ORIGINAL RESEARCH

Impact of education on knowledge and attitude of medical students about the abuse of prescription drugs in Iran

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Abstract

Introduction: The abuse of prescription drugs is considered as an important challenge for societies. Regarding many factors contributing to this challenge and its negative impact especially on young and educated people, there is an attempt in this paper to survey the impact of education on knowledge and attitude of medical students about the abuse of prescription drugs.
Material and Methods: This was a quasi-experimental study, which was conducted on medical students. Two groups of 53 medical students were selected as participants for both intervention group and control group. These participants were studied using the researcher-made questionnaires about knowledge and attitude toward the abuse of prescription drugs.
Results: Education plays a significant role in both raising the students' awareness and changing their attitude about the abuse of prescription drugs. The age variable had a significant relationship with pre-training knowledge. The female participants had less pre-training knowledge about drug abuse so that it was not observed after intervention.
Discussion: It is suggested that education can be considered as a strategy to prevent drug abuse and reduce the demand for drug abuse by raising the awareness and amending the attitudes as well as promoting the anti-consumption culture.

Keywords: Education, Attitude, Knowledge, Abuse, Drugs, Medical student

Introduction

The abuse of prescription drugs and addiction to them is a chronic and recurrent phenomenon with serious physical, financial, social and family consequences. This phenomenon is growing among the younger generation of the world and has become one of the issues of concern in the present age. It has also spread to the educational centers such as schools and universities and has become one of the serious challenges facing the educators [1]. On the other hand, substance use in relation to unemployment varies depending on educational level [2]. According to the World Health Organization's statistics, the annual average of 185 million people were suffering from drug abuse over the period of 2001 to 2003 constituting 3% of the world population [3,4]. According to the annual report of the World Health Organization in 2005, there are about 200 million of opiate addicts in the world, and according to the same report, the highest prevalence of addiction was in Iran by 8.2% followed by Kazakhstan with 3.2% and Russia with 1.2%[5]. On the other hand, treatment of drug abuse and its addiction can create many problems, and the risk of relapse after quitting drugs is also very high. For this reason, the need for its prevention is raised [6]. Efficacy studies show that even short addiction medicine training programs can be effective in improving knowledge, skills and attitudes related to addiction medicine [7]. Furthermore, as we know, many of the medications that are prescribed in the medical field such as pseudoephedrine, codeine, ritalin, benzodiazepines are abused by many patients and even by those people without any particular disease, which can result in disastrous consequences for both the consumers and societies. Thus, it is very obvious that the medical community should have profound knowledge of drug abuse and its negative consequences for those people suffering from the problems of the drug abuse [1]. Some studied have been conducted in Iran on the impact of education on attitude of people about the drug use, but there are a few researches regarding the effect of education on attitude of the Iranian medical community.

Therefore, this paper studies the impact of education on knowledge and attitude of medical students of Zanjan University of Medical Sciences about the abuse of prescription drugs. The rest of this paper is organized as follows: First of all, hypotheses of this research are introduced. Then the methodology is provided. After presenting the result section, discussion is provided. Then related work is discussed and finally the last section concludes the paper.

Hypothesis

In this study there are two hypotheses that are presented as follows:

Hypothesis 1: Education has positive impact on students' awareness about the abuse of prescription drugs.

Hypothesis 2: Education has positive impact on changing students' attitudes about the abuse of prescription drugs.

Materials and Methods:

Sample

Participants in this survey were medical students who were selected from the Medical Faculty of Sciences. A total of 106 subjects were recruited which were divided into two groups (intervention group and control group) with 53 participants in each group. The sample was comprised of 56 women (52.8%) and 50 men (48.2%). The average age of the participants were 20 years old ranging from 18 to 22 years. Only 2 of 106 participants were married (1.8%). It should also be mentioned that 8 participants had experienced some type of physiological disorder (7.5%).

Variables

There are five variables in this survey that are divided into three groups of dependent, independent and field variables. These five variables include knowledge level (dependent), attitude (dependent), age (field), gender (field) and educational intervention (independent).

Design

This was a quasi-experimental study, which was conducted on medical students of the Zanjan University of Medical Sciences in 2014. Two groups of 53 medical students were selected as participants for both intervention group and control group. These participants were studied using the researcher-made questionnaire about knowledge and attitude toward the abuse of prescription drugs. Five psychiatrists and psychologists tested the validity of the questionnaire, and unclear and ambiguous corrected parts were eliminated. Then, the process of test-retest technique evaluated the reliability of the questionnaire.

Each student was given adequate explanations about the plans, and before starting training they were given the questionnaires to complete. After that, a four-week training course as theoretical and Q & A session was held. This course was conducted on a weekly basis with one session in every week. After completing the course, the post-test was conducted within one month using the same questionnaire. Meanwhile, the students were divided into two groups; one group was considered as the control group that received no training.

