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The Effect of Health Education based on Health Belief Model on Preventive Actions of Synthetic Drugs Dependence in Male Students of Kerman, Iran

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ABSTRACT

Background: Drug dependence among adolescents and youths is one of the biggest concerns in today's societies. Drug addiction is a serious threat to society. This study was conducted to determine the effect of health education based on Health Belief Model (HBM) on preventive actions of synthetic drugs dependence among students.

Methods: This quasi-experimental study used pre- and post-method and was conducted on 100 students of the second and third grade in Kerman who were selected randomly. The data collection tool was a questionnaire designed based on HBM, awareness and preventive actions of synthetic drug dependence. Before the educational intervention, the questionnaire was completed by both groups, and then the educational intervention was conducted for the intervention group in the form of 2 training sessions for one and a half hour. Later, 2 months after educational intervention, information was analyzed again for both groups. Results were analyzed through Paired t-test, Independent t-test, Chi-square and Pearson correlation.

Results: Findings of the research showed that there is a significant difference between the average scores related to HBM structures (sensitivity, severity, perceived benefits and barriers, cues to action and self-efficacy) in intervention and control groups about the preventive behaviors of drug dependency before and after educational intervention. In addition, the intervention group had better performance in preventive behaviors than the control group 2 months after the end of the training program. In other words, the value of performance increased significantly from 14 to 16.84, 2 months after the educational intervention (P-value < 0.05). Furthermore, a direct and significant correlation was observed between the awareness, structures of the model (except for perceived barriers), and preventive behaviors (P-value < 0.001).

Conclusion: Findings indicated that by increase of HBM components' average scores, the average score of synthetic drug dependence preventive actions increased too. Therefore, results of the research confirm the effect and efficiency of HBM in making preventive actions of drug dependence.

Keywords: Health Education, Health Belief Model, Drug Dependence, Students

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Introduction

Drug dependence among adolescents and youths is one of the biggest concerns of today's societies. Drug addiction is a serious threat to the cultural, health, social, and economic structures and destroys balance, growth, and development in societies. It also wastes many human, economic, and social resources. Due to the vicinity of the main production areas of these materials, Iranian people have been exposed to increasing and serious dangers. Despite all the efforts made in this regard, there are problems such as addiction prevalence, health problems, increasing distribution volume of drugs, as well as economic and social issues related to drugs. Drug abuse is so complicated in all aspects and fields that have drawn attention of many people. Undoubtedly, adolescents and youths are the most involved groups in this crisis.[1]

Statistics released from international organizations, especially the WHO, the International Narcotics Control Committee (INCC), and UNESCO indicate a progressive increase in drug abuse across the world. The only difference between countries is in their consumption patterns. It is obvious that development of the trend ruins cultural, social, and economic bases of a society and eventually destroys it. Nowadays, this problem is so important that no country can consider itself fully immunized. All evaluated resources invariably show that the problem's dimensions are catastrophic.[2] Currently, there has been some statistics indicating considerable increase of drug use among adolescents and youths. Drug abuse in many people starts from high school age, so one of the most important solutions to prevent from this problem in adulthood is its control in adolescents. Majority of people in contact with adolescents think that this group take refuge in drug as a reaction against repeated exposures to inappropriate situations, such as feeling of insecurity, pressure, psychological distress, humiliation, rejection, and alienation, conflict with parents with daily problems. Large numbers of vulnerable adolescents think that can use drugs only recreationally or to achieve experience but soon they realize that using these substances becomes their psychological refuge and cannot leave it.[3]

Drug abuse, as a social phenomenon and health problem has caused high rates of premature death at the present era especially in the 18 - 29 years age group.[4, 5] Another issue that should be considered more is the change in youth's tendency from traditional drugs such as opium and hashish to synthetic drugs such as ecstasy and crack.[6]

Synthetic drugs refer to a great bunch of narcotics which do not have natural origin and are made through complicated chemical processes in industrial laboratories. There are various and diverse classifications of such substances but generally they can be classified into three groups:

1- Hallucinogens: Hallucinogens affect the central nervous system and change perceptual functions like: LSD, ecstasy, N,N-Dimethyltryptamine (DMT), phencyclidine, angle dust, and etc.

2- Stimulants: Stimulants bring euphoric state by stimulating the central nervous system such as amphetamines, Methedrine, Dexedrine, ice, glass, crystal, etc.

