Effectiveness of peer-led media education program for drug prevention among students

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ABSTRACT

Background: Researches showed that interactive programs on drug abuse prevention are generally a more effective than non-interactive ones. As a kind of school-based intervention, peer-led is a new interactive tool designed to utilize social influence theory for drug abuse prevention at school years. The present study was designed to investigate the effectiveness of peer-led education program on students’ drug use prevention.

Methods: In this quasi-experimental study, the samples selected from four boys and three girl’s high schools (n = 500) assigned in intervention group (n = 250) and control groups (n = 250) randomly so that one girl’s (n = 250) and one boy’s (n = 125) school allocated in each intervention. All students filled a self-report drug use experiment questionnaire at pre-test and post-test stages. The data were analyzed via mean, SD and ANOVA.

Results: Compared with the control group, intervention group who received education via peer-led program decreased students’ drug use rates significantly. Conclusion: Peer-led could be a cost-effective method for drug abuse prevention purposes. This program needs to be assessed and examined in different contexts.

KEY WORDS: Forensic sciences, forensic medicine, drug use prevention, student-based media, school-based intervention

INTRODUCTION

Schools use a large number of different strategies to reduce or prevent youth substance use. In the last decade, many reviews of substance abuse prevention have been published [1-6]. The researchers concluded that some forms of preventive activities were effective. For example, according to review done by Botvin (1990) approaches including resistance-skills training, educating students about social influences of substance use and training specific skills of effectively resisting these pressures alone or in combination with broad-based life-skills training results to decreased substance use [1].

More recent reviews generally concurred with Botvin’s conclusions regarding the relative effectiveness of social skills approaches as opposed to information-only and affective approaches to classroom-based instructional programs, but researchers raised question about other different modalities (other than classroom instruction), and suggested that different content (other than social skills training) might also be effective. For example, Hansen and Gottfredson indicated that approaches aimed to changing normative beliefs about drug use are effective. They mostly use the results to correct misperceptions about the prevalence of use, engages youths in discussions to elicit their opinions about the appropriateness, included testimonials from admired peers emphasizing unacceptability of drug use [4,5]. Instructional programs that incorporate these norm setting activities was successful in drug use reduction [3,5], but non-instructional programs that employs these methods outside of the classroom are also effective [7,8].

A meta-analysis compared effect sizes across 11 intervention categories of student-based prevention, including 7 types of individually focused and 4 types of environmentally focused interventions. The results indicated that environmentally focused interventions are generally more effective than are individually focused interventions in reducing alcohol in compare to other drug use. The report concluded that additional research on a wider variety of plausible strategies for substance abuse prevention is sorely needed. It also showed that although the type of student-based strategy accounted for significant variation in the effect sizes, substantial unexplained variance remained after partial ling-out modality. Other factors must also contribute to program effectiveness [9].
Reviews have suggested that the delivery mechanism may be important moderator variables. Tobler and Stratton, for example, reviewed studies of student-based drug prevention programs that were available to the entire students and targeted grades of 6-12. The results revealed that “interactive” programs (e.g., those affording much opportunity for interaction among the adolescents) were more effective than “non-interactive” programs (e.g., didactic presentations). They also showed that program content categories (e.g., social influence, information only, affective) were correlated with mode of delivery (interactive vs. non-interactive), and suggested that some of the positive effect previously attributed to program content may, in fact, be due to the delivery method [10].

Hansen suggests that the training and background of the leader and the fidelity of presentation might be more important than the content of the message [5]. However, Tobler compared effect sizes for programs delivered by different types of leaders [6]. Mental health professionals and counselors produced the largest effects, followed by peers and then teachers. Most likely, the content of the message and the characteristics of the leader interact to produce more or less effective programs, but this assertion has not been subjected to an empirical test. The evidence suggests that peer-led education may be more effective, resulting in greater positive changes in health behavior, than adult-led interventions, although the analytical and methodological problems of these studies indicate that the case is not entirely proven [11].

Finally, we can conclude according previous studies the student based prevention programs are effective, and deliverer has a high impact on the result. Many studies conducted in abroad in term of drug prevention program although most of them involved with considerable limitations such as small size, non-clear intervention or methods, included only girls or only boys, surveyed only cigarette or special substance, specially they used adults as leader in their program while we decided to use students as a leader. Therefore, authors of this study decided to design first native study considering previous studies gaps and included big sample size, boys and girls, all substances and cigarette and more importantly we employed the students as deliverer. The term ‘peer educators’ generally refers to students delivering an educational program who are of similar, or slightly older, age than the students receiving the program.

Therefore, the authors aimed to evaluate the effectiveness of peer-led as a student-based approach to drug using behavior.

METHODS

This study was a randomized pre-test, post-test design so that the pre-test provide a baseline to examine the effectiveness of the interventions. The proposal of this study approved by scientific and ethical committee of Tehran University.

Setting

Participants were from suburban areas of Tehran. The participating district reflects many areas in Iran with students at high risk for problematic behaviors but lacking many community protective factors. Substance use in such fields is increasingly acknowledged as a dangerous problem, and this study sought to ascertain if a model program would be effective in such a setting.

Sampling

Six high schools include 2 boy’s school, and 2 girls’ schools selected randomly and then they assigned randomly to each intervention (peer-led and control) so that one girls’ school and one boy’s school assigned in each intervention. Totally, 500 students assigned in two groups of intervention (n = 250) and control (n = 250).

Intervention

The intervention was led by teachers and professionals. The peer-led intervention was a new modeled by trained peer students under the supervision of psychologists. This media designed an anti-drug message (drugs related damages, normative education, resisting social influences to use drugs) each day and published it via wall-newspaper. The interventions took 10 weeks and at the final stage of the intervention a post-test carried out. The control group did not receive any special intervention and continued to their usual curriculums.