Data collection

The data collection tool was a questionnaire that was comprised of the following sections:

Section one: personal and demographic information including age, sex, married status, etc.

Section two: evaluation of the students' knowledge regarding prescription drugs such as tramadol, ritalin, etc.

Section three: information about consumption of these drugs and the way students had got familiar with them. These sections were self-report.

Section four: evaluation of students' awareness and attitude about the abuse of prescription drugs

Data analysis

After collecting the questionnaires, SPSS and paired t-test were used to analyse the data.

Ethical disclosures

The following ethical considerations were taken into account in our survey:

- Participation in this study was not mandatory. In fact, the participants were given the opportunity to leave the survey location in each stage of the survey they wish or not to complete the questionnaire.
- The collected data were analysed as completely confidential.
- The official permission for the research was taken from the university.
- The students were emphasized that they should not write their names on the questionnaires and ensured that all the questionnaires are collected at the same time for statistical analysis. The results, published under the auspices of the ethics committee.

Results:

To perform this study, a questionnaire as pre-test including personal and demographic information and evaluation of the students' awareness and attitude about the abuse of prescription drugs (diazepam, clonazepam, alprazolam, Ritalin, tramadol, codeine containing medicines, etc.) was designed and distributed among the participants.

In the first stage, 67 students were recruited. This number was significant, since the sample size was supposed to be at least 48. A four-week training course including one session for every week was held. Of these, 53 participants fully completed the survey, and then the control group was matched accordingly by sex and age. After the training course and the question and answer sessions, again the same questionnaire was given to the students. Then the data obtained from post-test questionnaire along with the personal and demographic information obtained from the pre-test questionnaire were analysed using SPSS, paired t- test and inter-group two-way analysis of variance.

Analysis of the first hypothesis:

The analysis of the first hypothesis was performed using paired t-test to compare the total score of the attitude about prescription drugs in two groups (experimental and control) and in the two intervention conditions including before training and after training (Table 1).

Group	Pre-test and Post-test	Average	Standard Deviation	Abundance	t- test	Significance
Experimental	Pre-test	54.77	6.28	53	26.36	0.0001
	Post-test	2.87	7.33	53		
Control	Pre-test	55.87	7.95	53	0.77	0.44

Table 1: Comparison of attitude between experimental and control groups of medical students

It can be seen from table 1 that only the average of the experimental group's post–test attitude has significant difference compared to pre-test. However, this is not significant in the control group. The Figure 1 shows this pattern.

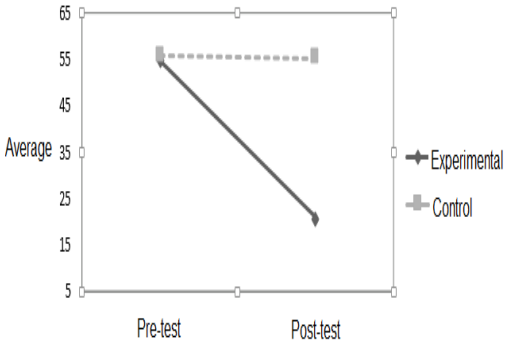

Figure 1: Comparison between the impacts of education on the students' attitude in two groups of medical students

Thus the first hypothesis is approved, and it can be concluded that education reduces the students' negative attitude about the abuse of prescription drugs.

Analysis of the second hypothesis:

The analysis of the second hypothesis was performed using paired t-test to compare the total score of the awareness about prescription drugs in two groups (experimental and control) and in the two intervention conditions including before training and after training (Table 2).

Group	Pre-test and Post-test	Average	Standard Deviation	Abundance	t- test	Significance
Experimental	Pre-test	5.04	1.45	53	-40.33	0.0001
	Post-test	15.49	1.33	53		
Control	Pre-test	5.11	1.48	53	-3.99	0.001
	Post-test	5.47	1.43	53		

Table 2: The results of paired t-test about comparison of awareness between experimental and control groups of medical students

It can be seen from table 1 that there is a significant difference in post-test training in both groups. However, the increase average of the experimental group is much higher than that of the control group (Figure 2).

