

# THE EFFECTIVENESS OF SCHOOL-BASED DRUG RESISTANCE EDUCATION PROGRAM IN THE UNITED STATES

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## Abstract

There are two major approaches to overcome drug problems: supply reduction and demand reduction. Supply reduction strategy is implemented by law enforcement agencies and aims to constrict the supply by disrupting the illicit drug market and preventing drug distribution in the society. On the other hand, demand reduction strategy implemented through treatment and education aims to reduce the demand on drug. Many researchers emphasize that the best way to curb drug abuse is to target youth and prevent them from initiating drug use at an early age before getting in contact with drug. In many countries, reports show that young people start drug use as early as age 15. Therefore, most drug prevention programs target young people while in school. This is very important due to the fact that young people starting drug abuse at early age are more likely to use more dangerous drugs and become persistent addicts. This study briefly explains the main drug control strategies and then discusses the theoretical framework behind the school-based drug education programs. In the following paragraphs, the authors aim to make an in-depth analysis of the studies that examine the effectiveness of the school-based drug resistance education programs in the US.

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**Keywords:** Drug Abuse, Drug Demand Reduction, School-based Drug Prevention, DARE Program

## Introduction

Drug control is one of the most important public policy issues for policy makers because drug abuse has tremendous economic and social consequences in many countries. The fact that drug abuse threatens the whole society by creating victims and diminishing quality of life can be

considered as the social cost. On the economic side, the impacts are the costs on health care system, criminal justice system, and the costs of lost productivity.

Drug control policy has been based on two major approaches in overcoming the drug problem: demand reduction and supply reduction. Demand-side strategy is implemented through treatment and education programs aimed at reducing the demand on illegal drugs. On the other hand, supply-side strategy implemented by law enforcement agencies focuses on constricting supply by disrupting illegal drug market, thereby preventing illegal drug distribution in the society. Therefore, the past experiences in many countries have showed that neither supply reduction nor demand reduction effort has been independently successful in “fighting drug”.

Traditionally, more efforts and resources have been allocated to law enforcement agencies to reduce the supply of drugs. But today, more emphasis is given to drug demand reduction activities especially in the developed nations. For this purpose, governments develop and implement drug awareness and education programs that mostly target schools and youth. The Drug Abuse Resistance Education (DARE) Program of the US is one of the best-known school-based drug prevention programs in the world. There are, however, controversies in the literature about the effectiveness of the DARE program in preventing students from abusing drugs.

This study firstly briefly explains the main drug control strategies and then discusses the theoretical framework behind the school-based drug education programs. In the following paragraphs, the authors aim to make an in-depth analysis of the studies that examine the effectiveness of the school-based drug resistance education programs in the US.

### **Drug Control Strategies**

There are two major approaches to overcome the drug problem in the literature: demand reduction and supply reduction. Demand reduction strategy implemented through treatment and education program aims to reduce the demand on drug. Supply reduction strategy is implemented by law enforcement agencies and aims to constrict the supply by disrupting the illicit drug market and preventing drug distribution in the society (Harmon, 1993). In the literature, there are a number of studies that examine both supply-reduction and demand-reduction policies.

#### *a-) Supply Reduction and Law Enforcement:*

According to Moore,” the basic goals of supply reduction and drug law enforcement agencies are to minimize the supply of drugs to illicit markets and to increase the price and inconveniences of acquiring drugs” (Moore, 1990 p. 115). By targeting to reduce production, distribution, and

sales of drug at street level, distributing and selling illicit drug will be more risky and shortage of drug will increase the price to drug users (Sahin & Matusitz, 2012). Consequently, consumption and demand for drug will decrease (Hawkins & Catalano & Miller, 1992).

However, there is some contrary evidence against the argument mentioned above. Some scholars claim that increasing drug interdiction and arrests of drug dealers would not have any significant effect on the retail price and availability of drug. Thus, there will be always large amount of drug that will be substituting the drugs seized by the law enforcement agencies. On the other hand, increasing arrests will not reduce drug supply and would result to prison overcrowding; since arrests are mostly street level dealers, there will be always many people taking arrests' place. This is one of the main arguments posed by drug legalization advocates (Kucukuysal, 2011). Therefore, it is difficult to argue that supply reduction efforts alone are effective for coping with drug problem.

*b-) Treatment:*

The target of treatment efforts is addict people and these efforts basically aim to reach and treat addicts by persuading them for recovery. However, majority of the literature regarding drug treatment suggests that though billions of dollars are devoted, treatment is not effective on reducing drug use. The effectiveness of treatment is much lower particularly among young people (Marcus, 2010).