3- Narcotics (depressants): Narcotics weaken Central Nervous System (CNS) and can reduce pain such as morphine, codeine, methadone, Demerol heroin, Iranian crack, etc.[7]

The most important purpose of health educations is to change people's health behaviors by their own participation. People's behaviors such as preventive behaviors of addiction depend on their beliefs. Health Belief Model (HBM) is an important and accurate model that shows the relation between health belief and behavior. This comprehensive model is effective on prevention of diseases and assumes that people's preventive behaviors are based on their beliefs.[8, 9] This research was conducted to determine the effect of health education on performing preventive actions against synthetic drugs dependence based on HBM. It was

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carried out among male high schools students of Kerman in 2015.

Methods

The present research is a quasi-experimental study (interventional). The target population consisted of 100 second and third grade high school students of Kerman, Iran. Samples were selected randomly and classified into two groups of experimental and control (each group contained 50 students). In order to collect samples, one high school was selected randomly from 23 high schools working in Education department of Kerman, the second district. Then, two classes were considered as the intervention group and two classes as the control group; all students of each class entered the study. Students in both intervention and control groups were selected from the same grade and equal age range. Data collection method was a questionnaire including 4 parts. The first part included 8 questions related to demographic information, the second part consisted of awareness items (10 questions), the third part included behavior questions (5 items) and the fourth part included 46 questions related to the health model structures (perceived sensitivity and severity, perceived benefits and barriers, self-efficacy, and cues to action). Scoring process for awareness section was so that 1 point was given to correct options and 0 to other options (the minimum total score was zero and the maximum score was 10). In behavioral questions options got the respective scores; always (4), often (3), seldom (2), and never (0) (the minimum score was 0 and the maximum score was 20). Model structures items were answered on a five-item Likert scale (completely agree, agree, no idea, disagree, and completely disagree) and a score from 1 to 5 was considered for each question. Validity of the questionnaire was examined through face validity; 10 copies of the questionnaire were given to 10 experts of health education, psychology, and counseling. They were then asked to comment on the questionnaire's appearance considering the research purpose. In order to examine the questionnaire's content validity (CVR), experts were asked to evaluate relevancy of tools items and eventually the overall validity of the questionnaire was confirmed. To confirm reliability, 30 students (except the participants) were asked to fill out the questionnaire and later Cronbach's alpha test-retest was used. Averagely Cronbach's alpha and Spearman Brown coefficients were obtained as 0.76 and 0.70, respectively. Questionnaires were distributed among the participants to check their knowledge and then the educational intervention was executed in 2 sessions (1.5 hour) for the experimental group about drugs, addiction, and preventive actions of drug abuse. The educations were in the form of lecture and group discussion to change participants' attitude and behavior. Later, in order to complete the education process the researcher-made educational pamphlet was distributed among the target group to increase their awareness. Two months after educational intervention, both intervention and control groups were asked to fill the questionnaires, and then results of post-test were compared to results achieved through the initial questionnaire administered before the educational program. The comparison was conducted through SPSS software by application of Paired t-test, Independent t-test, Chi-square, and Pearson correlation.

Results

Results indicated that before the intervention, mean scores of perceived sensitivity, perceived severity, perceived benefits, perceived barriers, self-efficacy, awareness, and behaviors of students before and after the intervention were significantly different in the study group, while it was not significant in the control group. Further, a significant difference was observed between mean scores of sensitivity, severity, perceived benefits, barriers, self-efficiency, awareness, and behavior achieved by the intervention and control

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groups. The difference was higher among the intervention group than the control group and it was positive for all structures except for perceived barriers. This issue indicates that education caused significant increase in scores of sensitivity, severity, perceived benefits, self-efficiency, awareness, and behavior. It further reduced perceived barriers of students in the intervention group (Table 1). Moreover, frequency distribution of students' answers to the question about guide to action "Which of the following resources was most effective for you in obtaining the learned contents about drugs and addiction?" before and after the intervention in the study and control groups were evaluated (Table 2).

