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## Immediate and Six- Month Outcomes of a School-Based Substance Prevention Program (Project TND) for Iranian High School Students

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### Abstract

The main purpose of this study was to determine whether or not a school-based substance prevention program would provide any change in behaviors associated with substance abuse and aggression in Iranian high school students? This paper outlines the outcomes of immediate and six month follow-up of a 9-session version of *Project Towards No Drug Abuse* (TND). A total number of 1180 students from 8 high schools (41 classrooms) of Zahedan in southeast of Iran were recruited and surveyed at a pre-test. The participants ranged from 15-18 years of age. Sample high schools were selected randomly and assigned to either intervention or control conditions. The students in interventional condition (21 classrooms) participated in project TND curriculum. Delivery of curricula took place over a period of 6-weeks. Results of first and second post-tests revealed noticeable changes in using illicit drugs, Truancy from schools, physical fighting and carrying weapon during past month among students in intervention condition. The findings confirmed that Project TND can be implemented effectively with students of Iranian high schools as well as high risk students in western countries.

*Keywords:* School-based prevention, Drug use, TND, Student, Iran

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### 1. Introduction

Substance abuse as a community problem (Bauman, Phongsavan, 1999); particularly using substance by students is associated with many problems. Due to different reasons schools are appropriate settings for implementing drug abuse prevention interventions. For example, about eighty percent of drug abusers initiate substance use before adulthood (Faggiano, Vigna-Taglianti, Versino, et al., 2008). Moreover, students spend one fourth of their active or waking time at schools. Therefore, implementation and assessment of intervention programs can be feasible and easy tasks within school system (Sussman, 1996). Tobler (1986) categorized school-based programs into three groups namely: knowledge-focused, affective-focused and peer or skill-focused interventions. Furthermore, Tobler and Stratton (1997) based on another meta-analysis of 120 school-based programs grouped them into interactive and non-interactive programs. Many studies have been done to evaluate the efficacy of school-based interventions

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in preventing drug abuse among students (Rollin, Rubine, Hardy- Black; et al., 1994; Shope, Copland, Marcoux, Kamp, 1996; Sussman, Dent, Stacy, Craige, 1998; Dent, Sussman, and Stacy, 2001; Sussman, Dent, Craig, Ritt-Olson, and McCuller, 2002). A systematic review (Faggiano, Vigna-Taglianti, Versino, et al., 2008) indicated that skill-based interventions [such as Project Towards No Drug Abuse (Project TND)] are the most effective form of school-based programs.

The Project towards No Drug Abuse (Project TND) as a school-based intervention, initially designed for preventing or reducing drug abuse among students of alternative high schools (Sussman, 1996), and the project based on a model entitled "Motivation-Skills- Decision Making Model (MSD)"(Sussman, 1996; Sussman, Dent, Stacy, 2002). According to the MSD, drug abuse is associated with lack of motivation, general social skills, and cognitive processing skills (Sussman, Dent and Stacy, 2002). Thus, nine sessions of Project TND were designed to address these deficits. The first three sessions focus on motivation, teaching and listening skills, the second three sessions are supposed to instruct coping skills and the last three sessions concentrate on encouraging no drug abuse and making healthy decisions (Sussman, 1996; Dent, Sussman and Stacy, 2001). Some follow up studies (Sussman, et al., 1998; Sussman, Dent, and Stacy, 2002; Sun, Skara, Sun, et al., 2006) showed a significant reduction in the using of drugs by participants at years 1-5, after implementing of the project TND. Also, Applicability of the Project TND has been evaluated at regular (traditional) high schools (Dent, Sussman, Stacy, 2001) and outcomes were similar to results of those studies conducted at alternative high schools.

Substance abuse is a major problem in Iran (Bakhshani, 2002; Mokri, 2002; Bakhshani, Lashkaripour. Sadjadi, 2008), and most of individuals who are referred to treatment centers, have started to use drugs at least 11 years before attending to treatment (Mokri, 2002). Ahmadi & Hassani (2002) in a study found that 30.23% of Iranian high school students have used substance(s) at least once during their lives and almost 14% of students reported that they were still using substances including cigarettes (8.3%), heroin (1%), morphine (0.3%), alcohol (4.3%), opium (0.8%), LSD (0.3%), cocaine (0.5%), hashish (0.8%), and marijuana (0.8%)."

Despite the prevalence of drug use and the need for effective programs for preventing and reducing substance abuse in our country, we did not find any systematic study regarding school-based prevention interventions for youths. Therefore, the current study was performed to evaluate generalizability and applicability of the 9-session version of Project Towards No Drug Abuse (TND) in reducing substance abuse and some related risk behaviors among students of Iranian traditional (public) high schools.

## **2. Method**

A total number of 1180 students from 8 traditional (public) high schools (41 classrooms) of Zahedan (southeastern Iran) were recruited and surveyed at pre-test. Because of 90 incomplete questionnaires only 1090 of 1180 questionnaires (557 of intervention condition and 513 of control condition) were analyzed. The participants ranged from 15-18 years of age. Sample high schools were selected randomly and assigned to either intervention or control conditions. The students in interventional condition (21 classrooms) participated in 9-session version of project TND curriculum (Sussman, 1996). Delivery of curricula took place over a 6-week period and prior to implementing the program, educators participated in a 30 hours training workshop. Trained classroom teachers implemented the program using a step by step Persian manual for teachers and also a student workbook. The student's workbook included a summary of basic topics of each session and also activities which were designed to be carried out by the students as out of session practices (homework). The mentioned booklets (teacher's manual and student's workbook) were developed based on 9-session version of the Project TND. The core topics (lessons) of the 9-session programs are: Introduction, communication and active listening, Stereotyping, Myths and denial, Chemical dependency, Talk show, Stress, health and goals, Self-control, perspectives and decision making and commitment.

