Study design: ShYT, MHS, AHN

Data collection and analysis: ShYT, MAJ

Manuscript preparation: ShYT, HJ

All authors have read and approved the final version.

Conflict of Interests

"The authors declare that they have no competing interests."

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Availability of data and materials

The datasets used and/or analyzed during this study are available from the corresponding author on reasonable request.

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