**Effectiveness of substance abuse prevention program on soldiers’ knowledge and attitude**

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**Abstract**

**Aims:** Due to the presence of individuals at high risk situations, military environment can dispose many behavioral diseases. Educational period is a valuable opportunity for instructing and enhancing the soldiers’ knowledge. This study was conducted to investigate the effectiveness of educational programs of preventing from substance abuse on the soldiers’ knowledge and attitude.

**Methods:** This educational program was conducted in 14 military and police force centers in Fars province at two stages. At the first stage, introduced representatives from each camp or garrison were trained as the peer group and at the second stage they trained conscripts of relevant garrisons. Educational materials included a series of pamphlet, slides and booklets. Also, a written questionnaire was used to investigate the effect of training. Paired t-test was used for comparing the pre-training and post-training; and logistic regression was used to assess the effect of variables on the amount of knowledge and attitude.

**Results:** The mean participants’ education was 11.22±3.5 years. The prevention program of addiction significantly increased the knowledge and improved the attitude of conscripts (p<0.001). Among three variables including age, sex and marital status, only age variable had significant correlation with pre-training knowledge.

**Conclusion:** Addiction prevention programs in military environments not only promote the levels of knowledge and knowledge, and improve the attitude, but also enhance individual’s performance.

**Keywords:** Conscripts, Substance Abuse, Prevention, Knowledge, Attitude

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**Introduction**

More than 50% of Iran’s population are aged less than 20 years and are in a region with highest production rate of drugs called Golden Crescent region [1]. The reported estimations of the number of addicts and drug abusers in Iran, suggest about 2 million addicts [2]. There are 200 to 300 thousand IV drug abusers (9 to 16% of addicts) in Iran, [3]. Military environments are among the crowded places that are at risk [4]. Military occupation, due to its type of mission requires strong and healthy individuals and drug use can be directly damaging [5]. There are two factors for these centers to be hazardous. One is having difficult missions and the other is detachment from family and high stress level so that the rate of this stress has been estimated up to 67% [6, 7]. The event of 11 September, 2001 can be noted as an example that smoking and drug use increased among officers associated with that incident after occurrence [8]. However, it has been shown that the programs to reduce stress and anxiety effectively reduce the amount of substance use [9]. Nowadays substance use is considered as one of the main problems of military administrators in western countries [10, 11]. On the other hand, consumption of each addictive drug or alcohol can cause a severe drop in accuracy and finally the work output or productivity [12, 13]. On the other hand, soldiers who had positive urine test at the beginning of their service used more medical and health services than other soldiers [14]. Studies conducted on drug prevention programs in the United States, indicate the impact of these programs on demand reduction [15]. The prevalence of substance use among a country's military forces is highly related to the prevalence of drug use in the associated population. The implementation of prevention programs is very useful and valuable [16]. In the United States, all people are examined and tested in terms of substance use, at their arrival time and also periodically. This issue and also the implementation of prevention programs have led to considerable decease in smoking and drug use [17]. The implementation of education programs to prevent substance abuse in military environments has been very successful, so that in a study in the United States during 1980 to 2005, it was found that the process of...
drug use and smoking and the number of at-risk people has been reduced, although these programs have had no effect on reducing alcohol consumption [18]. In a study conducted on European countries’ military air force, it was found that the positive percentage of urine tests in these people has reached from 4.67% in 1985 to 0.69% in 1991 and this decrease has been due to prevention programs [19]. The implementation of substance abuse prevention program in the military environment has been legislated in Finland. Influenced by these programs, the rate of substance abuse has been reduced significantly in military personnel in Finland and is about 0.004 [20]. Among the successful and efficient methods in substance abuse prevention in educational environments such as schools and work environments such as military environments, is using peers in the education programs [21, 22]. Teaching substance abuse prevention, especially through peer education is economically significant and the cost-saving ratio of these programs has been 26 to 1 [23] and not only reduces the demand for drug consumption but also causes a noticeable decrease in the injuries caused by work [24]. This study was conducted with the aim of investigating the effectiveness of educational programs to prevent substance abuse in military environments and also to determine the problems in implementation of these programs in military environments.

Methods

This intervention study was conducted using before and after comparison method without a control group on 25 thousand people deployed in 14 military and police centers from 2007 to 2008. At first, in a one day period, teachers were familiarized with the concepts and definitions of addiction, addiction condition in Iran and the world, various type of drugs and methods of opposing addiction and addiction prevention principles, using booklets (3 series), pamphlets (7 series) and educational slides (4 series). Then each center was given, according to the number of soldiers and workers, 1000 to 3000 pamphlets and a CD containing the educational slides (5 series) were given to the military centers and they were asked to take steps toward the training of their soldiers. Training was conducted by the study authors in five centers. To investigate the effect of training, a 25-question questionnaire (containing 15 questions regarding knowledge and 10 questions regarding attitude) were used. The total score of knowledge and attitude were 15 and 9, respectively. Initially, the soldiers completed the questionnaire before training. The training of soldiers took an average of three hours, and one hour later, the post-test questionnaire was completed. Content and face validity of the questionnaire was confirmed by 3 experts after minor modifications. The reliability of this tool had the kappa coefficient of 0.85 by its retesting on 30 soldiers prior to the beginning of the study. Considering the alpha to be 0.01, beta of 0.9 and standard deviation of 3, the number of samples required in this study was estimated to be 265 people. On the one hand, since garrisons were considered as clusters, the effect size equaled to 1.5 times was added to the sample size and the required number of samples was calculated as 397. Considering the reluctance of some soldiers to participate, the pre-test and post-test was taken from 650 soldiers that only 235 soldiers completely answered these tests and some of them did not insert their personal information due to security limitations and the disagreement of data protection unit. Finally, full implementation of project was only possible in 10 out of 14 centers.