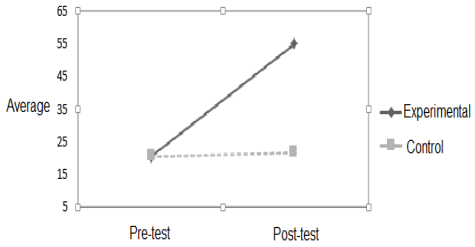

Figure 2: Comparison between the impacts of education on the students' awareness in two groups of medical students

Thus, the second hypothesis is approved, and it can be concluded that education increases the students' knowledge about the abuse of prescription drugs. Our findings show that the most common way of encountering with the prescription drugs is Internet and mass media with 39.6 %. It was closely followed by friends and peers influence with 37.7 % and 26.6%, respectively. This finding is consistent with the findings of a research conducted at the Zanjan University of Medical Sciences that found mass media to be the most common way of encountering with prescription drugs [8]. Regarding the abuse of the prescription drugs, the greatest percentage was related to academic problems with 24.5%. It was followed by family problems and the friends' recommendation respectively. This finding is consistent with some reports that anxiety with 34.42% [9] and pain relief with 32.7% [8] are the most common motives of having tendency for drug use.

Based on our findings, the most common drug used by students is codeine- containing medicines. It should be mentioned that the students' average familiarity with this drug was 16%. This finding is consistent with a research that the abuse of codeine-containing medicines was reported as 16.5 % [8]. Moreover, our findings indicate that the participants in our survey had started to abuse Methylphenidate, ritalin at the age of 17 years old (6.6%). This finding is consistent with findings of a survey that has reported the figure of 6.9% for the same drug [10]. Also, among the three variables of age, sex and drug use, only the age variable had a significant relationship with pre-training knowledge. It was also determined that the female participants had less pre-training knowledge about drug abuse (p value <0.001) so that it was not observed after intervention.

Discussion:

According to the results of our research, education can significantly reduce the negative attitudes of the experimental group about the abuse of prescription drugs. It also increases this group's awareness of the negative consequences of these materials. These results are consistent with the findings of the Blak's survey that revealed students after passing a training course had more negative attitude about the abuse of prescription drugs [11]. Therefore, the increase in knowledge of the abuse of prescription drugs can increase the negative attitude about them and reduce the probability of their abuse. This research also indicates that education can be considered as a strategy to prevent the drug abuse. It can reduce the demand for prescription drugs by increasing knowledge; amending attitudes and promoting anti-consumption culture in the societies. Other studies conducted in this regard have also shown that education has positive effect on youngsters' attitude and knowledge of the abuse of prescription drugs. In one study, it was shown that education had positive impact on knowledge and attitude of an Iranian petrochemical company's staff about drug abuse [12]. This finding is consistent with our study. The approach of providing accurate and true information to the people is based on this idea that people show antisocial behavior and does undesirable things because they do not have precise and accurate information of the issues. So, if people are given accurate and real information, they will show less tendency to corrupt and inappropriate behavior. It is clear that prevention is always better than treatment since it offers more logical solutions for promoting the mental and physical health of people. The basic assumption of the preventive strategies is that drug abuse prevention is easier, cost-effective and more efficient than treatment. To achieve this objective, the prevention of the risk factors is essential. Several internal factors such as cognitive, attitude and personality aspects of individuals can make them more vulnerable. In fact, those

people who are aware of negative consequences of the drug abuse is less likely to turn to it compared to people who have no enough information in this regard. Regarding the reasons why medical students and physicians turn to the abuse of prescription drugs, following reasons are suggested:

1- Competition in the medical examinations and passing the special courses has been very heavy in recent years that have caused many students to use drugs.
2- Doctors may ensure sever pressure during their studies that can cause depression and increase the tendency to the use of drugs in the form of self-medication.
3- In recent years, a dramatic increase in the consumption of stimulants in the country has been reported and it seems the medical community has been influenced too.
4- Another factor influencing the students and physicians 'attitudes about drug abuse is that they think that drugs can boost their abilities. This attitude can be effective in expanding consumption among this group.

Related work

Several studies have been conducted on the abuse of drugs among students. In a study that was conducted on the prevalence of drug use among students at 21 Iranian state universities it was shown that about 5.8% of students stated that they were addicted to drugs. Also,, about 3.1% were considered themselves highly addicted. It was also indicated that 8.9% of students were addicted to drugs [13]. In another survey conducted on tramadol abuse among students in Hamedan, it was shown that 12.5% of the students have experienced the abuse of tramadol at least once [14]. Consumption of benzodiazepines was the subject of another research. It was revealed that there was a significant relationship between gender of consumers and some items such as type of illness, causes of the use, field of study, prescription practices and side effects [15]. The prevalence of drug abuse as a high-risk behavior among students in Zanjan has been investigated in [16]. This research found that the materials used by students are water pipe (4.49%), cigarettes (8.34%), alcohol (8.15%), codeine and tramadol (2.15%), Ritalin (2.3%), cannabis (8.2%), amphetamines (5.2%) and heroin (1.1%) respectively. In a study at the University of Michigan in 2004, the prevalence of drug abuse as non-medical use was studied. It was shown that the prevalence of use was 9.6% [10]. In another study conducted on the impact of a training course on knowledge, attitude and performance of the junior medical students at University of Newcastle in Australia, it was shown that in general the mentioned course had highly positive impact on knowledge, attitude and performance of the students in relation to alcohol abuse [17].