A week and six months after implementation of the program the students in interventional condition completed the first and second post-tests but the subjects in control group only completed second post-test. For gathering the data we used High Risk Behaviors Questionnaire (HRBQ); (Bakhshani, Lashkaripou, Bakhshani and Hoseinbor, 2006). Furthermore, for assessing the knowledge of participants we used a researcher-made questionnaire. The obtained data analyzed by using descriptive indices such as frequency and percentage.

### 3. Results

In pre-test (baseline), about 5.6% and 2.9% of students in intervention condition reported using illicit drugs and smoking respectively during 30 days preceding the survey and approximately 32% reported truancy from school, 25.3% involving in a physical fight, 38% involving in a verbal fight and 10.7% reported carrying weapon (gun or knife). Whereas, these figures amongst control group were 3.3% (smoking cigarette), 3.5% (drugs), 22.7% (truancy), 17.2% (physical fighting), 23.6% (verbal fighting), and 10.8% (carrying weapon). The results of immediate and six-month post-tests for intervention group and results of post-test for control group are shown in Tables 1 and 2.

The frequency of students who replied correctly to questions about identification of effective communication skills, self-fulfilling prophecy, brain storming, and importance of open mind and self-controlled behaviors are reported in table 3.

Table 1. The frequency of students who used substance during last 30 days

Groups	Pre-Test F(%)	Post-Test1 F(%)	Post-Test2 F(%)
<b>Intervention Group(n=577)</b>			
Smoking cigarette	32(5.6)	5(0.86)	9(1.6)
Using illicit drugs	17(2.9)	14(2.4)	8(1.5)
<b>Control Group(n=513)</b>			
Smoking cigarette	17(3.3)		16(3.1)
Using illicit drugs	18(3.5)		23(4.5)

Table 2. The frequency of students who involved in risk behaviors during last 30 days

Groups	Pre-Test F(%)	Post-Test1 F(%)	Post-Test2 F(%)
<b>Intervention Group(n=577)</b>			
Truancy	185(32)	137(23.7)	108(18.7)
Physical fighting	146(25.3)	98(16.98)	98(16.98)
Verbal fighting	220(38)	185(32)	161(27.9)
Carrying weapon	62(10.7)	31(5.4)	32(5.5)
<b>Control Group(n=513)</b>			
Truancy	117(22.7)		102(19.88)
Physical fighting	88(17.2)		97(18.9)
Verbal fighting	172(33.6)		170(33.1)
Carrying weapon	55(10.8)		39(7.6)

Table 3. The frequency of correct responses to knowledge – related questions by participants

Groups	Post-Test2 F(%)
<b>Intervention Group(n=577)</b>	
effective communication skills	370(64.1)
self-fulfilling prophecy	324(56.2)
brain storming	355(61.5)
Being open mind	352(61)
Self controlled behaviors	361(62.6)
<b>Control Group(n=513)</b>	
effective communication skills	142(27.68)
self-fulfilling prophecy	45(8.87)
brain storming	91(17.7)
Being open mind	93(18.12)
Self controlled behaviors	307(59.84)

#### 4. Discussion

The main objective of the present study was to examine the applicability and generalizability of a school-based prevention program, developed on basis of Project TND, in reducing substance use, truancy from school, fighting and carrying weapon at Iranian public high schools. The results showed noticeable reductions regarding these risk behaviors after implementation of intervention program. During six-month follow up the results revealed that the program led to reduction in smoking, substance use, truancy from schools, physical and verbal fighting and carrying weapon during the last month. The results of the current study also indicated that students' knowledge about communicational skills, being open mind, self-fulfilling prophesy and its negative effects, brain storming intended for solving the problems and the importance of self-control were improved. In other words, the intervention has been able to increase students' knowledge and awareness. The results of a study by Sussman et al., (1998) revealed that at one year follow up students who participated in program conditions exhibited reduction in using hard drug and alcohol consumption. Moreover, reduction in prevalence of carrying weapon and as well as victimization were found. Although, these findings were related to continuation high school and in case of high risk students but are relatively similar to our results. Our results, also, are relatively compatible with results reported by Dent et al., (2001) concerning the generalizability and feasibility of TND for general high schools. However, both mentioned trials (Sussman et al., 1998; Dent et al., 2001) confirmed 1-year effects of implementation of the 9-session version of TND on reducing hard drug, alcohol abuse, carrying weapon and victimization but they did not found effects on smoking and marijuana.

Many factors were associated with positive effects of drug abuse prevention curricula. Dusenbury and Falco (1995) after reviewing the preventive school-based programs performed between 1989 to 1994, as well as interviewing with 15 specialists in field of drug abuse prevention, noted that the effective programs had included eleven components such as theoretical and research background, presenting information appropriate to developmental stage of participants, instructing resistance skills, normative training and attention to cultural conditions of the target population. We believe that the preventive program utilized in the present study included most of the above mentioned key factors. Possibly, these characteristics of Project TND made it an effective intervention program. In general, the previous reported studies confirmed that skill-based interventions had improved drug knowledge; decision making skills, resistance skills and self-esteem (see also Faggiano et al., 2008).

However, reducing substance misuse and some risk behaviors through implementation of the program among Iranian students was a considerable finding.

However, because of several limitations, the results of current study are limited to only those students whom were accessible. In addition, it should be kept in mind that the most of the youths who abused drugs were out of schools or dropped out before reaching high school level. Also long term follow up is a necessary to examine maintenance of results therefore, further studies are highly recommended.

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