According to Harmon (1993), drug abuse is not only psychological and physical drug dependence problem for most adolescents. Hence, it is mainly related with their 'life problems'. It is not possible to treat drug addicts by not considering their family, school, peer groups, and environment. Therefore, treatment strategies pay more attention to these kinds of problems. Harmon suggests that since most treatment programs are designed for dealing with physical dependence, they appear ineffective for young people. However, it does not mean that treatment programs should not be implemented. If treatment programs are revised and redesigned to focus more on general life problems of youth by taking into account of family and social environment, the programs are more likely to be effective in reducing drug use (Harmon, 1993).

*c-) Prevention:*

Many researchers agree that the best way to control drug abuse is to target youth and prevent them from initiating drug use at an early age before getting in contact with drugs. In many countries, reports show that young people start using drugs as early as age 15. Therefore, most drug prevention programs target young people while in school. This is very important due to

the fact that young people who begin to use drugs at early age are more likely to use more dangerous drugs and become persistent addicts.

Traditional prevention programs focus on information dissemination and education. These programs are based on the assumption that young people use drug because of the lack of information regarding addictive drugs. Contemporary programs focus more on psychological issues such as psychological inoculation and skill training of resistance to peer pressure. Researchers suggest that contemporary prevention programs are more effective than traditional ones in reducing drug use among youth (Hanson, 1980; Kinder, Pape, & Walfish, 1980; Malvin, Moskowitz, Schaps, & Schaeffer, 1985; Unlu, Sahin, & Wan, 2014). According to Harmon (1993), having adequate information about the negative effects of drugs is not enough for young people to avoid initiating drug use. Rather, they need to gain personal and social skills such as decision making and resistance to peer pressure. (Unlu et. al., 2014).

### **Theoretical Framework**

School-based drug education programs are generally based on social influence theory, social inoculation theory, and social skill training model stemming from social learning theory approach.

Social influence theory suggests that in a population, behavior or thoughts of an individual are affected and changed by the behavior of others (Watts, 2006). The resistance skills training approach emphasizes teaching personal and social skills to resist “negative social influences” derived from peer group. Social inoculation theory focuses on the fact that there are endemic drug use and peer pressure to use drug in the environment where young people live; therefore, they need to understand how peer pressure operates and learn how to resist it. They need to learn some skills like how to cope with these kinds of situations, and what to do in the situations when offers to use drugs exist. Drug prevention programs should focus on the environment in which the students live, rather than the students themselves (Goode, 1999). Social learning theory suggests that observing and modeling the attitudes, behaviors, and other people’s emotional reactions are very important. People learn not only by experiencing, but also through the actions of other people (Bandura, 1977).

These theories suggest that the behavior of drug use can be altered by the interactive training programs teaching on how to cope with social pressures to use drug. Programs aiming to change the attitudes and the value about drug are more likely to produce effect on drug use than those aiming to provide knowledge about drug.

Since drug abuse mostly begins during adolescence stage, schools are the best places where great majority of the young people can be reached.

Therefore, drug prevention programs should be concentrated in educational settings. School-based programs basically focus on three assumptions regarding underlying reasons of drug use among young people. First assumption is that youth use drugs because they do not have sufficient knowledge regarding the risks and consequences of drug use. If they have sufficient knowledge about drugs, they will exhibit rational behavior and have more negative attitudes about drug use. On the other hand, “there is even some evidence that this approach may lead to increased usage, possibly because it may stimulate adolescents’ curiosity” (Botvin et al. 1990 p. 487). Second assumption is that youth use drugs because their social and personal values and skills are not adequately developed (Ringwalt & Grzene& Ennett and Iachan, 1994). By increasing the main components of personal and social development such as self-esteem and interpersonal skills, young people can make reasonable decisions regarding drug use. Third assumption is that because of the lack of personal and social skills necessary for resisting social pressure (peer pressure) to use drugs, young people are likely to use drugs (Ringwalt, et al., 1994). According to this approach, by focusing on interactive learning methods such as role-playing and participating in behavioral competencies, programs teaching to improve personal and social skills such as decision making and communication are likely to enhance the capability of young people to resist drug use.