Tools

We used a self-report questionnaire to record the frequency of drug consumptions during the past month. It simply asked participants how many times they had used any psychoactive drugs during the past month. The questionnaire included demographic information and questions about used substances kind, frequency, family history, etc.

Statistics

For analysis of data the descriptive statistic, i.e., mean and standard deviation and analysis of covariance used to compare the control and intervention groups. SPSS version 20 software used for analysis of the data.

RESULTS

Descriptive Results

The age range of students was between 15 and 17 years old. The samples were students of high schools in 10th, 11th, 12th grades. The most common used substance was methadone (13%), opium (12%), tramadol (12%), marijuana (4%), ritalin (4%), amphetamine (2%), others (2%). Most of the user students in our sample had user parents (17.2%) and user friends (20%).

<table>
<thead>
<tr>
<th>Groups</th>
<th>Males (%)</th>
<th>Females (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer-led</td>
<td>125 (16.6)</td>
<td>125 (16.6)</td>
<td>250 (33)</td>
</tr>
<tr>
<td>Control</td>
<td>125 (16.6)</td>
<td>125 (16.6)</td>
<td>250 (33)</td>
</tr>
<tr>
<td>Total</td>
<td>375 (50)</td>
<td>375 (50)</td>
<td>750 (100)</td>
</tr>
</tbody>
</table>
Table 2: Analysis of covariance for comparing frequency of drug uses in intervention and control group

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Significant</th>
<th>Partial eta squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected model</td>
<td>2319.435(^a)</td>
<td>3</td>
<td>773.145</td>
<td>2378.965</td>
<td>0.001</td>
<td>0.905</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.000</td>
<td>1</td>
<td>0.000</td>
<td>0.001</td>
<td>0.970</td>
<td>0.000</td>
</tr>
<tr>
<td>Pre-test</td>
<td>2306.840</td>
<td>1</td>
<td>2306.840</td>
<td>7098.141</td>
<td>0.001</td>
<td>0.905</td>
</tr>
<tr>
<td>Interventions</td>
<td>14.666</td>
<td>2</td>
<td>7.333</td>
<td>22.563</td>
<td>0.001</td>
<td>0.057</td>
</tr>
<tr>
<td>Error</td>
<td>242.444</td>
<td>746</td>
<td>0.325</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2935.000</td>
<td>750</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected total</td>
<td>2561.879</td>
<td>749</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)R^2 = 0.905 (adjusted R^2 = 0.905)

Table 1 depicted the sample composition regarding each group based on the participants’ gender. As it could be seen, the total number of 500 participants included 250 boys, and 250 girls took part in our study. Each group included 250 participants (125 male and 125 female).

Comparing the groups via analysis of covariance controlling for the pre-test frequency of drug consumption showed that the frequency for the groups were significantly different (F\(_{2,746} = 22.563, P < 0.01\)). In addition, the interventions were counted for 90% of changes in drug using behaviors (R\(^2 = 0.9\)). These results are depicted in Table 2.

**DISCUSSION**

The results of comparison showed that peer-led had significant differences with control group regarding frequency of drug consumption. This implies that ten sessions interventions including drugs related damages, nonmature education, resisting social influences to use drugs beside publishing and attaching newspapers in media based group was effective in the attitude of students toward cigarette and substance. It seems the delivered education helped them to find out that how much attitude is important in vulnerability of people.

This result is similar to findings of Botvin et al. reporting that 6-year randomized trial school-based drug abuse prevention programs in general and this approach, in particular, can reduce the prevalence of drug use [12].

In Iran, the results of Barati et al. showed that educational manipulation including assertive skills had a significant effect on intervention group’s average response for persuading substance abuse [13]. In another study, Ahmad et al. revealed that life skills training is effective in reduction of depression and positive attitude toward substances which is similar to results of this study [14].

In term of student media intervention, some previous findings exist which is not directly related to substance abuse, for example, peer-led health education has been advocated as a potentially effective method of providing health education in schools [15].

A rationale for using peer-educators relates to the social influences theoretical model, based on the theories of social learning [16,17], social inoculation [18] and social norms [19]. These theories relate to the observation that friends seek advice from friends and are also influenced by the expectations, attitudes and behaviors of the groups to which they belong [20].

Underlying this is a concept that peer influence may be stronger than that of adults such as teachers or “experts.” Peer-led education has been used extensively to meet a variety of educational objectives, such as tutoring of reading [21], and peers have been used in a wide variety of health-related initiatives [22-24]. Peer-led education has used successfully in presenting lectures/lessons, drama productions, supporting resource centers, operating hot-lines, and one-to-one counseling [21].

Peer-led education may be exciting and novel, and requested by younger teenagers, but there needs to be evidence for effectiveness before this process can be recommended for standard health education: “Health educators must carefully assess how to use peer educators to enhance their health promotion and disease prevention efforts [20].”

**CONCLUSION**

This study highlighted the beneficial results of using potentials of volunteer students under the supervision of professionals which is cost effective. It is cost effective and takes much less times of educational system also show more persistence. These characteristics make the peer-led an easy tool to prevent health related problem behaviors. The results support the conclusion that a peer-led is effective in preventing drug use among high school students. This study was involved some limitations such as self-report questionnaire, short follow-up, it is limited only to one city and geographical area and included only middle class Muslim students. This is suggested to use peer led program for substance use prevention in other areas in compare to other interventions including interviews.

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There is no conflict of interest in this study, and this manuscript presents part of PhD thesis.

**REFERENCES**

Hasel, et al.: Preventing drug abuse among adolescence


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