To compare the pre-test and post-test, paired t-test was used and to investigate the effect of some variables on knowledge and attitudes, logistic regression was used.

Results

The average age of soldiers was 24.41±3.77 years (range of 18 to 43 years) and their mean study duration was 11.22±3.5 years. None of participants was illiterate. 82.7% were single and the rest were married. There was a significant difference between the mean score of knowledge and attitude between pretest and posttest (p<0.001; Table 1).

<table>
<thead>
<tr>
<th>Stage → Test</th>
<th>Number</th>
<th>Pre-Test</th>
<th>Post-Test</th>
<th>The Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>213</td>
<td>8.46±2.87</td>
<td>10.67±2.47</td>
<td>0.001</td>
</tr>
<tr>
<td>Attitude</td>
<td>208</td>
<td>7.72±1.46</td>
<td>8.45±0.88</td>
<td>0.001</td>
</tr>
</tbody>
</table>

With regard to the median and outcome variables as the indicator of knowledge and attitudes before the training and also the change of knowledge and attitude due to teaching, values less than the median were considered as unacceptable (zero) and values higher than it were considered as acceptable (one). Only the age had effect on knowledge before training, so that before training knowledge increased with increase of age (Table 2).
No significant difference was observed between any of variables (including age, education level and marital status) and pre-training attitude and also the difference of attitude before and after training and the difference of knowledge before and after training (p>0.05).

Discussion

As shown in Table 1, the implementation of education programs to prevent substance abuse was effective in promoting knowledge and attitudes of soldiers (p<0.001). The results of many studies indicate that these programs have a considerable effect on reducing drug abuse [15]. Preventive educational programs about substance abuse can also be very useful and effective in military environments [17], so that a study in the United States during 1980 to 2005 revealed that it has reduced the drug use and smoking and the number of at-risk people [18]. Results of similar studies suggest the effectiveness of these interventions [20, 25]. Implementation of prevention programs in the work environment, together with general education, can hugely increase the effectiveness of such programs [26]. However, according to the pretest scores obtained in this study, general and background information of soldiers is at an acceptable level, which is the result of trainings presented in school, or public education through media and other mass media. Of three variables of age, education and marital status, only age was correlated significantly and directly with the pre-training knowledge (p<0.01). This means that general information and knowledge of people has a direct relationship with aging and passing various training courses. This information can be obtained through mass media and training courses at work place or somewhere else. Considering the effectiveness and cost effectiveness of preventive education of substance abuse by peers, these programs should be implemented in environments such as schools, factories or military environments with the help of counterparts [21, 23, 27]. Identifying of risk factors in each region and implementation of training programs accordingly, will enhance the effect of training programs [28].

Table 2: Effect of age, education and marital status on before training knowledge

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sig.</th>
<th>Exp(B) = OR</th>
<th>CI OR 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.005</td>
<td>1.228</td>
<td>1.065-1.42</td>
</tr>
<tr>
<td>Marital status</td>
<td>0.242</td>
<td>1.760</td>
<td>0.68-4.53</td>
</tr>
<tr>
<td>Literacy</td>
<td>0.284</td>
<td>1.062</td>
<td>0.95-1.18</td>
</tr>
<tr>
<td>Constant</td>
<td>0.0001</td>
<td>0.002</td>
<td>0.0001-0.046</td>
</tr>
</tbody>
</table>

For the implementation of any educational program in the military and police environment, all the relevant authorities should be informed of all phases of the project’s processes and for the implementation of program, a written cooperation commitment should be taken in order to obtain better results. This task should be considered more in all centers belonging to military forces. Unless obtaining 100% approval of the military authorities, one should not implement the project. For successful execution of research programs, before beginning of the program, related forms should be approved by the security unit or other authorities. Overall, the implementation of educational programs should not be accompanied with the implementation of research projects in the military and police environments, because obtaining the necessary data and information of military personnel is accompanied by high resistance.
For successful implementation of educational programs in military and police environments, the use of counterparts and colleagues of the target groups will be very useful and it is a scientific method.

Conclusion

Information and knowledge of soldiers at the time of entering military centers is acceptable, but this will not reduce the effectiveness of prevention training. Educations related to hazardous behaviors of substance abuse are necessary for soldiers, especially considering the rapid emergence of new drugs and materials.

Acknowledgement: Dariush institution is appreciated for approval of this project (A/45/84) and financial and scientific support of it. In addition social and guidance deputy of police of Fars province, especially Captain Jahanbazi and Colonel Mohammad Javad Mazloomian and the Red Crescent Society of the Fars province are thanked. During the implementation of the program, the sincere cooperation of commanders and representatives of military and police units was highly beneficial, and hereby the cooperation and assistance of these dear ones is sincerely appreciated.

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