### **Evaluation of Previous Studies on the Effectiveness of School-based Drug Prevention Programs**

Great majority of the studies in the US evaluated the effectiveness of Drug Abuse Resistance Education (DARE) program which is a wide spread school-based drug prevention program for students across the country. The DARE curriculum, thought by uniformed police officers, aims to teach students skills for resisting peer pressure to use drug and recognizing negative consequences of drug use. In this study, previous research will be evaluated in four categories: effectiveness of the program in preventing drug abuse, effectiveness of the program in affecting attitudes about drug use, effectiveness of the program in affecting peer resistance, and effects of school characteristics in affecting the effectiveness of the program.

#### *a-) Are the programs effective in preventing drug abuse?*

The main question for any drug prevention education program is whether the program prevents drug use. Most studies in the literature shows mixed results pertaining to this question (Table 1.). While some studies have shown significant difference between program groups and control groups (non-program), other studies have shown no statistically significant difference. Many studies are similar in terms of their research designs.

However, pre and post tests were conducted and units of analysis were fifth or sixth grade students.

**Table 1. Studies Testing Drug Use**

Author	Year	Location	Sample	Design	Results
Nyre, Rose, and Bolus	1990	Los Angeles	Sixth grade through Junior High	Pre and multiple Post Tests	Significant Difference
Ringwalt, Ennet, and Holt	1991	North Carolina	Fifth and sixth grade students	Pre and post Tests	No Significant Difference
Becker, Aglopian, and Yeh	1992	Long Beach	Fifth grade students	Pre and Post tests	Significant Difference
Dukes, Ullman, and Stein	1996	Colorado Springs	Ninth grade students	Survey of DARE and Non-DARE students	No Significant Difference

One of the most important studies in this field was conducted in Los Angeles in 1990. Longitudinal pre and post test design were used to evaluate the effect of DARE program on the drug use among sixth grade students. Significant difference between DARE and control groups was found in terms of drug use; however, sample size was very small (33 DARE students and 236 non-DARE students).

Second study, conducted in North Carolina is one of the most noted researches on the effectiveness of school-based drug education programs. 10 schools were assigned as DARE group and other 10 schools were assigned as control group not receiving program training. Pre-test was administered to all students in the study before the program, and right after the program, post-test was administered. The study reflected the reducing effect of the program on the drug use by the treatment group students; however, it was not significant.

*b-) Does the Program Affect Attitudes about Drug Use?*

The second question that research studies on effectiveness of prevention program aim to answer is: does the program change the students' attitudes about drug use? The results of the study on this question are also mixed (Table 2.).

**Table 2. Studies Testing Attitudes about Drug Use**

Author	Year	Location	Sample	Design	Results
Manos	1986	Honolulu	Fifth grade students	Pre and post Tests	No Significant Difference
Nyre, Rose, and Bolus	1990	Los Angeles	Sixth grade through Junior High	Pre and multiple Post Tests	Significant Difference
Ringwalt, Ennet, and Holt	1991	North Carolina	Fifth and sixth grade students	Pre and post Tests	Significant Difference
Clayton, et al.	1991	Lexington, KY	Sixth grade students	Pre and post Tests	Positive Findings but No Significant Difference
Becker, Aglopian, and Yeh	1992	Long Beach	Fifth grade students	Pre and Post tests	Significant Difference

The Los Angeles research did not detect the difference between DARE group and control group students' attitudes about drug use. In the study, conducted in Lexington, KY, researchers surveyed fifth grade students regarding their attitudes about drug use. According to the results of this study, 89 percent of the DARE students reported that DARE program provided them with negative attitudes against drug use. The rest of the students reported no influence at all. In the other study in Honolulu which included 37 elementary schools, the research included 486 students from non-DARE schools and 155 students from DARE schools. Although improvement on the attitudes of all the students was observed between pre and post tests, no statistically significant differences were found in drug related student attitudes. In the North Carolina study, statistically significant difference was found between program and control group students in terms of attitude about drug use.

As a result, previous studies produced mixed results about the question on attitudes against drug use. Even if the results of all studies were not statistically significant, all results are exposed to positive direction between program and control groups. That is, the program created a negative attitude on the students against drug use.

### *c-) Does the Program Affect Peer Resistance?*

Answering this question is very important to evaluate the effectiveness of the school-based drug prevention education programs because creating peer resistance and ability to say 'no' to drug use is an important objective of the curriculum of the programs.

However, previous studies examining peer resistance produced again mix results (Table 3).