Table 1. Comparing changes in mean (SD) scores of awareness, behavior, and structures of the health belief model before and after the intervention between intervention and control groups

Group Knowledge, behavior and model structures		Before Mean (SD)	After intervention Mean (SD)	Mean of made changes	Test Paired t-test
Awareness	intervention	4.77 (2.76)	9 (2.70)	4.23	P-value = 0
	Control	5.73 (2.86)	5.06 (4.34)	- 0.67	P-value = 0
	P test*	P-value = 0.088	P-value = 0	P-value = 0	
Perceived sensitivity	intervention	17.43 (3.38)	20.20 (1.95)	2.86	P-value = 0
	Control	16.64 (3)	16.40 (2.56)	- 0.24	P-value = 0.199
	P test*	P-value = 0.279	P-value = 0	P-value = 0	
Perceived severity	intervention	20.36 (2.98)	23.08 (1.44)	2.72	P-value = 0
	Control	20.32 (3.08)	20.42 (3.43)	- 0.08	P-value = 0.836
	P test*	P-value = 0.984	P-value = 0	P-value = 0	
Perceived benefits	intervention	24.06 (4.16)	28.92 (1.77)	4.86	P-value = 0
	Control	24.22 (3.78)	24.38 (3.95)	0.16	P-value = 0.636
	P test*	P-value = 0.841	P-value = 0	P-value = 0	
Perceived barriers	intervention	19.38 (1.91)	17.28 (2.01)	-2.10	P-value = 0.018
	Control	19.02 (2.07)	19.14 (5.71)	0.12	P-value = 0.411
	P test*	P-value = 0.370	P-value = 0.013	P-value = 0	
Self-efficiency	intervention	27.2 (4.74)	30.22 (5.51)	2.94	P-value = 0
	Control	28.40 (4.79)	28.14 (4.46)	-0.26	P-value = 0.271
	P test*	P-value = 0.243	P-value = 0.041	P-value = 0	
Behavior	intervention	14 (2.73)	16.74 (3.24)	2.84	P-value = 0
	Control	14.2 (3.97)	14.12 (4.38)	- 0.16	P-value = 0.407
	P test*	P-value = 0.716	P-value = 0	P-value = 0	

Independent t-test *

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Table 2. Distribution of frequency percentage of guides to action in the two groups before and after the educational intervention

Group	Intervention				Control				Total			
	Before		After		Before		After		Before		After	
Information resources	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Radio & TV	19	(38)	21	(42)	24	(48)	23	(46)	43	(43)	44	(44)
Newspaper, magazines & books	3	(6)	2	(4)	8	(16)	7	(14)	11	(11)	9	(9)
Friends & classmates	11	(22)	12	(24)	8	(16)	9	(18)	19	(19)	21	(21)
School & teachers	2	(4)	2	(4)	1	(2)	1	(2)	3	(3)	3	(3)
Internet	8	(8)	9	(18)	3	(6)	4	(8)	11	(11)	13	(13)
Health care cadre	2	(4)	3	(6)	1	(2)	1	(2)	3	(3)	4	(4)
Other	5	(10)	1	(2)	5	(10)	5	(10)	10	(10)	6	(6)
Total*	50	(10	5	(10)	50	(100)	50	(100)	100	(100)	100	(100)

* Students were asked to choose the best guide to action so each student had to select one guide to action.

Discussion

In this study, the effect of health education based on HBM on students' awareness and performance about preventive behaviors of addiction was evaluated. The results indicated a positive effect of education based on the model on improvement of awareness and preventive behaviors.[10]

The first step to change people's behaviors about an issue is by having enough awareness and knowledge about that. Because having enough awareness and knowledge is a precondition to change belief and also behaviors of people.[11] In the current study, there was a significant relation between changes in awareness and positive behavior, in other words, increase of awareness leads to improvement of people's performances. Based on the results, no significant difference was observed between the intervention and control groups' mean score of awareness before the intervention, but the difference was significant after the intervention.

After the intervention, mean score of perceived sensitivity increased 14% in the intervention group. Mean score of students' perceived sensitivity about consequences of drug abuse was also significantly different among the intervention and control groups; the change was positive and higher in the intervention group than the control group which indicates the positive effect of education. Results achieved about students' perceived sensitivity are consistent with results of studies conducted by Shojaei Zadeh et al. (2014) and Solhi et al. (2013) on the effect of education on perceived sensitivity of the target group about drug abuse.[12, 13]