Conclusion:

It can be concluded that education can be used as a strategy to prevent drug abuse and reduce the demand for drug abuse by raising the awareness and improving the attitudes as well as promoting the anti-consumption culture. Moreover, education plays a significant role in raising the students' awareness and changing their attitude about the abuse of prescription drugs. The most common reasons for the abuse of prescription drugs from students' views are academic problems, family problems and friends' recommendations respectively. Also the most common drug used by students is a codeine-containing compound. Following recommendations are suggested to prevent medical students from using drugs:

- Conducting workshops and training courses
- Improving the quality of life of students
- Improving the mental health of students

It is also recommended that in addition to conducting wide research regarding drug abuse in the society, individual and group training as well as introducing various web sites can be considered in order to increase the vulnerable people's knowledge of drug abuse and raise the families' awareness of negative consequences of it.

Conflict of interests

Authors declare no conflict of interests.

References:

1. Mohhamadpur A, Fakhari A, Rostami F, Vahidi R, Dastgiri S. Epidemiological study of psychotropic drugs and alcohol

consumption amonghigh school male students in Tabriz. Journal ofArdabilUniversity of Medical Sciences. 2007; 4: 400-408.
2. Melchior M, Chollet A, Elidemir G, Galéra C, Younès N. Unemployment and Substance Use in Young Adults: Does Educational Attainment Modify the Association?. Eur Addict Res 2015;21:115-123
3. Moghadam H., Farnaghi F, Sarjami S, Zirakzadeh H. The knowledge of medical studens of the Shahid Beheshti University of Medical Sciences about ecstasy. Journal of Medical Sciences of Qannoon.2007; 3: 131-128.
4. SadrabadAK, ChavoshzadehZ, RadmaneshMH, MahdiA. The effectiveness of healthy behavior training program in students' attitudes towards drug abuse and decrease of vulnerability to addiction. Journal of Substance Abuse Addiction Research. 2010; 14: 76-63.
5. Asgari S, Amini F, Naderi G, Roozbahani R. Addiction risk factors for cardiovascular disease. Journal of the Birjand University of Medical Sciences. 2009; 15: 40-45.
6. Studies and Research Office of Drug Control Headquarters. The effect of public education on the prevention of addiction. Journal of Correction and Rehabilitation. 1996; 41: 31-50.
7. Ayu AP, Schellekens AFA, Iskandar S, Pinxten L, De Jong CAJ. Effectiveness and Organization of Addiction Medicine Training Across the Globe. Eur Addict Res 2015;21:223-239
8. Malaki E. The prevalence of drug abuse and drug dependence among students in Zanjan. PhD thesis, Zanjan University of Medical Sciences, 2007.
9. Bahreinian SA, Ghaedi GH, Yasemi MT, Seghatoleslam T. Drug abuse among the students of the Shahid Beheshti University of Medical Sciences.2004; 53: 66-78.
10. McCabe S, Knight J, Teter C. Non-medical use of prescription stimulants among US college students: prevalence and correlates from a national survey". University of Michigan, Substance Abuse Research Center, Ann Arbor, MI, Harvard Medical School and Children's Hospital Boston, Center for Adolescent Substance Abuse Research, Boston, MA. 2004.
11. Hawkins D, Catatano F, Miller J. Risk and protective factor for alcohol and other drug problems in adolescent and early adulthood. Psychol Bull. 1992; 1: 64-105.
12. Hajebi A, Faridnia P, Zarif M. The effectiveness of education on knowledge and attitude toward substance abuse in the region of South Pars Petrochemical Company. Journal of Occupational Medicine Specialist. 2009; 1: 14-19.
13. Serajzadeh H, Feizi A. Drug and alcohol use among students in public universities in 2001. Journal of Social Welfare. 2007; 25: 85-110.
14. Fathi Y, Barati M. Investigation of the abuse of tramadol and its associated factors in students of three higher education centers in the city of Hamedan. Journal of Hamedan Medical Sciences, 2012, vol 18, no3.
15. Saeedi SN, Moafagh G, Setayesh Y. Benzodiazepine use pattern in the city of Mashhad. Journal of Epidemiology. 2007; 7: 60-66.
16. MahdiF. High-risk behavior among students of city of Zanjan. Doctoral thesis. Zanjan University of Medical Sciences, 2012.
17. WalshR A, Sanson RW, Roche AM. Teaching medical students alcohol intervention skills: results of a controlled trial. Medical Education. 1999; 8: 559–565.