**Table 3. Studies Testing Peer Resistance Skill**

Author	Year	Location	Sample	Design	Results
McDonald, et al.	1990	Virginia	Fifth and Sixth grade students	Pre and Post tests	No Significant Difference
Nyre, Rose, and Bolus	1990	Los Angeles	Sixth grade through Junior High	Pre and multiple Post Tests	Significant Difference
Becker, Aglopian, and Yeh	1992	Long Beach	Fifth grade students	Pre and Post tests	Significant Difference

According to the study conducted in Los Angeles, the program group students were significantly less likely to accept a drug offer than the control group students. The researchers in the Long Beach study found a significant difference between control and program groups with regard to peer resistance and suggested that “ the DARE program significantly increased student confidence in their ability to resist solicitation from friends to use drugs” (Becker et. al., 1992). The Virginia study was on the negative side. In this study, researchers found no significant difference between control and program groups in terms of self-concept and self-esteem (McDonald, et. al., 1990).

Some of the recent researches on the effectiveness of school-based prevention programs are designed as meta-analysis. West and O’Neal (2004) provide an updated meta-analysis on the effectiveness of the DARE Project in preventing drug use among young people. 11 studies were selected from 40 articles reviewed in the literature from 1991 to 2002 based on the following inclusion criteria: the researches must be reported in peer-review journal, books etc; the researches must include control and comparison groups; and the researches must include both pretest and posttest. The result is not statistically significant, which means the Project DARE is ineffective. However, this study examined the effect of the programs on only drug use. Changes of attitude and resistance to peer pressure were not included.

There are some limitations of the researches on the effectiveness of drug education programs originated from weak research designs, sampling, and data collection procedures. However, some studies do not include any control group (Correll 1990; McMahan & Wuorenma 1992; Netburn 1989; Silva 1995) or use any non-equivalent control group (McDonald et al. 1990); hence other studies use only post-test design. Great majority of the evaluation studies are designed as quasi-experimental with small sample sizes and without repeated measurement over time. Only a few studies have used randomized experimental design which is the strongest design to assess the program with large sample sizes (Clayton et al 1991; Clayton et al 1996; Lindstrom 1996; Ringwalt et al 1991; Rosenbaum et al. 1994). The other

limitation is that the measurements of the researches on evaluation of drug education programs rely on self-reported scores. These scores are derived from self-reported activities. However, it seems this limitation is unavoidable since there is no other way to capture the changes on the variables such as attitudes.

*d-) Do School Characteristics Affect the Effectiveness of the Program?*

Academic success and location of schools are two important indicators of school characteristics that researchers use in their studies. The studies investigating the effect of school environment on the program effectiveness suggest that the program have more beneficial effects on the students in rural schools than the urban school students (Rosenbaum & Hanson, 1998).

Rosenbaum and Hanson (1998) suggest that in rural schools, program instructors tend to spend more time in the school and have more interaction with students outside the classroom. However, in urban schools, instructors tend to move on quickly to another school. Compared to rural school students, in urban schools, students have less opportunity to connect with the program officers. In rural schools, the officer is more likely to be seen as a part of the school environment. In addition, the fact that the students in urban schools have more negative attitude about police may diminish the credibility of the instructors.

According to the result of the study, the program has more beneficial effects on the students of the schools with relatively high academic success than those of the schools with lower academic success. Since the expectations of the students pertaining to the instructors' teaching performance in the schools with higher academic success are higher, the students are less likely to be impressed by the instructors (Rosenbaum & Hanson, 1998).

## **Discussion and Conclusion**

This study has showed that while some research studies found a positive effect of the DARE program, some studies found no significant impact at all. The critical question that needs to be asked is: Why has the same drug prevention program proved to be successful in some environments, and why is it not successful in other settings?

One reason for this failure is importing and implementing the same DARE program without taking into consideration the specific characteristics of the schools or school environments. It is a common misassumption that if a program has been successful in one setting, then that program should produce the same results in other environments (Kucukuysal & Beyhan, 2011). However, such awareness and educational programs was adapted with

no change and without taking into account the specific condition of a school environment, and needs of the students and characteristics of the community they live in.

Some central premises of the contingency theory can help us understand and find solutions to the problems encountered in the implementation of the school-based drug prevention programs:

- There is no best way to organize it,
- Any way of organizing is not equally effective,
- The best way to organize it depends on the nature of the environment to which organization relates (Scott, 2002, p.95).

From the point of view of the contingency theory, an effective school-based drug prevention program needs to match both the characteristics of the community and the school environment and address the needs of the students. In designing and implementing school-based drug prevention programs, the following questions need to be addressed carefully:

- What are the facilitating or impeding factors in the implementation of a drug prevention program in a certain environment?
- How successful is a drug prevention program in addressing the specific needs of the student in a certain school environment?
- To what extent have the specific characteristics of the community and the school environment been taken into account in the drug prevention program?

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