In the present study, mean score of students' perceived severity in the intervention group increased 13% and students obtained 92% of total score after the educational intervention. Results indicated that mean difference of change in perceived severity score is significant between the intervention and control groups. These results are consistent with results achieved by Shojaei Zadeh et al. (2014), Solhi et al. (2013), and Rahnavard et al. (2011) which have been conducted to evaluate effect of education on perceived severity of the target group about drug abuse.[12-14]

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Mean score of students' perceived benefits in the intervention group increased 20% after the intervention; from 24.06 to 28.92. After the educational intervention, members of this group obtained 96.4% of the perceived benefits' total score. Results indicated that mean difference of change in score of perceived benefits is significant between the intervention and control groups. Results in studies of Shojaei Zadeh et al. (2014), Solhi et al. (2013), and Rahnavard et al. (2011) on effect of education on perceived benefits of the target group about drug abuse confirmed the results of present study.[12-14]

In addition, after the educational intervention, mean score of the intervention group on removing the perceived barriers has reduced 10.83% and mean score of students' perceived barriers reduced from 19.38 to 17.28. The perceived barriers was significantly different between the intervention and the control groups; these results are consistent with those achieved by Shojaei Zadeh et al. (2014), Solhi et al. (2013) and Rahnavard et al. (2011) on reduction of perceived barriers about addiction and drug abuse.[12-14] They were also similar to studies conducted by Shamsi et al. (2010), Lotfi Mainbolagh et al. (2012) and Alizadeh Siuki et al. (2015), on reduction of perceived barriers about preventive behaviors of self-medication and nutrition in students.[15-17] Participants of the above mentioned study indicated that the most important barrier in the field of addiction prevention is lack of a program to train life skills about resistance against drug use in schools. Solhi et al. (2013) reported that the most important perceptions related to perceived barrier was difficulty in "saying no" (refusal) against friends and peers' suggestion to use addictive substances and difficulty in stating the addiction problem.[13]

In this study, score of students' self-efficiency in the intervention group increased from 27.28 to 30.22. Results showed that mean difference of change in score of self-efficiency is significant between the intervention and control groups. This difference is positive and higher in the intervention group which indicates positive effect of educational intervention based on HBM on self-efficiency of students. Results in studies of Najimi et al. (2010), Khorsnadi et al. (2010) and Tavassoli et al. (2010) confirmed the results related to self-efficiency structure in the present study.[18-20]

In this research, the most important guide to action was TV and radio; in this field Taremian mentions that if mass media programs be designed and planned well, they can increase social norms considerably. So, people's behaviors in the field of addiction will be changed and prevented.[21]

In the present study, mean scores of students' behaviors about prevention of addiction in the intervention group showed 14.2% of increase. The amount of change in behavior mean score in the intervention group was significantly different from the change of mean score in behavior of the control group before and after the intervention. Therefore, increase of the behavior mean score in the intervention group can be attributed to the effect of educating group. The same result were reported indicating the positive effect of health education on improvement of behavior in the target group in prevention of addiction Shojaei Zadeh et al. (2014), Solhi et al. (2013) and Rahnavard et al. (2011) Fadaee et al. (2013), Raeesi et al. (2014) Beaulieu et al. (1988) Botvin et al. (2003) 26.Cuijpers (2002) and Heckman et al. (2011).[12-14, 22-27]

Analysis of the present study indicated that correlation among students' behaviors with awareness and structures of HBM was significant and the highest correlation was found between perceived benefits and behavior. Masoudi Borujeni et al.[21] determined that all components of HBM had a significant relation with students' preventive behaviors about drug abuse. Furthermore, two structures of self-efficiency with correlation of 0.559 and perceived sensitivity with correlation of 0.379 had the highest effect on preventive behaviors.

Conclusion

From findings of this research, it can be concluded that designing a study based on HBM

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can affect students' awareness, perception, and eventually their behaviors in the field of preventing addiction and drug abuse. Considering the correlation among structures of HBM especially perceived benefits with students' behaviors, it can be concluded that more attention should be paid to adolescents' perceptions related to drugs and addiction in future studies.

Conflicts of Interest

The authors also have no conflicts of interest and have no involvement that might raise the question of bias in the results reported here.

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Authors' Contribution

Conceptualization, S.S.M.M., S.M.Y.A. and S.Kh.; Methodology, S.Kh. and H.F.; Investigation, F.S., S.M.Y.A.; Writing – Original Draft, H.F.; Writing – Review & Editing, S.S.M.M. and F.S.

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